

Our work in regulating the Scottish water industry:
Setting out a clear framework for the
Strategic Review of Charges 2006-10

volume **1**

**WATER INDUSTRY
COMMISSIONER
FOR SCOTLAND**

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Foreword

My role is to promote the interests of customers. In 2001, I set challenging efficiency targets for Scottish Water. In 2003 I challenged Scottish Water to build on its solid start. I am now increasingly confident that the next two years should see further significant improvement in the performance of the water industry in Scotland. By 2006, I expect that the operating costs of the water industry in Scotland will have been reduced by some £145 million annually in real terms. Customers' bills will consequently be around 15% lower than they would otherwise have been.

Rigorous, objective regulation is therefore beginning to deliver real value to customers. It is important that we build on the improving performance of the water industry in Scotland. This will ensure that value for money to customers will continue to improve and will be sustainable in the medium to long term.

I welcome the announcement by Ministers that the current regulatory regime should be further strengthened. These proposals are consistent with normal regulatory practice in other utilities and in the water industry in England and Wales. In particular, I believe that the introduction of a Commission will help to depersonalise regulation. I also believe that giving the power to the Commission to decide, rather than advise, on prices should improve the transparency of the role of regulation. The proposed rights of appeal that will be available for Scottish Water should be similarly effective in improving transparency.

Scottish Ministers have asked me to prepare the second full Strategic Review of Charges. This Strategic Review will cover the period 2006-10. In preparing the second full Strategic Review of Charges, I have the benefit of some four years of detailed asset, cost and customer information. I will also seek to learn from the experience of the last Strategic Review and the comments that I have received from individual customers and stakeholder organisations. If the Parliament approves the changes proposed by Ministers, it is likely that the final outcome of this Strategic Review will be the first

determination of prices for the water industry in Scotland by the new Water Industry Commission for Scotland.

My focus at this Strategic Review is to ensure that I establish a robust and transparent process and set prices that are no higher than necessary. I appreciate the need to explain to all stakeholders clearly what my Office is doing, and that is why I am keen to facilitate debate about the challenges facing the water industry in Scotland. For example, I have arranged a number of stakeholder information days, and would seek to encourage all interested parties to use these opportunities to have their say.

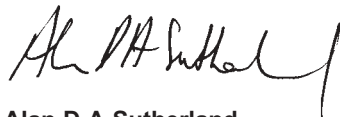
I am committed to the Better Regulation Taskforce Principles of accountability, transparency, proportionality, consistency and targeting. As such, I intend to publish the key information submissions that I receive from Scottish Water, as well as the tools that I will use to complete my analysis, including my financial and tariff basket models.

An important first step in facilitating debate is the publication of a detailed work-plan for the next two years. This plan contains details of all of the key milestones in the Strategic Review of Charges process, including the opportunities for stakeholders to contribute to the debate. I also hope that publishing this detailed timetable of activities will help Scottish Water by giving them advance notice of the inputs and information that I will require from them.

I will shortly be publishing a detailed description of the methodology that I propose to adopt for the Strategic Review of Charges. This methodology will explain the factors that I will take into account in determining efficiency targets, investment levels and customer service standards for Scottish Water in the next regulatory period. I would welcome comments from stakeholders both about those elements of the methodology where I propose to use current best regulatory practice and those areas where I believe there are a range of potential approaches.

Notwithstanding the cost reductions already achieved by Scottish Water, there will still be considerable scope for further improvement after 2006. My aim is to ensure that customers get value for money today without compromising future prices or the service levels that future generations will receive. To that end, I intend to set further operating and capital cost efficiency targets for Scottish Water. These will be challenging but achievable and will ensure that prices paid by customers will be as high as they need to be to ensure a sustainable industry – but no higher than they need to be.

In publishing this forward work programme, I am taking a first step in what I hope will be a fully transparent and detailed process, leading up to publication of final prices for water and waste water from April 2006. I hope that this document will help clarify my approach, so that all parties have a clear understanding of how I intend to set caps on the prices for water and sewerage services that will be paid by customers from 2006.

A handwritten signature in black ink, appearing to read 'Alan D A Sutherland'.

Alan D A Sutherland

Water Industry Commissioner for Scotland

July 2004

Chapter 1

Executive summary

Introduction

This document sets out our forward work programme over the period from now through to 1 April 2006, when the next regulatory period begins.

Regulation seeks to ensure that customers enjoy a value for money service. Customers should be able to count on a supply of high-quality, wholesome drinking water, continuing improvement in our beaches and water environment, and a service that is provided at a reasonable cost. It is the job of the regulator to ensure that customers enjoy a 'silent' service, that is one they can take for granted.

Customers will rightly expect that we build on the progress of the last two years since the last Strategic Review of Charges. This will require effective monitoring of Scottish Water's performance in the remainder of the current regulatory period. We will also need to ensure that prices are sufficient, but no more than sufficient, to fund the levels of service and investment that will result from the *Quality and Standards III* investment programme.

This second full Strategic Review of Charges was commissioned in good time. We are keen to take advantage of the time we have to make sure that the current Strategic Review is as transparent as possible. This detailed explanation of our work-plan is the first in a series of publications that will describe what, when, how and why we will do certain tasks. All of these efforts are designed to ensure that customers can have confidence that they are getting value for money.

We would welcome the views of customers and other stakeholders on this and our other methodology publications. These should be sent to:

Katherine Russell
The Water Industry Commissioner for Scotland,
Ochil House
Springkerse Business Park
Stirling
FK7 7XE

or by email to

SRCTMethodology@watercommissioner.co.uk

We plan to publish five documents about our proposed methodology for the Strategic Review of Charges 2006-10.

The first four of these publications outline how we intend to prepare the 2006-10 Strategic Review of Charges. The four areas covered are:

- our work-plan (this document),
- the regulatory framework in Scotland and lessons learned,
- the calculation of prices,
- the scope for efficiency.

The fifth document is a summary of the first four.

We welcome comments from stakeholders about the content of these publications. The final date for comments is **29 October 2004**.

Regulatory information

Information is vital to effective regulation. We ask Scottish Water for a wide range of information, covering all aspects of its water and waste water businesses. This information allows us to monitor and report on Scottish Water's performance. We continually re-assess these information requirements.

Our key information requests are set out in the table overleaf.

Submission		Frequency of submission	Team that receives the submission
WIC 1/9/14/22	Non-domestic customer revenue information	Twice yearly	Revenue and Tariffs
WIC 4	Domestic customer revenue information	Twice yearly	Revenue and Tariffs
WIC 5	Customer service performance return	Quarterly	Competition and Customer Services
WIC 6	Quality performance assessments (written)	Quarterly	Competition and Customer Services
WIC 18	Quality & Standards final output	Ad-hoc	Investment and Asset Management
Q & S III	Baseline investment programme for Quality and Standards III	Ad-hoc	Investment and Asset Management
WIC 19	Investment appraisal audits	Annually	Investment and Asset Management
WIC 24	Leakage strategy	Annually	Investment and Asset Management
WIC 25	Resource accounting and budgeting (RAB)	Monthly	Costs and Performance
WIC 43	Annual Return 2003-04	Annually	Office-wide
WIC 45	Regulatory accounting (and transfer pricing)	Ad-hoc in 2004-05, but annually from 2005-06 onwards	Costs and Performance
Scheme of Charges	Scottish Water Scheme of Charges submission	Annually	Revenue and Tariffs
CIR	Capital Investment Return	Quarterly	Investment and Asset Management
SBP	Strategic Business Plan	Ad-hoc	Costs and Performance

In England and Wales it is water industry practice for the Office of Water Services (Ofwat) to use a consultant engineer, known as a Reporter, to help verify information submissions. The Reporter audits the information provided to the regulator by the companies and highlights any issues or inaccuracies.

Following discussions involving the Scottish Executive, this Office and Scottish Water, we appointed a Reporter for the water industry in Scotland in December 2003. We expect that this will improve the regulatory process and the reliability of regulatory submissions in Scotland.

The Reporter is Mr David Arnell of Black and Veatch Consulting. He is required to review all aspects of Scottish Water's information submissions, as directed by this Office. This will include auditing both the annual

regulatory return submitted by Scottish Water and its Business Plan submissions, and scrutinising the costing, scope and content of the proposed investment programme. Such scrutiny has played an important role in improving the quality and reliability of information provided to Ofwat by the companies in England and Wales.

The Reporter will remain strictly independent of Scottish Water.

As well as this Office, the Scottish Executive, the Drinking Water Quality Regulator (DWQR) and the Scottish Environment Protection Agency (SEPA) can ask the Reporter to examine Scottish Water's performance in areas relevant to their statutory duties.

We believe that the introduction of a Reporter will give customers greater confidence that the efficiency targets we set for Scottish Water are realistic.

This audited information will inform our work in assessing the scope for efficiency and the sustainable level of prices. As such, it is critical to the Strategic Review of Charges. Decisions about the prices that will be paid by customers from April 2006 will still not be made for some 18 months. There is a considerable amount of information collection, checking and analysis to be undertaken before we can finalise prices.

Ensuring transparency and accountability

We are providing stakeholders with a number of opportunities to make their views known both to us and to the Scottish Executive over the next 18 months. The Scottish Executive will seek the views of stakeholders through two important consultations: 'Paying for Water Services' and 'Investing in Water Services'. These consultations will help Ministers to formulate the detailed Guidance that they are due to provide to this Office in January 2005.

The work-plan for the Strategic Review of Charges also highlights a number of initiatives designed to improve the transparency and accountability of regulation. We

have introduced 'stakeholder information days', which will be held approximately every six weeks. These days will provide a forum for us to outline our progress and for stakeholders to have their say. A summary of these meetings will be made available on our website. Similarly, we are offering a series of three separate briefings to members of the Scottish Parliament.

A staged approach

In order to ensure that stakeholders are able to gain as much as possible from the Strategic Review, and to help manage the process, we have included a number of interim announcements in the work-plan. We have also set a series of dates by which we will have made some of our analytical tools available to stakeholders.

One of the key tools is the financial model. In common with other regulators, we will use a financial model to calculate the revenue that will be required from customers. This financial model allows different cost, investment and timing scenarios to be assessed so that we can be sure that the option that represents best value for money for customers is chosen. The financial model has been conceived and developed using in-house resources and will be subject to an extensive external audit. This audit will review both the workings of the model and internal processes, such as version control, during the preparation of the Strategic Review of Charges.

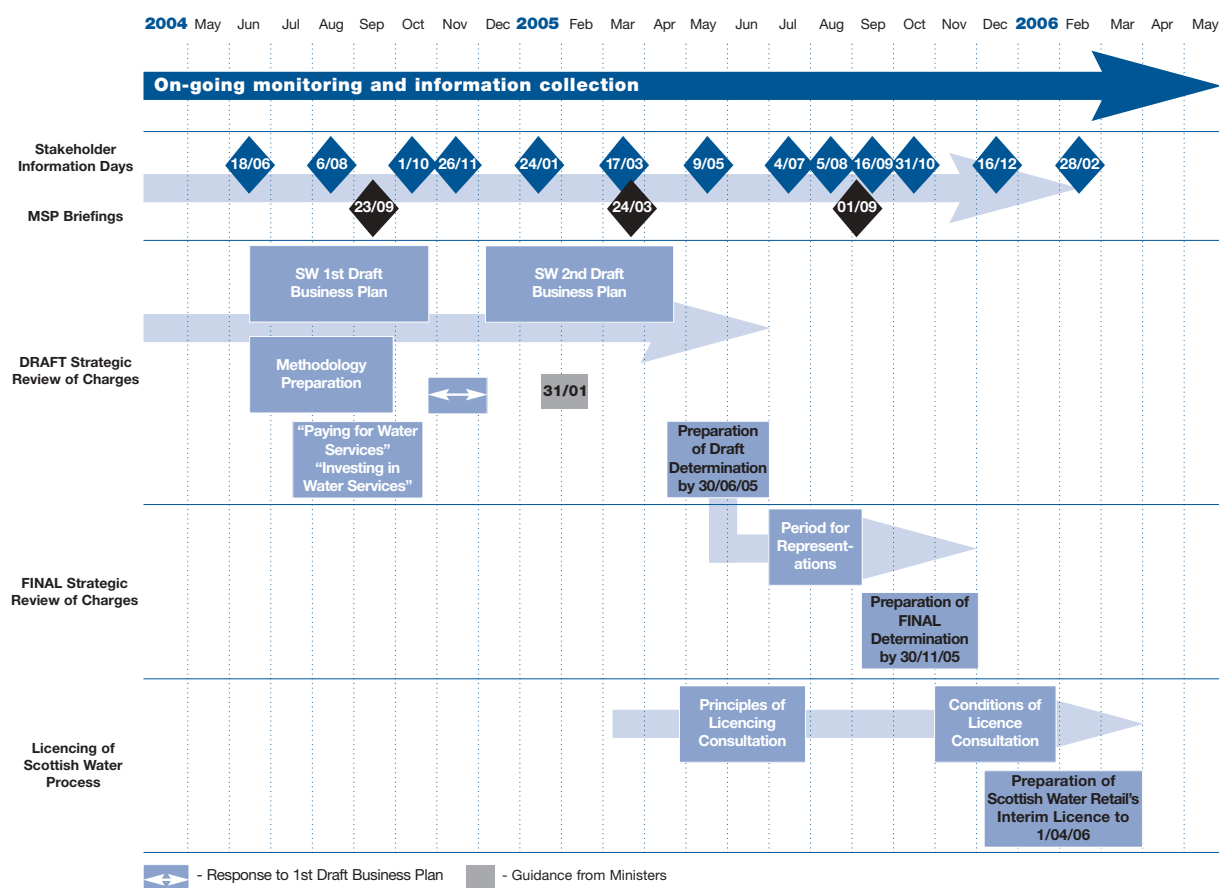
The financial model is constructed using Microsoft Excel¹. It will be made available on our website by the end of September 2004.

The detailed work-plan is reproduced below. Stakeholders should be aware of the following 11 key events in this work-plan:

- Minister's commissioning letter for the 2006-10 Strategic Review of Charges
- Scottish Water submits its Annual Return for 2003-04

- *Quality and Standards III* Consultation
- *Principles of Charges* Consultation
- Scottish Water's first draft Business Plan
- Ministerial Guidance
- Scottish Water's second draft Business Plan
- Scottish Water submits its Annual Return for 2004-05
- Water Industry Commissioner for Scotland draft advice on/determination of charges
- Opportunity for representations by stakeholders
- WICS' final advice on/determination of charges

¹ Stakeholders who wish to download the model will require a licensed copy of Microsoft Excel®.

Figure 1: The calendar of events for the next two years

Minister's commissioning letter for the 2006-10 Strategic Review of Charges

Ross Finnie, Minister for the Environment and Rural Affairs, asked us to begin work on the Strategic Review of Charges. This letter set out initial policy considerations and detailed proposed changes to the regulatory framework.

Scottish Water submits its Annual Return for 2003-04

The Annual Return is the principal information submission that Scottish Water makes to us. The return includes information about customers, assets and financial performance. It also covers progress on the agreed investment programme.

This Annual Return will underpin the draft advice on/or determination of charges.

Quality and Standards III Consultation

The Scottish Executive has coordinated a multi-stakeholder process to determine the objectives of the investment programme for the period 2006-14. This consultation is one of the main opportunities for stakeholders to make the Scottish Executive aware of their views. Following consultation, we expect Ministers to decide on investment priorities for the next regulatory period in January 2005.

Principles of Charges Consultation

This important Scottish Executive consultation will establish how customers should pay for water services. This should inform the Ministerial Guidance in January 2005.

Scottish Water's first draft Business Plan

This first draft Business Plan is due at the end of October this year. We provided Scottish Water with detailed guidance on the requirements for the Business Plan at the end of June. This is an important opportunity for Scottish Water to set out its strategy in some detail. We would expect Scottish Water to highlight any factors that it believes we should take into account in setting efficiency targets or prices.

This plan should also contain Scottish Water's view of an appropriate investment plan for the next regulatory period. This should take account of Scottish Water's knowledge of the Quality and Standards III process, any likely backlog from Quality and Standards II, and its views on the size of a programme that can be efficiently managed.

Ministerial Guidance

Detailed Guidance is due to be given by Ministers at the end of January 2005. This will help inform the draft Strategic Review of Charges in June 2005. It is expected that this Guidance will outline the priorities for investment in the next regulatory period and will detail the principles that should be applied in setting tariffs for customers. This Guidance will also cover issues such as public expenditure and new debt.

Scottish Water's second draft Business Plan

The second draft Business Plan is Scottish Water's final opportunity to communicate its strategy, objectives and resource requirements to this Office. This plan should reflect the Ministerial Guidance that will have been provided at the end of January 2005. The plan should also contain a detailed investment programme that will meet the priorities that were set out in the Guidance. This investment plan will be published in full.

Scottish Water submits its Annual Return for 2004-05

This Annual Return is particularly important as it will inform the final price limits in the Strategic Review of Charges.

WICS' draft advice on/determination of charges

The draft Strategic Review of Charges will be published at the end of June 2005. This document outlines our initial proposals for Scottish Water's price limits for the 2006-10 regulatory period.

Opportunity for representations by stakeholders

Following publication of the draft Strategic Review of Charges, there is a two-month period in which customers and stakeholders can make representations on the initial proposals. During this period, final advice from Ministers to inform the final Strategic Review of Charges is expected.

WICS' final advice on/determination of charges

The final Strategic Review of Charges will be published on 30 November 2005. This will contain our detailed advice to Ministers on the revenue requirements and charging levels for Scottish Water for the period 2006-10. It will explain in detail the processes we have gone through in establishing the revenue cap.

Under current arrangements, the Scottish Ministers are then responsible for taking due account of this advice in deciding the level of funding and the associated charges for Scottish Water. The Ministers' response to our advice is placed in the public domain. The proposals contained in the Water Services etc (Scotland) Bill, (which are discussed in more detail in Chapter 5.10 below), would empower the Water Industry Commission to decide on price limits for Scottish Water, subject to appeal to the UK Competition Commission.

Summary work plan for May 2004–May 2006

Reference	Event	Date
	May 2004	
1.1	WIC 5: Customer service performance return (Quarter 4 – 2003-04)	07/05/2004
1.2	WIC 1/9/14/22: Non-domestic customer revenue information (Quarter 4 – 2003-04)	14/05/2004
1.3	WIC 4: Domestic customer revenue information (Quarter 4 – 2003-04)	14/05/2004
1.4	Presentation by Scottish Water of cost allocation system to Reporter	14/05/2004
1.5	WIC 6: Quality performance assessments (written) (Quarter 4 – 2003-04) – Scottish Water provides complaints files	24/05/2004
1.6	WIC 45: Issue of draft regulatory accounting tables (2003-04)	27/05/2004
1.7	WIC 25: RAB (resource accounting and budgeting) submission for April 2004	28/05/2004
	June 2004	
2.1	Complete draft financial model	09/06/2004
2.2	Award research project on financial ratios and borrowing	09/06/2004
2.3	Workshop for Scottish Executive on methodology	10/06/2004
2.4	Workshop for Scottish Water on methodology	11/06/2004
2.5	Question & Answer session on draft regulatory accounting tables (2003-04)	15/06/2004
2.6	Workshop for academics on methodology	17/06/2004
2.7	Workshop for stakeholders on methodology: 1st stakeholder information day	18/06/2004
2.8	Capital Investment Return: Quarter 4 – 2003-04 submission	18/06/2004
2.9	Write out to workshop attendees on issues raised	24/06/2004
2.10	WIC 43: Annual Return 2003-04 submission	25/06/2004
2.11	Guidance due to Scottish Water on 1st draft Business Plan submission	25/06/2004
2.12	Draft financial model provided to Scottish Water	25/06/2004
2.13	WIC 25: RAB (resource accounting and budgeting) submission for May 2004	28/06/2004
	July 2004	
3.1	Scottish Water to submit initial issues regarding guidance on 1st draft Business Plan	05/07/2004
3.2	Scottish Water to submit initial issues regarding methodology	05/07/2004
3.3	Initiate financial ratios & borrowing project	05/07/2004
3.4	Workshop on 1st draft Business Plan guidance	09/07/2004
3.5	Half yearly meeting with Water Customer Consultation Panels (WCCPs)	09/07/2004
3.6	Workshop for Scottish Water on draft financial model	14/07/2004
3.7	Scottish Water final issues regarding guidance for 1st draft Business Plan	16/07/2004
3.8	Scottish Executive Quality and Standards III consultation	20/07/2004
3.9	Scottish Executive Principles of Charging consultation	20/07/2004
3.10	Publication of the work-plan for the Strategic Review of Charges 2006-10	21/07/2004
3.11	Workshop for Scottish Water on methodology for calculation of prices for the Strategic Review	21/07/2004
3.12	Guidance to Reporter on 1st draft Business Plan audit	21/07/2004
3.13	WIC 25: RAB (resource accounting and budgeting) submission for June 2004	28/07/2004
3.14	Workshop for Scottish Water on methodology for assessing the scope for efficiency for the Strategic Review	28/07/2004
3.15	WICS final clarifications/responses on 1st draft Business Plan guidance	28/07/2004
3.16	WIC 43 Annual Return – 1st round of queries: response due from Scottish Water	30/07/2004
	August 2004	
4.1	Capital Investment Return: Quarter 1 – 2004-05 submission	01/08/2004
4.2	Stakeholder information day	06/08/2004
4.3	WIC 5: Customer service performance return (Quarter 1 – 2004-05)	13/08/2004
4.4	Publication of framework for the Strategic Review of Charges 2006-10	16/08/2004
4.5	Quarterly meeting with Scottish Executive	18/08/2004
4.6	Scottish Water submits draft regulatory accounting tables (2003-04)	18/08/2004
4.7	Publication of report on financial ratio and borrowing	23/08/2004
4.8	WIC 43 Annual Return – 2nd round of queries: response due from Scottish Water	27/08/2004
4.9	WIC 25: RAB (resource accounting and budgeting) submission for July 2004	27/08/2004
	September 2004	
5.1	Scottish Water submits draft investment programme to Reporter for audit	01/09/2004
5.2	Letter outlining initial views on regulatory accounting tables (2003-04)	09/09/2004
5.3	Workshop on completion of regulatory accounting tables (2003-04)	16/09/2004
5.4	Publication of methodology for calculation of prices for the Strategic Review of Charges 2006-10	22/09/2004
5.5	MSP briefing	23/09/2004
5.6	WIC 25: RAB (resource accounting and budgeting) submission for August 2004	25/09/2004
5.7	Scheme of charges – submission due from Scottish Water	27/09/2004
5.8	Publication of methodology for assessing the scope for efficiency for the Strategic Review of Charges 2006-10	29/09/2004
5.9	Publication of summary of methodology for the Strategic Review of Charges 2006-10	29/09/2004
5.10	Publication of draft financial model and draft manual	29/09/2004

Reference	Event	Date
	October 2004	
6.1	Stakeholder information day	01/10/2004
6.2	Asset management process review initiated	01/10/2004
6.3	WIC 25: RAB (resource accounting and budgeting) submission for September 2004	28/10/2004
6.4	Scottish Water submits 1st draft Business Plan	29/10/2004
6.5	Resubmission of regulatory accounts (2003-04) as part of 1st draft Business Plan	29/10/2004
6.6	Baseline investment programme for Quality & Standards III (draft programme)	29/10/2004
6.7	Close of methodology consultations	29/10/2004
	November 2004	
7.1	Capital Investment Return: Quarter 2 – 2004-05 submission	01/11/2004
7.2	WIC 1/9/14/22: Non-domestic customer revenue information (Quarter 2 – 2004-05)	12/11/2004
7.3	WIC 4: Domestic customer revenue information (Quarter 2 – 2004-05)	12/11/2004
7.4	WIC 5: Customer service performance return (Quarter 2 – 2004-05)	12/11/2004
7.5	Workshop on detail of Business Plan (definitional & clarification issues)	15/11/2004
7.6	Revised regulatory accounting and transfer pricing tables (2003-04)	16/11/2004
7.7	Copy of methodology response to Scottish Water & Scottish Executive	17/11/2004
7.8	Methodology response published	19/11/2004
7.9	Reporter's final report on capital programme contained in Scottish Water's draft Business Plan	19/11/2004
7.10	Summary of Reporter's view to Scottish Executive	23/11/2004
7.11	Scottish Water Board presentation on key strategic issues	23/11/2004
7.12	Quarterly meeting with Scottish Executive	24/11/2004
7.13	Publication of high-level summary of Scottish Water's 1st draft Business Plan	25/11/2004
7.14	WIC 25: RAB (resource accounting and budgeting) submission for October 2004	26/11/2004
7.15	Stakeholder information day	26/11/2004
	December 2004	
8.1	WICS response to 1st draft Business Plan and its implications for customers	03/12/2004
8.2	WICS writes to Scottish Water on cost of capital and plans for treating embedded debt	07/12/2004
8.3	Publication of guidance for 2nd draft Business Plan	08/12/2004
8.4	Scottish Water to submit initial issues regarding WICS guidance for the 2nd draft Business Plan	14/12/2004
8.5	WIC 19: Investment appraisal audits	15-16/12/2004
8.6	Half yearly meeting with Water Customer Consultation Panels (WCCPs)	15/12/2004
8.7	Workshop on 2nd draft Business Plan guidance	17/12/2004
8.8	Guidance to Reporters on 2nd draft Business Plan	17/12/2004
8.9	Resubmission of regulatory accounts and transfer pricing tables (2003-04) by Scottish Water	22/12/2004
8.10	WICS draft corporate plan & budget to Scottish Executive	23/12/2004
8.11	Scottish Water final issues regarding guidance for 2nd draft Business Plan	23/12/2004
8.12	WIC 25: RAB (resource accounting and budgeting) submission for November 2004	28/12/2004
8.13	WIC 24: Leakage strategy	31/12/2004
	January 2005	
9.1	WICS final clarifications/responses on 2nd draft Business Plan guidance	10/01/2005
9.2	Draft operating expenditure efficiency targets announced	14/01/2005
9.3	Letter to Scottish Water regarding regulatory accounts and transfer pricing tables (2003-04)	20/01/2005
9.4	Stakeholder information day	24/01/2005
9.5	Workshop on regulatory accounts and transfer pricing tables	27/01/2005
9.6	WIC 25: RAB (resource accounting and budgeting) submission for December 2004	28/01/2005
9.7	Detailed Guidance from Ministers	31/01/2005
	February 2005	
10.1	Capital Investment Return: Quarter 3 – 2004-05 submission	01/02/2005
10.2	Draft capital expenditure efficiency targets published	02/02/2005
10.3	Tri-partite workshop on implications of Ministerial Guidance	09/02/2005
10.4	Stakeholder workshop on implications of Ministerial Guidance	11/02/2005
10.5	WIC 5: Customer service performance return (Quarter 3 – 2004-05)	11/02/2005
10.6	Workshop on efficiency targets	21/02/2005
10.7	Final version of capital programme to be submitted to Reporter for audit	23/02/2005
10.8	Quarterly meeting with Scottish Executive	24/02/2005
10.9	WIC 25: RAB (resource accounting and budgeting) submission for January 2005	28/02/2005
10.10	WICS response to final Guidance from Ministers published	28/02/2005
	March 2005	
11.1	Stakeholder information day	17/03/2005
11.2	MSP briefing	24/03/2005
11.3	WIC 25: RAB (resource accounting and budgeting) submission for February 2005	28/03/2005
11.4	WIC XX: Annual Return 2004-05 guidance issued	End March
11.5	WIC XX: Regulatory accounting and transfer pricing tables 2004-05 guidance issued	End March

Reference	Event	Date
	April 2005	
12.1	Scottish Water submits 2nd draft Business Plan	20/04/2005
12.2	WIC 25: RAB (resource accounting and budgeting) submission for March 2005	28/04/2005
12.3	Launch of initial consultation on licensing	28/04/2005
12.4	Financial model finalised and published	28/04/2005
	May 2005	
13.1	Capital Investment Return: Quarter 4 – 2004-05 submission	01/05/2005
13.2	Workshop on the detail of Scottish Water's 2nd draft Business Plan (definitional and clarification issues)	04/05/2005
13.3	Stakeholder information day	09/05/2005
13.4	Scottish Water Board presentation on key strategic issues	12/05/2005
13.5	WIC 5: Customer service performance return (Quarter 4 – 2004-05)	13/05/2005
13.6	WIC 1/9/14/22: Non-domestic customer revenue information (Quarter 4 – 2004-05)	13/05/2005
13.7	WIC 4: Domestic customer revenue information (Quarter 4 – 2004-05)	13/05/2005
13.8	Publication of Scottish Water's 2nd draft Business Plan	16/05/2005
13.9	WIC 25: RAB (resource accounting and budgeting) submission for April 2005	27/05/2005
13.10	WICS response to Scottish Water's 2nd draft Business Plan and its implications for customers	30/05/2005
	June 2005	
14.1	Quarterly meeting with Scottish Executive	01/06/2005
14.2	Draft Strategic Review of Charges to printers	14/06/2005
14.3	WIC XX: Annual Return 2004-05 submission	17/06/2005
14.4	WIC XX: Regulatory accounting and transfer pricing tables 2004-05 submission	17/06/2005
14.5	WIC 25: RAB (resource accounting and budgeting) submission for May 2005	28/06/2005
14.6	Publication of draft Strategic Review of Charges 2006-10	30/06/2005
	July 2005	
15.1	Half yearly meeting with Water Customer Consultation Panels (WCCPs)	01/07/2005
15.2	Stakeholder information day	04/07/2005
15.3	WIC XX Annual Return – 1st round of queries: response due from Scottish Water	15/07/2005
15.4	WIC 25: RAB (resource accounting and budgeting) submission for June 2005	28/07/2005
15.5	Close of initial consultation on licensing	29/07/2005
	August 2005	
16.1	Capital Investment Return: Quarter 1 – 2005-06 submission	01/08/2005
16.2	Stakeholder information day	05/08/2005
16.3	WIC 5: Customer service performance return (Quarter 1 – 2005-06)	12/08/2005
16.4	WIC XX Annual Return – 2nd round of queries: response due from Scottish Water	12/08/2005
16.5	WIC 25: RAB (resource accounting and budgeting) submission for July 2005	26/08/2005
16.6	Quarterly meeting with Scottish Executive	31/08/2005
16.7	Final Guidance from Ministers	31/08/2005
	September 2005	
17.1	MSP briefing	01/09/2005
17.2	Deadline for representations on draft Strategic Review of Charges	05/09/2005
17.3	Stakeholder information day	16/09/2005
17.4	WIC 25: RAB (resource accounting and budgeting) submission for August 2005	28/09/2005
	October 2005	
18.1	WIC 25: RAB (resource accounting and budgeting) submission for September 2005	28/10/2005
18.2	Start of consultation on draft licence conditions	31/10/2005
18.3	Stakeholder information day	31/10/2005
	November 2005	
19.1	Capital Investment Return: Quarter 2 – 2005-06 submission	01/11/2005
19.2	WIC 1/9/14/22: Non-domestic customer revenue information (Quarter 2 – 2005-06)	11/11/2005
19.3	WIC 4: Domestic customer revenue information (Quarter 2 – 2005-06)	11/11/2005
19.4	WIC 5: Customer service performance return (Quarter 2 – 2005-06)	11/11/2005
19.5	Final Strategic Review of Charges to printers	14/11/2005
19.6	Quarterly meeting with Scottish Executive	16/11/2005
19.7	WIC 25: RAB (resource accounting and budgeting) submission for October 2005	28/11/2005
19.8	Publication of Final Strategic Review of Charges 2006-10	30/11/2005

Reference	Event	Date
	December 2005	
20.1	Half yearly meeting with Water Customer Consultation Panels (WCCPs)	01/12/2005
20.2	WIC 19: Investment appraisal audits	14-15/12/2005
20.3	Prices to Commission from Scottish Water	16/12/2005
20.4	Stakeholder information day	16/12/2005
20.5	WIC 25: RAB (resource accounting and budgeting) submission for November 2005	28/12/2005
20.6	WIC 24: Leakage strategy	30/12/2005
	January 2006	
21.1	WIC 6: Quality Performance Assessments (written) (Quarter 3 – 2005-06) Scottish Water provides list of complaints	23/01/2006
21.2	WIC 25: RAB (resource accounting and budgeting) submission for December 2005	27/01/2006
21.3	Close of consultation on draft licence conditions	31/01/2006
	February 2006	
22.1	Capital Investment Return: Quarter 3 – 2005-06 submission	01/02/2006
22.2	WIC 6: Quality Performance Assessments (written) (Quarter 3 – 2005-06) Scottish Water provides complaints files	06/02/2006
22.3	Publication of Investment and Asset Management Report (2004-05)	09/02/2006
22.4	WIC 5: Customer service performance return (Quarter 3 – 2005-06)	10/02/2006
22.5	WIC 25: RAB (resource accounting and budgeting) submission for January 2006	28/02/2006
22.6	Stakeholder information day	28/02/2006
	March 2006	
23.1	WIC 25: RAB (resource accounting and budgeting) submission for February 2006	28/03/2006
23.2	WIC XX: Annual Return 2005-06 guidance issued	End March
23.3	WIC XX: Regulatory accounting and transfer pricing tables 2005-06 guidance issued	End March
	April 2006	
24.1	Scottish Water retail business licensed	01/04/2006
24.2	Publication of Customer Service Report (2004-05)	06/04/2006
24.3	WIC 6: Quality Performance Assessments (written) (Quarter 4 – 2005-06) Scottish Water provides list of complaints	24/04/2006
24.4	WIC 25: RAB (resource accounting and budgeting) submission for March 2006	28/04/2006
	May 2006	
25.1	Capital Investment Return: Quarter 4 – 2005-06 submission	01/05/2006
25.2	WIC 6: Quality Performance Assessments (written) (Quarter 4 – 2005-06) Scottish Water provides complaints files	08/05/2006
25.3	WIC 5: Customer service performance return (Quarter 4 – 2005-06)	12/05/2006
25.4	WIC 1/9/14/22: Non-domestic customer revenue information (Quarter 4 – 2005-06)	12/05/2006
25.5	WIC 4: Domestic customer revenue information (Quarter 4 – 2005-06)	12/05/2006
25.6	WIC 25: RAB (resource accounting and budgeting) submission for April 2006	26/05/2006

External advice

We will deliver most of the work-plan outlined in this document using in-house office resources. In certain areas, there will be a need for specialist advice from a number of companies with appropriate financial, asset management and audit expertise. This is cost-effective for our Office and ensures that the Strategic Review of Charges benefits from the fresh perspective of external experts. At this stage, we are proposing to implement three projects, covering indicators of financial sustainability, an audit of our financial model and an audit of Scottish Water's asset management processes.

In addition, we are fortunate in being able to seek advice and comment from two senior advisors: Sir Ian Byatt and Professor David Simpson. Sir Ian was the former Director General of the Office of Water Services (Ofwat). Professor Simpson was former Economic Adviser to Standard Life, and his previous post was Professor of Economics at the University of Strathclyde.

Chapter 2

The importance of regulation to customers

Before examining the complex regulatory processes that underpin our work, it is important to explain the relevance of this work to customers. An understanding of **why** we regulate helps to clarify the need for some of the complexity of **how** we regulate.

In this chapter we look at the main players in water regulation in Scotland and describe their different, but complementary, roles. We discuss the way in which charges and levels of service for customers are set, then describe the key factors that determine success within the industry, such as drinking water quality, environmental impact, meeting demand and levels of customer satisfaction.

Regulation seeks to ensure that customers enjoy a value for money service. Customers should be able to count on a supply of high-quality, wholesome drinking water, continuing improvement in our beaches and water environment; and these services should be provided at a reasonable cost. It is the job of the regulator to ensure that customers enjoy a 'silent' service, that is, one that they can take for granted.

2.1 Water industry regulation in Scotland

Regulation of the water industry in Scotland has developed significantly in recent years. This has brought major improvements in transparency and accountability for Scotland's water industry, to the benefit of all stakeholders. The principal agencies that are currently responsible for regulating Scottish Water and representing stakeholders' views are described below.

2.1.1 The Water Industry Commissioner for Scotland (WICS)

Prior to 1999, water industry customers' interests in Scotland were represented by the Scottish Water and Sewerage Customers' Council. The Council had responsibility for handling customer complaints, agreeing the Scheme of Charges of the then three Scottish water authorities², and representing customers' views.

The post of Water Industry Commissioner for Scotland was created by Part II of the 1999 Water Industry Act and the Office was established on 1 November 1999. According to this Act, the Commissioner was responsible for regulating all aspects of the economic and customer service performance of the three Scottish water authorities. The Commissioner also took over the responsibilities of the Scottish Water and Sewerage Customers' Council.

As a result of the Water Industry (Scotland) Act 2002, the three former water authorities merged on 1 April 2002 to form Scottish Water. The Commissioner remained responsible for regulating all aspects of Scottish Water's economic and customer service performance.

The primary role of the Commissioner is to promote the interests of customers of Scottish Water. He is assisted in his work by an office, the current structure of which is shown in Appendix 1. Throughout this document we refer to the regulatory role of this office but it should be emphasised that, according to statute, the duty of regulating Scottish Water currently lies with the Commissioner. His office supports him in this function.

The Commissioner's duties include:

- advising the Scottish Ministers on the amount of revenue that Scottish Water needs to provide a sustainable service to customers and to fund its investment programme;
- considering and approving Scottish Water's annual scheme of charges;
- investigating customer complaints not resolved by Scottish Water;
- advising the Scottish Ministers on Scottish Water's standards of service and customer relations;
- approving Scottish Water's Code of Practice; and
- providing advice, when requested by the Scottish Ministers, on a range of matters relating to the impact of Scottish Water on its customers.

² East of Scotland Water Authority
North of Scotland Water Authority
West of Scotland Water Authority

In the role of customer regulator the strategic aims of the Commissioner are:

- to promote the interests of Scottish Water's customers to ensure that the level of customer service is on a par with the service delivered in England and Wales;
- to be professional, objective, factual, analytical, transparent and rigorous in the approach to regulation;
- to encourage Scottish Water to become more efficient and sustainable through a clearer understanding of its costs;
- to give credit where there has been good performance and to challenge poor performance, highlighting any shortfalls in levels of service; and
- to provide all stakeholders with accurate information about Scottish Water's performance.

The Commissioner is appointed by, and accountable to, the Scottish Ministers through the Scottish Executive Environment and Rural Affairs Department.

As part of this accountability, the Commissioner must draft an annual corporate plan and submit an annual report and accounts which set out:

- the Commissioner's work-plans, performance targets and budget projections for a three-year period – this plan has to be approved by Ministers;
- the Office's activities and its progress with the forward programme set out in the previous year's corporate plan – this report is both published and laid before Parliament.

The Commissioner also considers that he is accountable to customers of Scottish Water. This accountability is achieved through a range of consultation forums and meetings, as well as through publication of information and reports on Scottish Water's performance.

2.1.2 The Water Customer Consultation Panels (WCCPs)

The Water Industry (Scotland) Act 2002 created five Water Customer Consultation Panels across Scotland to represent the views and interests of customers of Scottish Water in the areas covered by the Panels. The Panels are independent of Scottish Water and of other agencies, including the Water Industry Commissioner. These five panels replaced the three consultative committees, chaired by the Water Industry Commissioner, established by the 1999 Act.

Each Panel is required to maintain close contact with customers and representative organisations through meetings and consultations, and by publishing reports and other documents.

The Panels establish contact with customers (household and non-household), local authorities and community groups across Scotland. They also liaise with large and small businesses, commission research and undertake surveys in order to establish customers' views and concerns.

2.1.3 The Drinking Water Quality Regulator (DWQR)

The role of Drinking Water Quality Regulator for Scotland was established in the Water Industry Act 2002 to provide an independent check that Scottish Water is complying with the drinking water quality regulations. The Act provides the DWQR with extensive powers to:

- acquire information;
- conduct investigations; and
- take enforcement action should this prove necessary.

The primary purpose of the drinking water quality regulations is to protect public health. Although regulatory standards are set at precautionary levels, any breach of the standards is taken very seriously.

2.1.4 The Scottish Environment Protection Agency (SEPA)

The Scottish Environment Protection Agency was established by the Environment Act 1995 and became operational on 1 April 1996. SEPA is responsible for a range of activities including:

- Regulating discharges to rivers, lochs, estuaries and coastal waters from industry sewage works, fish farms, septic tanks etc.
- Controlling pollution from waste management activities, including licensing, storage and disposal of waste and regulating landfill sites.
- It also has broad duties for protecting and improving the water environment, including River Basin Management Planning under the Water Environment and Water Services Act.

Although each of these regulatory and representative bodies is independent, with different statutory duties, they work in a co-ordinated way to promote the interests of all stakeholders in the water industry in Scotland.

The regulatory framework in Scotland's water industry is continuing to evolve. Recent developments include the introduction of a Reporter², publication of the Annual Return³ and publication of performance reports⁴ on Scottish Water's progress. Further developments are planned, with proposals for a Regulatory Commission, possible powers of price determination for the Commission and a right of an appeal to the Commission's determination to the Competition Commission. These future changes, and their impact on the regulatory process, are discussed in more detail in Chapter 5, Section 5.10.

2.2 Setting charges

As described in Section 2.1.1 above, a key duty of the Commissioner is to advise Scottish Ministers on the amount of revenue that Scottish Water requires to fund its investment programme and to provide a sustainable

service to customers. This has a direct impact on the level of charges for all customers.

Once this overall level of income is established, the Commissioner also has a duty to consider and, where acceptable, approve Scottish Water's annual scheme of charges. This scheme of charges sets out the tariffs for all of the core services offered by Scottish Water⁵.

It is important to emphasise that setting charges is a two-stage process and that the Commissioner has clear responsibilities at each stage.

2.2.1 Establishing the revenue requirements for the industry

In November 2001, in the Strategic Review of Charges, the Commissioner provided advice to Ministers on the charges and revenue required to fund the water industry in Scotland for the period from 1 April 2002 to 31 March 2006. In his Strategic Review, the Commissioner commented that:

"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 demand placed on this, and future, generations⁶."

We maintain the view that prices should be as high but no higher than they need to be to ensure a sustainable water industry in Scotland. This will remain a fundamental principle of our assessment of the funding requirements of the industry in the forthcoming *Strategic Review of Charges 2006-10*, for the period beyond 1 April 2006. The later chapters of this document describe in detail the processes that we will undertake in ensuring that prices will be no higher than they need to be.

Our approach involves:

- collection of a comprehensive set of information;
- detailed validation of this information;

² See Chapter 5, Section 5.8.

³ See Chapter 3, Section 3.3.

⁴ See Chapter 4, Section 4.1.

⁵ Except trade effluent

⁶ Strategic Review of Charges, November 2001, Foreword.

- analysis of Scottish Water's performance;
- benchmarking of this performance with other comparable companies; and
- an assessment of the opportunities for efficiencies.

Customers will wish to be assured that, in arriving at our recommendations for the revenue requirements for the industry for the period from 2006-10, we have carried out a rigorous, transparent and auditable process. This will help ensure that charges to customers are kept to a minimum while providing Scottish Water with resources sufficient to fund its investment programme and consequently to maintain a sustainable service to customers.

2.2.2 Determining the allocation of charges to different customer groups

Each year, Scottish Water submits its proposed scheme of charges for the following financial year to the Commissioner for approval. The Commissioner will only approve tariffs if he is confident that the tariffs in total will generate the required level of revenue. Further, any proposed change in the balance of revenue from different customer groups will only be approved if it has been clearly demonstrated that the change will ensure that each group of customers will pay an appropriate share of the costs of providing a service.

In the event that Scottish Water and the Commissioner cannot agree on the appropriate level of charges then, under Section 32 3 (b) of the Water Industry (Scotland) Act 2002, the level of charges is determined by Ministers.

Our work in this area over the next two years will include the following:

- Reviewing Scottish Water's six-monthly submissions of domestic and non-domestic revenue and debt information. These submissions are responses to information requests⁷:
 - o WIC1/9/14/22
 - o WIC4

This information forms the basis of our tariff models, which allow the impact of proposed revenue settlements and charges schemes on different customer groups to be assessed.

- Reviewing Scottish Water's 2005-06 scheme of charges submission, due on 27 September 2004, and responding within the three month deadline. In particular, we will review any new tariff proposals and assess the impact on all customer groups.
- Responding to the Scottish Executive's proposed consultation on Principles of Charging, which is due to run from July to October 2004.
- Reviewing Scottish Water's 2006-07 scheme of charges submission, due in December 2005, and responding within the three month deadline. [This may change if the Scottish Executive's proposals to strengthen the regulatory regime are approved by the Parliament.]

As part of the *Strategic Review of Charges 2006-10*, we will assess the impact of the allowed revenue on customer charges and on affordability in general. In particular, we will assess the impact of charges on vulnerable groups such as low income households.

2.3 Levels of service

We are able to build up a picture of customers' concerns from the complaints that we receive and from the views that customers express in forums such as public meetings. This analysis indicates that Scottish Water's customers are concerned not only about the price they pay for water and sewerage services, but also about the quality of service they receive. Our ongoing monitoring of Scottish Water's performance therefore includes assessment of the levels of service that it provides to its customers.

It is important to be clear about what we mean when we talk about the 'level of service' to customers. The factors that we consider when assessing the level of service provided to customers include:

⁷ Please see Appendix 2 for the text of all of the WIC letters. WIC letters are primarily additional information requests by the Commissioner to supplement Scottish Water's annual regulatory return.

- incidence of low water pressure problems;
- number of planned and unplanned interruptions to supply;
- incidence of sewer flooding;
- resolution of billing problems;
- processing of written complaints; and
- handling of telephone contacts.

We gather detailed information from Scottish Water on its performance in all of these areas. In its Annual Return (see Chapter 3, Section 3.3), Scottish Water provides information on both asset performance measures (such as supply interruptions and sewer flooding) and customer service measures (such as complaints and telephone contacts).

We also receive quarterly updates, through responses to our 'WIC 5' information request⁸. This update contains information on Scottish Water's performance in a range of key areas of customer service. Such ongoing monitoring can alert us to any significant changes in performance in the course of a year. It also provides us with a comprehensive current and historical picture of performance. We can use this information to identify trends and seasonal variations.

We publish analysis of our customer monitoring activity in Customer Service Reports. We use a modelling technique to assess Scottish Water's overall performance and to produce an overall indication of the quality of service.

We conduct audits of Scottish Water's written complaint handling (WIC 6)⁹ and we also plan to review the performance of its call centre in dealing with telephone complaints. Customers have increasingly drawn our attention to the performance of Scottish Water's call centre in handling customer complaints and enquiries. In the forthcoming year, we will review the scripts used by call centre staff and the procedures by which these are

adapted for changing circumstances and one-off events.

We will also consider the introduction of a code of practice for debt and disconnection. The establishment of such a code would bring Scottish Water into line with the water companies in England and Wales, and would address customers' concerns in this area. We will liaise with the WCCPs, the Scottish Executive and Scottish Water on how best to take this forward. We would consult with stakeholders before implementing such a code.

We have a responsibility to provide customers with written information about the development of the Scottish water industry and the role of regulation within it. In addition to the information in our Customer Service Reports, we plan to provide a series of 'Information Notes' covering issues such as the development of competition, guaranteed minimum standards and customer service regulation. When available, these will be published on our website (at <http://www.watercommissioner.co.uk>).

Our key activities in this area over the next two years will include the following:

- Review Scottish Water's 'WIC 5' quarterly submissions of customer service performance. These returns are due in February, May, August and November of each year.
- Analyse the customer service performance data in the Annual Return for each year.
- Compare this with the published customer service information for the companies in England and Wales, which is available in October.
- Build this analysis into our work for the *Strategic Review of Charges 2006-10*.
- Publish a Customer Service Report in Spring 2006, summarising Scottish Water's performance relative to performance in England and Wales and looking at trends where possible.

⁸ For the text of our WIC 5 letter, please see Appendix 2.

⁹ For the text of our WIC 6 letter, please see Appendix 2.

2.4 Improving drinking water quality and protecting the environment

The role of ensuring that Scottish Water is complying with current drinking water quality regulations is carried out by the DWQR. The DWQR publishes regular updates and information bulletins on drinking water quality in Scotland.

Ensuring that Scottish Water is complying with environmental legislation is the responsibility of SEPA. SEPA carries out a wide range of monitoring and enforcement activity that includes discharge sampling and bringing prosecutions where statutory standards are not being met. SEPA also publishes a wide range of documentation and guidance to promote protection of the environment.

Much of the requirement in recent years for investment in improving drinking water quality and environmental protection is driven by EU legislation. Through the Quality and Standards process¹⁰, Ministers identify the drinking water quality and environmental standards that need to be achieved in each investment period. In the Strategic Review of Charges, the Water Industry Commissioner advises Ministers on the cost of the investment required to meet these standards and the impact of that investment on prices to customers. Once funding levels are set, the role of the Commissioner is to monitor progress in delivering the investment and in achieving the associated improvements.

Our activities in this area over the next two years will include the following:

- Monitoring (through analysis of Scottish Water's Annual Return) the delivery of the drinking water quality and environmental improvements funded in the current Quality and Standards II period, which runs to April 2006.
- Reporting in our Investment and Asset Management Report on progress with investment delivery and on the improvements in the water quality and environmental outputs which are defined in Quality

and Standards. These include the Drinking Water Quality 1000 index¹⁰ and the percentage of the population receiving secondary sewage treatment.

- Contributing to the development of the Quality and Standards III investment programme for the period beyond April 2006, which will include a definition of the drinking water quality and environmental improvements to be met.
- Working with the DWQR and SEPA to ensure that Scottish Water carries out the expected work programmes and that customers are receiving the improvements for which they have paid.

2.5 Supply and demand

Customers expect to turn a tap on and receive an instant supply of water. Matching water supply needs to water resources is therefore an important element of Scottish Water's wide-ranging duties.

Customers will wish to be assured that Scottish Water has a clear understanding of supply and demand issues in Scotland and is pursuing a well thought-out strategy in this area. Through its Annual Return we monitor Scottish Water's performance in meeting demand for water services.

As part of the *Strategic Review 2006-10*, we will seek to establish that Scottish Water has a clear strategy in place for managing water resources in the long term. Good management of water resources needs to take account of factors such as:

- future supply availability – this can require sophisticated modelling techniques which include factors such as demand changes, rainfall patterns and risk of drought;
- the impact of new legislation, such as the Water Framework Directive, which places new limits on water extraction;

¹⁰ See Section 5.3, 'The Quality and Standards process'.

¹¹ The Drinking Water Quality 1000 index covers regulatory compliance at customers' taps with 10 key drinking water parameters.

- leakage control – this can provide a significant contribution to reducing water supply needs and is often more cost effective than developing new resources;
- demand management – options range from straightforward pressure reduction to short-term emergency measures such as hose-pipe bans; and
- the efficient use of water – a range of measures can be employed, from encouraging households to reduce consumption to working pro-actively with businesses to avoid waste.
- having a thorough understanding of the condition and performance of the asset base;
- employing a comprehensive system for recognising investment needs;
- using a systematic approach to determining investment priorities (eg a risk-based approach);
- adopting a rigorous project appraisal process;
- having an efficient and effective procurement process;

2.6 Asset issues

In its 2003 Annual Return, Scottish Water estimated that its asset base had a replacement cost of over £32 billion. Investment in these assets currently runs at around £400 million per annum. Proper management of these assets, and proper targeting of the high levels of investment, are vital to the success of Scottish Water and to ensuring that customers receive value for money and much needed improvements in service.

Investment in water and waste water assets is necessary to:

- maintain the level of service to customers – the assets of any business need to be replaced at the end of their useful lives if business is to continue;
 - improve the quality of service to customers and the public – investment in assets is necessary to meet higher environmental and quality standards;
 - respond to customers changing demand patterns – the assets capacity may need to be increased in order to meet both the demands of new customers and growth in usage from existing customers.
 - building in the benefits of innovation at every stage of the process.
- To ensure that Scottish Water is achieving these objectives, we monitor its asset management performance in a number of ways:
- We obtain information on the condition and performance of the assets from Scottish Water's Annual Return. This provides a picture of the condition of the asset base; it also allows us to determine whether investment levels are sufficient to maintain customer service.
 - We obtain comprehensive information from the Annual Return about the investment programme. This allows us to compare investment levels and outcomes with previous years and with other water and waste water companies.
 - In our *Investment and Asset Management Reports* we provide information on historic investment levels, Scottish Water's investment performance and the current state of the asset base. In particular, we track the delivery of the Quality and Standards II investment programme.
 - We carry out regular audits of Scottish Water's investment appraisal processes and compare year-on-year performance, as well as providing a comparison against best practice.

Customers will wish to be assured that Scottish Water is adopting an efficient, effective and sustainable approach to managing its assets. This includes:

- As part of the Strategic Review of Charges, we will carry out a review of Scottish Water's asset management processes. The findings from the assessment will help inform the scope for capital efficiency in Scottish Water's investment proposals.

2.7 Leakage

The nature of water supply networks is such that some level of leakage is inevitable. However, if not properly managed, this leakage has potentially significant impacts on the requirement for water resources and on the environment in general, as well as on the cost of running the water system. Good practice management of leakage levels therefore brings significant benefits for customers and the environment.

The concept of an 'economic level of leakage' is widely used as a measure of whether or not the level of leakage control is optimal. It represents the point at which it is no longer cost effective to carry out additional leakage control measures, as the cost of the measures is greater than the benefits obtained. Clearly, this will depend on the financial benefits ascribed to the saved water in terms of both the direct costs associated with collection, treatment and transportation and the indirect environmental costs.

In England and Wales, difficulties with water supply availability have led to a focus on leakage control measures and the setting of company leakage targets. In Scotland, there has traditionally been less of an issue with water availability, although there are signs (such as the use of 'drought orders' by Scottish Water) that supply security is becoming a potential issue in some areas of Scotland. There are concerns that leakage rates in Scotland are currently above the economic level.

A particular issue in Scotland has been the lack of reliable information in this area. This is due to the relatively limited coverage (compared with England and Wales) of network metering and water usage modelling. Scottish Water is currently working to increase metering coverage and to extend the modelling of its water supply network.

In developing the investment programme for *Quality and Standards III*, it has become clear that leakage management could be a cost-effective method of meeting some of the environmental and water management requirements of European legislation. It may also have the potential to provide low-cost solutions to tackling water resource issues.

Scottish Water has a duty to ensure that its resources are used economically, efficiently and effectively. We will continue to encourage Scottish Water to take a proactive and targeted approach to leakage management. As knowledge of the water supply network increases, there are greater opportunities for environmental and customer benefits to be gained from having in place a proper strategy on leakage management.

Over the next two years we will:

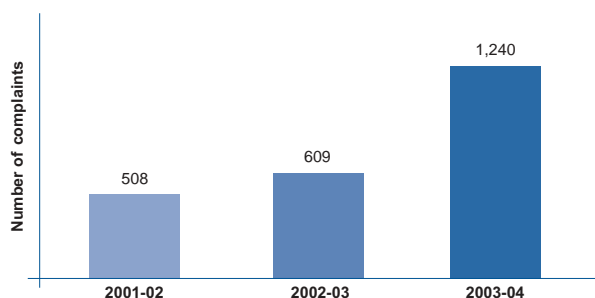
- Require Scottish Water, through the WIC 24 Return, to provide us with an update of its leakage strategy. We analyse the information provided within this return and follow up areas of concern. In particular, we will seek to ensure that Scottish Water is adopting a proactive, targeted and cost-effective approach to leakage management.
- Promote the extension of Scottish Water's network metering and modelling coverage.
- As part of the analysis of the investment plan within the Strategic Review, we will determine the extent to which full use has been made of cost-effective leakage management in determining investment needs.

2.8 Customer complaints

Customers who receive poor service or are unhappy about any aspect of the service provided to them should complain. The Commissioner has a statutory duty to investigate any complaints that have not been satisfactorily resolved by Scottish Water's own complaints procedure.

There has been a significant increase in the number of complaints received by our Office in recent years.

Figure 2: Number of complaints received



Many of these complaints have been about the level of charges, but there has also been an increase in the number of complaints about the levels of service provided to customers.

All of the complaints that we receive are recorded, investigated and analysed. In some cases, customers' complaints can be dealt with by providing information and explanation. In other cases, it is necessary to conduct an investigation into the complaint and to provide Scottish Water with a recommended course of action.

From our analysis of complaints we also identify issues that are causing particular problems for customers. We raise these generic issues with Scottish Water and seek resolutions that are in the customer interest. As a recent example, when Scottish Water reduced the number of payment options available to customers, we received complaints from customers that the payment frequency options had become too restrictive. We took the issue up with Scottish Water and it subsequently re-introduced quarterly and monthly payments.

Scottish Water's Customer Service Standards specify levels of service requirements in the areas of:

- keeping appointments;
- notification of planned interruptions to supply;

- restoration times for unplanned interruptions to supply;
- response to water ingress to gas mains;
- sewer flooding response;
- complaint response times;
- target times for meter applications;
- compensation payments for pressure problems;
- major incident responses; and
- failure to make payments under the Guaranteed Minimum Standards of Service.

We monitor Scottish Water's overall performance against these Customer Service Standards and respond to specific customer complaints regarding non-compliance.

In the period to 1 April 2006, our planned activity in the area of customer complaints is as follows:

- To continue to provide a complaints monitoring service for customers. Where customers consider that they are not receiving a satisfactory response from Scottish Water to their complaint, we will pursue the matter with Scottish Water.
- Through analysis of the complaints received, we will continue to build up a picture of the key issues for customers. This will help inform the further development of Scottish Water's Customer Service Standards and will also provide information about how best to target investment to meet customers' needs.
- To continue to publish information on Scottish Water's performance in handling complaints. In particular, we will assess whether improvements are being made compared with performance in previous years.

Chapter 3

The regulatory process

In the previous chapter we described the importance to customers of regulation. In this chapter we describe the objectives of regulation and how we gather information to support our work. We look at the key regulatory submissions that we receive from Scottish Water and explain their function.

3.1 Objectives of the regulatory process

Scottish Water is a monopoly business, albeit a monopoly business operating in the public sector. Regulation therefore plays an important role in protecting customers' interests and promoting efficiency within the business. In this respect, regulation of Scottish Water is acting on behalf of customers as a proxy for competition.

Effective regulation requires a process that is robust, transparent and auditable. Through this framework, we can regulate Scottish Water in a way that protects customers' interests and allows us to provide sound advice to Ministers.

The process involves gathering and analysing a wide range of financial, asset and customer information from Scottish Water. By analysing this information we can comment objectively on Scottish Water's performance and can make comparisons with other water and waste water companies. This process lies at the heart of how we regulate.

Our objective in using comparative analysis is to promote continued improvements in customer service standards, environmental and public health compliance and financial performance. Experience from other utilities and from the water industry south of the border has shown that this can bring significant benefits to customers and the environment through lower costs, improved environmental and water quality standards and better customer service.

In the following sections we discuss the key elements of our regulatory process. Many of the elements are similar to those employed by other regulators, including the Office of Water Services (Ofwat), which regulates the

water and waste water companies in England and Wales.

3.2 Regulatory letters ('WIC' letters)

From time to time we issue regulatory letters to Scottish Water. These are similar to the Managing Director (MD) and Regulatory Director (RD) letters that Ofwat sends to the companies in England and Wales. The WIC letters often request information relating to various aspects of Scottish Water's activities that would not otherwise be collected as part of the regulatory regime. These information requests are vital to the analysis performed by our Office.

Each letter is given a unique code and title for ease of reference and may be reissued when a request for information needs to be repeated. Where appropriate (for example with Capital Investment Returns), the recently appointed Reporter is asked to scrutinise the responses to WIC letters from Scottish Water. Copies of WIC letters issued are also sent to the Scottish Executive and are published on our website.

A list of WIC letters issued to date is presented in Table 1.

Table 1: Summary of WIC letters

Reference	Title	Date of first issue
WIC 1	Commercially sensitive customer revenue information and data request	27 April 2000
WIC 2	Planned investment programme	2 May 2000
WIC 3	Review of infrastructure renewal and maintenance	22 May 2000
WIC 4	Household data request	8 August 2000
WIC 5	Customer service performance reports	21 June 2000
WIC 6	Quality performance assessments	22 August 2000
WIC 7	Scheme of charges 2001-02	6 October 2000
WIC 8	Dates for submission of information project data	10 November 2000
WIC 9	Non-domestic debt data request	20 December 2000
WIC 10	Information project action plan	28 February 2001
WIC 11	Not used	-
WIC 12	New opex and 'spend to save'	7 March 2001
WIC 13	Efficiency analysis: impact of PPP schemes	7 May 2001
WIC 14	Special agreements for large customers	18 May 2001
WIC 15	Capital investment and efficiencies	18 May 2001
WIC 16	Development constraints and rural sewage connections	28 May 2001
WIC 17	Data accuracy	29 May 2001
WIC 18	Quality and Standards final output	30 May 2001
WIC 19	Investment appraisal project	1 June 2001
WIC 20	Request for data relating to depots, laboratories and office buildings	6 June 2001
WIC 21	Critical information for the Strategic Review of Charges	29 June 2001
WIC 22	Customer revenue information and data request	19 October 2001
WIC 23	Capex monitoring	21 November 2001
WIC 24	Leakage	21 December 2001
WIC 25	Monthly submission of RAB tables	11 January 2002
WIC 26	Revised action plans	15 January 2002
WIC 27	Dates for submission of information to the WIC	8 February 2002
WIC 28	Procedure for information returns	2 April 2002
WIC 29	WIC Annual Return	12 April 2002
WIC 30	Accounting separation	4 October 2002
WIC 31	Dates for submission of information to the WIC 2003-04	17 March 2003
WIC 32	Quality and Standards I	11 February 2003
WIC 33	Annual Return 2003-04	11 April 2003
WIC 34	T tables 2003-04 to 2005-06	1 April 2003
WIC 35	Scheme of charges 2004-05	Not issued
WIC 36	Regulatory dialogue and progress monitoring	28 August 2003
WIC 37	Data for serviceability models	30 September 2003
WIC 38	Publication of Annual Return and investment programme information	22 October 2003
WIC 39	Ongoing development of Quality and Standards II capital investment programme	22 October 2003
WIC 40	Strategic Review of Charges 2005	12 December 2003
WIC 41	Reconciliation of WIC 18 with Finance Committee submission	2 March 2004
WIC 42	Dates for submission of information to the WIC 2004-05	8 April 2004
WIC 43	Annual Return 2003-04	23 April 2004
WIC 44	Finalisation of the WIC18 baseline for Quality and Standards II	12 May 2004
WIC 45	Draft accounting separation tables	27 May 2004

More detail about the information requested in the WIC letters is provided in Chapter 7. A full listing of the letters is also provided in Appendix 2.

We will continue to issue WIC letters when we require further information from Scottish Water.

3.3 Annual Return

The WIC Annual Return is the largest single information request that we issue to Scottish Water each year. The format of the Annual Return is based closely on Ofwat's June Return; the information it collects is also similar, allowing us to benchmark Scottish Water with the companies in England and Wales. To ensure that the Return is wholly applicable to Scotland, and that it covers circumstances, which are specific to Scotland (such as PPP¹² costs), we extended the scope of the original Ofwat return in some areas.

The Return is a robust and detailed set of information about each area of the water and waste water business and all associated costs. It consists of 12 separate sections and comprises 97 tables, with over 20,000 items of both input and calculated information. The Return focuses in the main on information relating to the previous financial year; however, in some cases it also seeks forward projections. Each line of information requested has a precise and documented definition.

We now publish the Annual Return on our website. A limited amount of information, which is deemed commercially confidential, is removed prior to publication.

The following summarises the information contained in each section of the Return.

Section A

This section records base information about population and properties connected to the water and waste water system. It also records the amount of water delivered and the volume of sewage treated.

Section B

This section details outputs to customers. In particular, it covers information on the availability of water to customers, supply interruptions, sewage flooding incidents, customer complaints and enquiries, and Scottish Water's performance in relation to its guaranteed minimum standards (GMS) scheme.

Section C

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

Section D

This section records information about commissioned assets for water, waste water and support services. The tables provide a summary of assets commissioned each year. We collect information about the outputs of all types of investment, including both replacement and enhancement.

Section E

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

Section F

This section focuses on the Statutory Accounts, including the income and expenditure account, balance sheet and cash flow statement.

Section G

This section summarises investment plans for water, waste water and support services. It requires Scottish Water to present its capital expenditure programme, at a project level, showing the actual expenditure for the year and updated forecasts for future years. Such information allows comparisons with the planned expenditure defined in the Investment Plan for the period of the Strategic Review.

Section H

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

¹² Public Private Partnership

Section J

This section is concerned with cost base information. The cost base is a key information submission that is to be developed by Scottish Water in support of its investment projections. The cost base submission consists of a set of capital unit cost estimates, termed 'standard costs', for standardised projects. These standard costs relate to work that has been, or is likely to be, undertaken by Scottish Water as part of its future investment programmes. In effect, Scottish Water is asked to price a number of clearly specified investment projects under defined conditions. These standard costs allow us to assess the scope for improved efficiency in procurement. The consistency of these estimates for the standard projects and the pricing of the actual investment programme is then rigorously tested. Analysis of this cost-base allows us to assess the scope for efficiency in Scottish Water's procurement of capital projects.

Section K

This section also reports on Scottish Water's investment plans. It is the output from the Strategic Business Plan and the Quality and Standards process. 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 this Office.

We hold Annual Returns from 1999-2000 onwards for the three former authorities. For 2001-02, Annual Returns were submitted by each of these authorities, followed by a consolidated Annual Return representing collated information for the newly formed Scottish Water. Since 2002-03, Scottish Water has assumed responsibility for submitting a single Annual Return.

3.4 Monthly financial performance reports (RAB Returns)

These financial reports, referred to as RAB Returns, are submitted to this Office on a monthly basis. They provide a detailed breakdown of Scottish Water's financial performance over the preceding month and chart progress against annual budgets. This allows monthly

monitoring of progress against the financial targets set out in the Strategic Review of Charges.

The format of the monthly RAB Return is defined in the 'WIC 25' letter that was sent to Scottish Water in January 2002. The key elements of the Return are:

At the start of each year:

- budget forecasts.

On a quarterly basis:

- analysis of above-ground fixed asset cost and depreciation,
- analysis of infrastructure asset cost and depreciation,
- analysis of total assets,
- cost of capital,
- analysis of exceptional items and asset disposals.

On a monthly basis, information for the previous month (actual and budget):

- income and expenditure,
- balance sheet,
- changes in working capital,
- cash flow,
- reconciliation of operating surplus to net cash flow,
- summary analysis of fixed assets,
- income analysis – water,
- income analysis – waste water,
- analysis of operating costs,
- audit trail of revisions to forecasts.

The RAB Returns form an important component of our ongoing monitoring of Scottish Water's performance. They provide a good indication of trends in performance and rate of progress towards targets. They also supplement the information provided in the Annual Return. The accompanying commentary provides explanations for variances against annual targets and allows areas of concern to be quickly identified.

3.5 Capital Investment Returns

An important part of the regulatory process is the monitoring of the delivery of the capital investment programme. For the current regulatory period, which runs from 1 April 2002 to 31 March 2006, Scottish Water is tasked with delivering £1.8 billion of investment. It is vital that customers are aware of how effectively, and how efficiently, Scottish Water is spending this money.

Each year, in the Annual Return, Scottish Water submits detailed information about the investment carried out in the previous financial year and provides an investment plan for future years. Both of these are contained in Section G of the Annual Return.

To supplement this annual information, and to provide closer monitoring of investment delivery, we have also requested (in regulatory letter WIC 2) a Capital Investment Return (CIR) on a quarterly basis. The CIR provides summary information, at a project level, on financial and physical delivery of the investment programme. For each project in the investment programme, the information provided in the CIR includes:

- forecast and actual project spend,
- explanations of financial variances,
- total forecast spend on the project,
- investment programme budget for the project,
- physical progress of the project against defined milestones.

Through a combination of the quarterly CIRs and the investment tables in the Annual Return, we can track delivery of the investment programme and monitor the effectiveness and efficiency of Scottish Water in delivering the required investment. The CIR can also highlight material changes from the planned investment programme. These may be positive (efficiencies or early delivery of a project) or negative (cost overruns or project delays.) Using information from the CIRs, our *Investment and Asset Management Report 2002-03* was able to provide stakeholders with a detailed picture of progress in delivering the *Quality and Standards II* investment programme.

The CIR has now been brought under the auditing regime of the Reporter. We are currently working with the Reporter to improve the format and guidance for completion of the CIR.

Chapter 4

Monitoring performance

It is clearly essential for customers that the regulatory process described in the previous chapter results in effective monitoring of Scottish Water's performance. In this chapter we describe how we analyse and report on Scottish Water's performance. In particular, we monitor whether Scottish Water is meeting the targets for operating costs and investment levels that we set out in our *Strategic Review of Charges 2002-06*.

4.1 Performance reports

In the *Strategic Review of Charges 2002-06*, we recommended to Scottish Ministers that our Office should publish three annual reports on progress in the Scottish Water industry. These were:

- a costs and performance report;
- a report on the investment and asset management of the industry; and
- a report on the level of service provided to customers.

The *Costs and Performance Report*¹³ compares the value for money provided by the water industry in Scotland with that delivered in England and Wales. The report also examines the rate of improvement in value for money provided to customers.

The *Investment and Asset Management Report*¹⁴ compares levels of investment in Scotland with those in England and Wales. It also seeks to benchmark the condition and performance of assets in Scotland against those south of the border.

The *Customer Service Report*¹⁵ examines the levels of service provided to customers in Scotland. It provides detailed information about how Scottish Water performs for key measures of customer service and compares this performance with that of the companies south of the border. These measures cover aspects of service

relating to both the reliability of the service and how well Scottish Water deals with enquiries and complaints from customers.

We have published these reports on a regular basis, providing information to stakeholders on the performance of Scottish Water in each of these key areas. In the period leading up to the next Strategic Review, given the requirement to focus our limited resources on the Strategic Review of Charges, we plan to delay publication of further reports until after we have published the final Strategic Review in November 2005.

4.2 Investment appraisal audits

An essential part of good asset management is to appraise investment options carefully. During the current regulatory period, Scottish Water is tasked with delivering around £450 million per annum of investment¹⁶. Customers will want to be assured that this investment is being made wisely and that proper investment appraisal processes are in place.

In the last Strategic Review of Charges, we raised concerns about the level of scrutiny and challenge given by the former authorities to projects as they passed through the project appraisal process. We therefore decided to carry out regular investment appraisal audits of the authorities to highlight areas of strength and areas that were falling short of best practice.

These audits form an important part of assessing the effectiveness of investment decision making by Scottish Water. In particular, they assess Scottish Water's relative position compared with previous audits and in relation to industry best practice. The projects audited are selected at random (a mix of large, small, in progress and completed). The assessment involves a review of the relevant project documentation and structured interviews with project staff.

¹³ *Costs and Performance Report 2001-02*, Water Industry Commissioner for Scotland, February 2003, *Costs and Performance Report 2002-03*, Water Industry Commissioner for Scotland, November 2003.

¹⁴ *Investment and Asset Management Report 2000-02*, Water Industry Commissioner for Scotland, March 2003, *Investment and Asset Management Report 2002-03*, Water Industry Commissioner for Scotland, April 2004.

¹⁵ *Customer Service Report 2001-02*, Water Industry Commissioner for Scotland, October 2003.

¹⁶ Investment delivery is currently running at around £400 million per year.

We propose to carry out a third investment appraisal audit in December 2004. This will form a key input to the assessment of Scottish Water's asset management performance and the scope for capital efficiencies.

4.3 Customer service audits

The only contact many customers have with Scottish Water is when they are making a complaint or querying an aspect of service. The way in which Scottish Water handles a complaint can have a big impact on how the company is perceived by its customers. If the contact is handled well this can have a positive impact and will help to restore the customer's confidence in Scottish Water's level of service. If handled poorly, it will compound any negative perceptions.

We carry out quarterly quality performance assessments, termed WIC 6, to monitor how well Scottish Water handles customer complaints. Each quarter, we make a random selection of 100 complaints received by Scottish Water. Each complaint response is reviewed and scored on aspects such as its clarity, completeness, tone and appropriateness. We raise any areas of concern with Scottish Water.

Most customers contact Scottish Water by telephone and we would expect them to receive a helpful and professional service. In the coming year, we will review the standard scripts that call center staff use, to determine whether or not they are appropriate. We will also examine procedures such as how easy it is for customers to discuss their complaint with senior staff (such as supervisors).

4.4 Benchmarking

The principal method used to establish the scope for efficiency in the current review period (1 April 2002 to 31 March 2006) is to compare the levels of service delivered and the costs incurred by the water industry in Scotland with those of the industry in England and Wales.

An efficiency can only be claimed when the costs incurred in delivering a defined level of service to customers are reduced or when there is an improvement in the level of service to customers with no additional costs incurred.

In England and Wales, Ofwat publishes an annual report on efficiency and unit costs. Exposing the relative performance of the regional companies in England and Wales to direct and objective comparison demonstrates to customers, managers and owners the degree of improvement required to achieve leading status. This has introduced a powerful dynamic, as the companies have tried to outperform one another.

It is hoped that clear, objective and public comparison of performance in Scotland with that in England and Wales will provide a significant incentive for Scottish Water to improve, with considerable potential benefits to customers. The targets set for the current Strategic Review period using these methodologies have already led to significant and measurable improvements in performance by Scottish Water.

To assess the relative efficiency of Scottish Water we use both straightforward unit cost comparisons and more complex benchmarking techniques.

The unit cost comparisons include parameters such as:

- operating costs per head of population;
- operating costs per billed property;
- operating costs per connected property;
- water service operating costs per kilometre of water main;
- sewerage service costs per kilometre of sewer;
- employment costs per head of population;
- employment costs per billed property; and
- employment costs per connected property.

In essence, these comparisons establish whether there is likely to be a gap in the relative efficiency between Scottish Water and other water and sewerage undertakers in Great Britain.

The benchmarking techniques employed in the *Strategic Review of Charges 2002-06*, published in 2001, were as follows:

Operating cost	Econometric models developed by Ofwat Specially developed WICS model
Capital cost	Ofwat's cost base approach

We have adopted and updated Ofwat's econometric models to benchmark Scottish Water's operating efficiency against the companies in England and Wales. This consistency in method allows trends to be compared over the medium to long term.

We also took into account the Competition Commission's view that alternative methods may have a place. We therefore developed a detailed alternative model to provide a second analytically robust result. These methods give very similar results, and this underpins our judgement that the analysis of relative efficiency is both accurate and robust.

We will continue to benchmark Scottish Water's performance but will seek to refine our benchmarking tools as appropriate. In the forthcoming consultation on our methodology for the *Strategic Review of Charges 2006-10*, we will discuss in detail the planned development of our benchmarking techniques for this Strategic Review.

Chapter 5 The process for the Strategic Review of Charges 2006-10

In the previous two chapters we described the overall process by which we regulate Scottish Water. In this chapter we look at the activities associated with the forthcoming *Strategic Review of Charges 2006-10*.

We discuss the background to the Strategic Review of Charges process, including the Guidance provided by Ministers. We describe the Quality and Standards process, which determines the objectives of the investment programme over the regulatory period. We also describe the principal components of the Strategic Review process, such as Scottish Water's Business Plan submissions and the input to the process from stakeholders through consultation. We also discuss the mechanics of the process, such as the development of a financial model, and the contributions provided by external experts such as the regulatory Reporter. Lastly, we introduce some of the future developments in regulation, which may impact on the Strategic Review.

5.1 Strategic Review of Charges 2006-10

Under the Water Industry Acts (1999 and 2002), the Scottish Ministers seek advice from our Office regarding the level of funding Scottish Water requires to maintain its business in the short and long term and the charges that customers should pay. This is the Strategic Review of Charges.

Our first full Strategic Review of Charges¹⁷ was completed in 2001 and covered the regulatory period from 1 April 2002 to 31 March 2006. The next Strategic Review of Charges will cover the period from 1 April 2006 to 31 March 2010. The Commissioning letter for this Strategic Review of Charges is attached as Appendix 3.

The Review will establish, through a series of benchmarking and assessment techniques, a baseline of performance against which Scottish Water will be judged during the regulatory period. As in the Strategic Review of Charges 2002-06, we will establish the opportunities for efficiencies that are available with regard to both operating costs and the delivery of the capital investment programme. We will also assess the

rate at which these efficiency improvements can be made and the impact on prices. We will shortly be consulting on the detailed methodology that we will adopt in carrying out the *Strategic Review of Charges 2006-10*.

In order to ensure that this advice is robust, we collect a wide range of financial, investment performance and customer service information from Scottish Water. This information is compared with the regulatory returns provided to Ofwat by the companies in England and Wales. We also review other information from the utilities sector and take into account representations that we receive from industry stakeholders. Chapter 7 discusses the information we use for regulation in more detail.

This Strategic Review of Charges will focus only on the core activities of Scottish Water in providing water and sewerage services to customers in Scotland. This change reflects the requirements of the Water Industry (Scotland) etc Act 2002, which restricts our role to promoting the interests of customers of the core business. As part of this 'ring fencing', we have begun to establish regulatory accounts, which will ensure that customers of the core business are only paying for services associated with core activities. This work will be completed during the current financial year.

The proposed changes to the competition framework contained in the Water Services (etc) Scotland Bill will also require a further level of accounting separation. This framework will require there to be a clear split between the retail (customer service and billing) costs and the wholesale (network management and operation of treatment plants) costs.

The timetable of events provided in Chapter 6 of this document highlights all of the important dates in the Strategic Review process. It sets out the dates by which information is required from Scottish Water, the opportunities for involvement from stakeholders, and the dates by which the various areas of work that underpin the Strategic Review will be completed. Importantly, it will give all stakeholders an insight into the volume and detail of work that lies behind the advice we provide to Ministers.

¹⁷ *Strategic Review of Charges 2002-06*, Water Industry Commissioner for Scotland, November 2001.

In line with this work-plan, work on the Strategic Review is now well underway. In addition to publishing this document, we will continue our programme of workshops for stakeholders on the proposed methodology. These will help inform our thinking about the methodology.

The five documents that describe the process, framework and areas of analysis for the next Strategic Review of Charges are due for publication between July and September 2004.

Following this process to confirm the detail of our approach, we will begin to complete all of the analyses required to decide on appropriate price caps. The principal inputs to the process will be:

- **Ministerial Guidance:** High-level Guidance from the Scottish Ministers is provided at the start of the Strategic Review process. This covers the factors that the Commissioner should take into account in formulating his advice. Detailed Guidance is due to be given by Ministers at the end of January 2005. This will help inform the draft Strategic Review of Charges in June 2005. Final Guidance is provided at the end of August 2005 to help inform the final Strategic Review of Charges, which is due to be published at the end of November 2005 (see also Section 5.2 below).
- **Quality and Standards III:** The Scottish Executive has coordinated a multi-stakeholder process to determine the objectives of the investment programme for the period 2006-14. Following consultation, we expect Ministers to decide on investment priorities for the next regulatory period in January 2005 (see also Section 5.3 below).
- **Principles of Charging consultation:** This important Scottish Executive consultation will establish how customers should pay for water services. (see also Section 5.4 below).
- **Scottish Water's Business Plans:** The 1st draft Business Plan, which contains Scottish Water's

initial assessment of its strategy from 2006-10, is due for submission in October 2004. The 2nd draft Business Plan, which is expected to contain a revised assessment of Scottish Water's strategy from 2006-10 (taking into account the Ministerial Guidance), is due for submission in April 2005. This 2nd draft Business Plan will constitute Scottish Water's principal submission for the Strategic Review. A final Business Plan, which reflects the outcome of the final Strategic Review of Charges in November 2005, will be expected early in 2006 (see also Section 5.5 below).

- **Information from our ongoing monitoring of performance:** Our monitoring processes have been described in detail in Chapter 4. A principal source of information for the Strategic Review are the June 2004 and 2005 Annual Returns.

The initial output from the Strategic Review process, the draft Strategic Review of Charges, will be published at the end of June 2005. This document outlines our initial proposals for Scottish Water's price limits for the period.

Following the publication of the draft Strategic Review of Charges, there is a two month period in which customers and stakeholders have the opportunity to make representations on the initial proposals. During this period, advice from Ministers to inform the final Strategic Review of Charges is expected.

The final Strategic Review of Charges will be published on 30 November 2005. This will contain our detailed advice to Ministers on the revenue requirements and charging levels for Scottish Water for the period 2006-10. It will explain in detail the processes we have gone through in establishing the revenue cap.

Under current arrangements, the Scottish Ministers are then responsible for taking due account of this advice in deciding the level of funding and the associated charges for Scottish Water. The Ministers' response to our advice is placed in the public domain. The proposals contained in the Water Services etc (Scotland) Bill, (which are discussed in more detail in Section 5.10 below), would

empower the Water Industry Commission to decide on price limits for Scottish Water, subject to appeal to the UK Competition Commission.

5.2 Ministerial Guidance

Input from the Scottish Ministers forms an essential part of the Strategic Review Process. There are three elements to the Guidance:

- initial high-level Guidance provided in the Commissioning letter for the *Strategic Review of Charges 2006-10*;
- detailed Guidance provided at the end of January 2005; and
- final Guidance provided at the end of August 2005, after the draft Strategic Review of Charges.

The initial Guidance, which was provided in May 2004, outlines the factors that the Commissioner should take into account in formulating his advice. It covers the broad arrangements that the Scottish Executive wishes to be followed in the Strategic Review, and provides the Scottish Executive's initial views on the public policy considerations that it requires to be taken into account. It deals with issues such as the period of the Strategic Review, public expenditure constraints and allowable financial parameters.

It also discusses the impact on the Strategic Review of proposals announced by the Scottish Executive on 23 April 2004 in the forthcoming Water Services etc (Scotland) Bill (see Section 5.10 below).

The detailed Guidance from Ministers at the end of January 2005 is expected to outline:

- the objectives and standards that the Scottish Executive requires Scottish Water to achieve during the Strategic Review period;
- the Scottish Executive's assumptions about public expenditure and Scottish Water's borrowing limits

in the period; and

- the principles that the Scottish Executive will require the Commission to apply in setting charge limits at the conclusion of the Strategic Review.

The final Guidance from Ministers is due to be provided at the end of August 2005. This will take account of the proposals set out in the draft *Strategic Review of Charges 2006-10*.

5.3 The Quality and Standards process

The water industry plays a vital role in protecting the environment and safeguarding public health. The purpose of the Quality and Standards process is to establish the standards that Scottish Water must meet in these areas, thereby providing a basis for the Commissioner to assess the industry's revenue requirements.

The *Quality and Standards I* period covered the financial years 2000-01 and 2001-02, relating to the final two years of operation of the three former water authorities: East of Scotland Water Authority, North of Scotland Water Authority and West of Scotland Water Authority. The *Quality and Standards I* process originally envisaged total investment of £740 million over the two years, which was later revised to a forecast of £890 million. The delivery of this investment programme is discussed in our *Investment and Asset Management Report 2000-02*, which was published in March 2003.

The Scottish Executive's second *Water Quality and Standards* document¹⁸ was published in August 2001. It defined the planned investment in the water industry in Scotland for the Quality and Standards II period, from April 2002 to March 2006. It also defines high-level objectives for the investment programme, such as targets for the extent of the underground water main and sewer networks that will be replaced during the period.

The *Quality and Standards II* process estimated that investment of £2.3 billion was required to meet the identified standards for water quality, environmental

¹⁸ *Water Quality and Standards: Investment priorities for Scotland's water authorities 2002-2006*, Scottish Executive Environment Group, August 2001.

compliance and customer service. In our *Strategic Review of Charges 2002-06*, we identified efficiency savings of some £500 million, which reduced the investment requirement to £1.8 billion.

In contrast with the previous period, the *Quality and Standards II* process provided additional clarity as to the customer and environmental benefits that the investment programme would deliver. The key elements were as follows:

- A significant reduction in the polluting effect of sewage on rivers and lochs, estuaries and coastal waters to meet Scottish Ministers' aspirations to deliver the appropriate standards agreed within the European Union, with specific targets set for the percentage of the population receiving secondary (biological) treatment.
- The existing infrastructure at 2002 will be maintained, with some improvement in above-ground assets, but only investing enough in the underground infrastructure to prevent further deterioration.
- Substantial progress in connecting houses to sewerage systems in rural areas, where this is economically viable.
- Targets were set for improvements to drinking water quality as measured by an increase in the Water Quality 1000 index, covering regulatory compliance at customers' taps using ten key drinking water parameters.
- Targets were set for the length of water main to be relined or replaced over the investment period.
- The development of integrated network management strategies to reduce the number of properties affected by low pressure, decrease the number of bursts and improve water quality.
- Targets were set for the length of sewer that will be rehabilitated over the investment period.

- A reduction in the number of properties at risk of flooding, together with a reduction in the number of sewer blockages.

Responsibility for the fulfilment of these outputs passed to Scottish Water when it was formed from the three authorities.

The more detailed definition of the outputs to be delivered through *Quality and Standards II* is clearly beneficial for customers. The weakness of the *Quality and Standards II* process was the absence of a fixed, complete and detailed list of the investment projects to be delivered.

The *Quality and Standards III* period will cover 2006-14. The initial consultation on the investment programme will be published in July 2004. Building on *Quality and Standards II*, this programme will include better definition of outputs and a focus on affordability and on the scope to deliver investment needs in areas that concern stakeholders, such as the impact of water and waste water capacity restrictions on new development. It is envisaged that the final *Quality and Standards III* programme will be published in early 2005.

The initial development of the *Quality and Standards III* investment programme has been undertaken by a number of 'work packages', or stakeholder groups, to which this Office has contributed. We will also scrutinise and comment on consultation documents that are published.

We will continue to press for increased visibility of the capital investment programme. For the *Quality and Standards III* process, we have defined our key requirements as¹⁹:

- *Transparency*
Clarity about which outputs will, and will not, be delivered.
- *Accountability*
Clearly assigned responsibility for delivery and realistic targets for delivery.

¹⁹ Presentation to Quality and Standards III board by the Water Industry Commissioner, 31 January 2003

- *Affordability*

A proper balance between what is required and what the customer can afford to pay.

- *Auditability*

Ability to monitor output delivery rigorously.

In particular, we wish to see a fully defined investment programme for *Quality and Standards III* that provides detailed information about investment projects and their expected outcomes. This will build upon the output definition provided in *Quality and Standards II* and will allow customers, and other stakeholders, to be confident that their expectations are being met. It will also help ensure effective and efficient delivery of the investment programme, bringing better value for money for customers.

5.4 Principles of Charging consultation

The Principles of Charging consultation will be an important input to the *Strategic Review of Charges 2006-10*. The consultation, which was announced in February 2004, will be led by the Scottish Executive. When the consultation was announced, the Deputy Minister for Environment and Rural Affairs stated that:

“We anticipate this [Principles of Charging consultation] will cover the full range of concerns raised, including the total size of bills, the appropriate mix of fixed and volumetric charges for all types of customer, whether alternatives to the use of rateable values can be used in the calculation of charges, the extent to which metering should be encouraged, what kinds of discount and cross-subsidy are appropriate, what sustainable use of water should mean in practice and how all of these compare with England and Wales. If the evidence is there to support it, the consultation could lead to more fundamental changes than the proposals which Scottish Water and the Commissioner were discussing.”

We welcome the wide-ranging debate that the Minister has announced. It is important that customers understand the costs associated with providing an environmentally and financially stable water and sewerage service. It is also vital that we understand the

impact of the cross-subsidies that have developed in the industry over many years.

An important way for us to promote the interests of all customers is through the advice we give to Ministers about the revenue that Scottish Water requires to fund its core operations efficiently. The advice includes our view of the amount of total revenue that should be recovered from customer charges and the likely effects this will have on bills.

We also believe that it is important that customers understand, in a transparent manner, the likely charges they will pay over the Strategic Review period. These charges will be affected by both the total revenue requirement and by the way charges are allocated between customer groups. It is for Ministers to set these overall charging policy objectives; we will explain how these may impact on customers.

5.5 Business Plans

A key element of the process for the *Strategic Review of Charges 2006-10* will be the submission by Scottish Water of its 1st and 2nd draft Business Plans for the next Strategic Review period. The Business Plan submissions supplement the information contained in the standard regulatory returns and set out Scottish Water's strategy and objectives for the coming period.

Ministers have asked Scottish Water to submit, jointly to the Scottish Executive and to this Office, a 1st draft Business Plan by 29 October 2004. We provided detailed guidance to Scottish Water on the content and format for this 1st draft Business Plan on 25 June 2004.

The Minister provided high-level Guidance on 26 May 2004 asking that the 1st draft Business Plan should:

- draw on the evidence emerging from the *Quality and Standards III* investment planning process;
- provide an assessment of Scottish Water's objectives for its core business, in the light of the Executive's initial views on public policy considerations;

- indicate how these objectives should be delivered;
- inform the early stages of the Water Industry Commissioner's work on the Strategic Review; and
- inform the Executive's decisions on the objectives that Scottish Water is to deliver during the regulatory period.

In our detailed guidance for the 1st draft Business Plan we set out detailed descriptions of the information we require. This includes financial information, information on the proposed investment programme and expected outcomes for environmental performance and customer service levels.

This 1st draft Business Plan will inform the early stages of the Strategic Review and allow initial analysis of Scottish Water's funding requirements.

We will provide guidance on our requirements for this 2nd draft plan in December 2004. The Minister will issue detailed objectives and public expenditure assumptions for Scottish Water by the end of January 2005.

Taking this information into account, Scottish Water will then submit its 2nd draft Business Plan in April 2005. This will constitute Scottish Water's principal submission for the Strategic Review and will form the basis of our assessment of the revenue level required by Scottish Water.

5.6 Consultations

In our role as regulator it is clearly essential for us to be fully aware of customers' and stakeholders' concerns. We use a number of sources of information to build up a picture of customer views and to ensure that it is representative of all customer groups, not only those who make their views heard most audibly.

5.6.1 Public meetings

We continue to believe that public meetings are a key source of first-hand information about the issues that are important to customers. Over the past few years, we

have held more than 80 meetings across Scotland. We have visited each local authority area at least once in this period.

During the preparation of the *Strategic Review of Charges 2006-10* we plan to have joint public meetings with the five Water Customer Consultation Panels (WCCPs). This will help clarify the respective roles of our Office and the WCCPs and will provide a common forum at which customer issues for the Strategic Review can be aired. It is proposed that around four of these joint public meetings will be held. Scottish Water will be invited to participate at these meetings.

The WCCPs have an important role in making representations to our Office about customers' views. When we receive these representations, we will respond fully to the Panels' Convenor and will make our response available on our website.

5.6.2 Stakeholder information days

The Strategic Review process will involve consideration of a number of issues that have important implications for stakeholders. We are therefore holding a series of 'stakeholder information days' throughout the Strategic Review process. At these meetings we will provide information on progress with the Strategic Review and discuss relevant issues. We will build the feedback from these sessions into the process.

These meetings will be held around every six weeks throughout the next eighteen months. A representative cross-section of stakeholders will be invited to attend, to help ensure that we receive feedback from a broad range of interested parties.

These meetings will provide a key opportunity for stakeholders to engage in and influence the work of the Strategic Review. Our initial list of invitees for these sessions is as follows:

Name	Company
Mr David Watt	Institute of Directors (Scotland)
Mr Graeme Miller	Scottish Consumer Council
Mr David Caldwell	Universities Scotland
Mr SC Patten	Scottish Building Employers Federation
Dr Peter T Hughes	Scottish Engineering
Mr Gavin Hewitt	Scotch Whisky Association
Mr David Ross	Scottish Chambers of Commerce
Dr Lesley Sawers	Glasgow Chambers of Commerce
Mr Geoff Runcie	Aberdeen & Grampian Chambers of Commerce
Ms Margaret Runcie	Dumfries & Galloway Chambers of Commerce
Mr Bill Duncan	Perthshire Chambers of Commerce
Mr Mervyn Rolfe	Dundee & Tayside Chambers of Commerce
Mr R Simon Cole-Hamilton	Inverness Chambers of Commerce
Mr Bill Furness	Edinburgh Chambers of Commerce
Mr Matt Smith	Unison - Scotland
Mr Iain McMillan	CBI (Scotland)
Mr Trevor Jones	NHS in Scotland, Scottish Executive
Mr Rory Mair	COSLA
Mr Andy Robertson	NFU (Scotland)
Mr Patrick Browne	Scottish Retail Consortium
Mr Alan Rankin	Scottish Tourism Forum
Mr Jack Perry	Scottish Enterprise
Mr Bill Spiers	Scottish Trades Union Congress
Mr John Quigley	Amicus
Mr John Downie	Federation of Small Businesses
Mr Jim Milne	Dundee Anti-Poverty Forum
Mr Chris Mitchell	Scottish Local Government Forum Against Poverty
Mr Peter Kelly	The Poverty Alliance
Mr Harry Donaldson	GMB Union
Mr Danny Phillips	Child Poverty Action Group in Scotland
Ms Lucy McTernan	SCVO
Mr Angus Donaldson	University of Aberdeen
Ms Frances Wrath	Southern General Hospital
Mr Robert Galbraith	Motorola Ltd
Mr David Rae	North British Distillery Co Ltd
Mr Simon Butchart	Allied Distillers Ltd
Mr Geoff Allison	Du Pont Teijn Films UK Ltd
Mr Ian Smith	Water Customer Consultation Panels
Ms Margaret Seymour	Water Customer Consultation Panels
Mr Eric Gotts	Water Customer Consultation Panels
Mr Tom McClements	Water Customer Consultation Panels
Ms Helen Millar	Water Customer Consultation Panels
Dr John Sawkins	Water Customer Consultation Panels
Councillor William Anderson	Water Customer Consultation Panels

Name	Company
Ms Heather Brash	Water Customer Consultation Panels
Ms Clare Wells	Water Customer Consultation Panels
Councillor Yvonne Allan	Water Customer Consultation Panels
Ms Mary Langhorn	Water Customer Consultation Panels
Mr Jack Lord	Water Customer Consultation Panels
Councillor Robert Murray	Water Customer Consultation Panels
Mr James Cockburn	Water Customer Consultation Panels
Councillor David Chisholm	Water Customer Consultation Panels
Ms Johanna Dundas	Water Customer Consultation Panels
Councillor Len Scoullar	Water Customer Consultation Panels
Councillor Donald Nicholson	Water Customer Consultation Panels
Mr George Eunson	Water Customer Consultation Panels
Mr Bobby Hunter	Water Customer Consultation Panels
Deacon Lewis W Rose (Scottish Churches Industrial Mission)	Scottish Water Church Association
Mr Neil Menzies	Chemical Industries Association
Mr Bill Anderson	Forum for Private Business
Prof Alan Godfrey	University of Paisley
Mr Arthur Midwinter	University of Strathclyde
Mr Bill McInnes	University of Stirling
Mr Bob Lyon	University of Dundee
Professor Brian Main	University of Edinburgh
Professor Clare Roberts	University of Aberdeen
Dr David Simpson	'Independent'
Ms Amanda Farmer	University of St Andrews
Dr F Noorbakhsh	University of Glasgow
Mr Gavin Little	University of Stirling
Mr George Sutherland	University of Edinburgh
Dr Graham Copeland	University of Strathclyde
Prof Graham Gilbrath	Glasgow Caledonian University
Mr Grahame Bulfield	University of Edinburgh
Mr Hector Douglas	University of Aberdeen
Dr David Blackwood	University of Abertay
Mr James Wilson	Glasgow Caledonian University
Ms Jeanette Findlay	University of Glasgow
Prof John Fernie	Heriot Watt University
Dr John Sawkins	Heriot Watt University
Mr John Troy	University of Edinburgh
Prof Ken Shackleton	University of Glasgow
Mr Martin Chalkey	University of Dundee
Dr Pam Siler	University of Abertay
Mrs Patricia Briggs	Robert Gordon University
Prof D A Irvine	University of Glasgow
Professor Alex Russell	Glasgow Caledonian University

Name	Company
Prof Christine Cooper	University of Strathclyde
Prof J A Swaffield	Heriot Watt University
Prof Jensen Butler	University of St Andrews
Prof Nicholas Terry	University of Abertay
Professor Norman Deans	Robert Gordon University
Prof Peter McGregor	University of Strathclyde
Professor Rao Bhamidimarri	University of Edinburgh
Prof M Wiercigroch	University of Aberdeen
Dr Rod Jones	University of Dundee
Prof Roger McLean	University of Paisley
Prof Roger Penman	University of Strathclyde
Ms Sarah Hendry	University of Abertay
Ms Sheila Dow	University of Stirling
Mr Stuart Sayer	University of Edinburgh
Prof Tony Prosser	University of Bristol
Regional Secretary	TGWU
Cllr Katherine Dean	Aberdeen City Council
Cllr Audrey Findlay	Aberdeenshire Council
Mr Sandy Watson	Angus Council
Mr James McLellan	Argyll and Bute
Mr David Hume	Borders Council
Mr Tom Aitchison	City of Edinburgh Council
Cllr Charles Gordon	City of Glasgow Council
Mr Keir Bloomer	Clackmannanshire Council
Mr Bill Howat	Comhairle nan Eilean Siar (Western Isles Council)
Mr Philip Jones	Dumfries and Galloway Council
Mr Alex Stephen	Dundee City Council
Ms Fiona Lees	East Ayrshire Council
Ms Sue Bruce (Acting Chief Executive)	East Dunbartonshire Council
Mr John Lindsay	East Lothian Council
Mr Peter Daniels	East Renfrewshire Council
Ms Mary Pitcaithly	Falkirk Council
Mr Douglas Sinclair	Fife Council
Mr Arthur McCourt	Highland Council
Mr Robert Cleary	Inverclyde Council
Mr Trevor Muir	Midlothian Council
Mr Alastair Keddie	Moray Council
Mr Bernard Devine	North Ayrshire Council
Mr Gavin Whiteford	North Lanarkshire Council
Mr Alistair Buchan	Orkney Council
Ms Bernadette Malone	Perth and Kinross Council
Mr Tom Scholes	Renfrewshire Council
Mr Morgan Goodlad	Shetland Islands Council
Mr Tom Cairns	South Ayrshire Council

Name	Company
Mr Michael Docherty	South Lanarkshire Council
Mr Keith Yates	Stirling Council
Mr Tim Huntingford	West Dunbartonshire Council
Mr Alex Linkston	West Lothian Council
Ms Jean Spencer	Yorkshire Water
Mr Eric Goodwyn	Retired Civil Servant
Mr Euan McEwan	Anglian Water
Mr Roy Pointer	Anglian Water Services Ltd
Mr Michael Samorzewski	Aquavita
Mr Tom Shields	Avecia
Mr Andrew McCrone	Black & Veatch Consulting
Mr John Mills	Black & Veatch Consulting
Mr Harry MacMillan	BP Grangemouth
Mr David Neil-Gallacher	British Water
Mr Matthew Farrow	CBI Scotland
Mr Alan Watt	CECA (Scotland)
Ms Jackie Kerr	Department of Development (Northern Ireland)
Mr Chris Lewis	Energy Information Centre
Mr John Hanlon	Energywatch
Mr Harry Donaldson	GMB Union
Mr Chris Turner	Halcrow Management Services
Mr Mike Howard	Haliburton KBR
Ms Jennifer Ballantyne	McGrigor Donald
Mr Ian Melrose	National Farmers Union of Scotland
Mr Phil Jones	Yorkshire Electricity
Mr Bill Emery	Office of Water Services
Mr Tony Smith	Office of Water Services
Mr Keith Mason	Office of Water Services
Mr Dieter Helm	Oxera Consulting td
Mr Ian Duff	SCDI
Mr Tony White	Schroder Salomon Smith Barney
Mr Ian Marchant	Scottish and Southern Energy
Mr Alastair Northrop	Scottish Business Insider
Mr Bob Leitch	Scottish Chambers of Commerce
Ms Trisha McAuley	Scottish Consumer Council
Mr Alan Wilson	Scottish Council Development and Industry
Mr Peter Hughes	Scottish Engineering
Mr Maurice Hankey	Scottish Landowners Federation
Ms Sheila Duffield	Scottish Power
Mr Angus Donaldson	Scottish Universities
Mr Campbell McClundie	Scott Moncrieff
Ms Sheila Gunn	Shepherd & Wedderburn
Mr Guy Hewitt	Standard and Poor's
Mr Ben Haywood Smith	Strategic Management Consultants

Name	Company
Mr Brian Main	The David Hume Institute
Mr Paul Garret	Utility Week
Ms Katharine Bryan	Water Services, Northern Ireland
Ms Pamela Taylor	Water UK
Mr Maurice Terry	Watervoice
Mr Ian Cartwright-Taylor	WS Atkins Consultants Ltd
Mr Roger Sawdon	WS Atkins Consultants Ltd
Mr Nick Ellins	Water UK
Mr Robert Weedden	Water UK

We would welcome feedback from any other stakeholders who might wish to be involved in the process.

5.6.3 MSP briefings

We will hold three MSP briefings during the Strategic Review process. This will provide the Commissioner with an opportunity to inform MSPs about the Strategic Review's progress and to hear their views and concerns. By holding a series of meetings, it should be possible for MSPs to relay information back to constituents between meetings and to bring feedback to the next meeting.

5.7 Financial model

In common with other regulators, we will use a financial model to calculate the revenue that will be required from customers. This financial model allows different cost, investment and timing scenarios to be assessed in order to ensure that the option that represents best value for money for customers is chosen. The financial model will be conceived and developed using in-house resources and will be subjected to an extensive external audit. This audit will review both the workings of the model and the appropriateness of internal processes, including version control, during the preparation of the Strategic Review of Charges.

The financial model is constructed using Microsoft Excel© and comprises five main elements:

- a key that explains the use of colours within the model;

- five worksheets that allow the user to input key information and assumptions;
- seven worksheets that process the information within the model;
- three worksheets of accounting outputs – the Balance Sheet, the Income and Expenditure Account and the Cash flow statements; and
- two worksheets that represent the key outputs of the model – these comprise a summary of key performance indicators and a summary of the level of revenue, gearing ratio and the regulatory capital value for each year.

A draft copy of this financial model was made available to Scottish Water on 25 June 2004. We also held a workshop on the 14 July to allow Scottish Water a chance to comment on the draft model. A detailed manual and a final audited version of the model will be published on our website on the 29 September. A licensed copy of Microsoft Excel© will be required to run the model.

5.8 Reporter

Earlier sections of this document have outlined the extent of the information that we gather on all aspects of Scottish Water's business. We carry out a wide range of analysis of this information. This analysis informs our view on Scottish Water's performance across its operations. It is clearly essential for customers and stakeholders that the information on which we base this analysis is sound.

In England and Wales it is water industry practice for Ofwat to use a consultant engineer (known as a Reporter) to help verify information submissions. The Reporter audits the information provided to the regulator by the companies and highlights any issues or inaccuracies.

Following discussions involving the Scottish Executive, this Office and Scottish Water, we appointed a Reporter for the water industry in Scotland in December 2003. This will improve the regulatory process and the reliability of regulatory submissions in Scotland.

In England and Wales the Reporters are funded by the water companies. In Scotland we pay the Reporter. The Scottish Executive provides a grant to this office to meet the costs of this work.

The regulatory Reporter is Mr David Arnell of Black and Veatch Consulting. The Reporter is required to review all aspects of Scottish Water's information submissions, as directed by the Commissioner. This will include auditing both the Annual Return submitted by Scottish Water and its Business Plan submissions, and scrutinising the costing scope and content of the proposed investment programme. Such scrutiny has played an important role in improving the quality and reliability of information provided to Ofwat by the companies in England and Wales.

The key benefits envisaged are:

- an improvement in the quality of information exchange between Scottish Water and the Commissioner's Office;
- identification of areas of concern or improvement in the regulatory reporting regime;
- more effective regulation in customers' interests;
- increased regulatory transparency;
- assistance with the requirement for accounting separation of core and non-core activities;
- increased effectiveness in monitoring progress towards agreed efficiency targets;
- establishment of an effective and dynamic framework for future regulation of the Scottish water industry; and

- increased robustness of the Commissioner's advice to Ministers.

The Reporter will remain strictly independent of Scottish Water.

As well as this Office, the Scottish Executive, the DWQR and SEPA can ask the Reporter to examine Scottish Water's performance in areas relevant to their statutory duties.

We believe that as a result of the introduction of a Reporter, customers can have more confidence that the targets we set are realistic.

5.9 External advice

We will deliver most of the work-plan outlined in this document using in-house office resources. In certain areas, there will be a need for specialist advice from a number of companies with appropriate financial, asset management and audit expertise. This is both cost-effective for our Office and ensures that the Strategic Review of Charges benefits from the fresh perspective of external experts.

At this stage, we have identified three expert-based studies that it would be desirable to complete as an integral part of this Strategic Review of Charges. These cover indicators of financial sustainability, an audit of our financial model and an audit of Scottish Water's asset management processes.

We will also draw heavily on the resources of the Reporter to audit submissions made by Scottish Water. In particular, and as outlined above, we will ask the Reporter to examine the Annual Return, the draft and second Business Plan submissions and the associated investment programme. We will also seek help when creating guidance for the Business Plan submission.

In addition, we are fortunate in being able to seek advice and comment from two senior advisors. These are Sir Ian Byatt and Professor David Simpson. Sir Ian was the former Director General of the Office of Water Services (Ofwat). Professor Simpson was former Economic

Adviser to Standard Life, and his previous post was Professor of Economics at the University of Strathclyde.

5.10 Future developments

5.10.1 Competition

Competition is already a reality in the Scottish water industry. While it exists for a relatively small number of very large customers only, the potential impact for all customers is more significant. Competition currently tends to take the form of 'off-network' competition, or as water and effluent efficiency advice.

Off-network competition occurs where a large water user can reduce costs by making its own arrangements for a supply of water or the treatment of effluent. Where prices for the service are not broadly cost reflective, there is a danger that customers may choose to make their own arrangements for a water and effluent service. In these circumstances such a decision would typically mean that all other customers would have to pay more as a consequence.

Advice about water and effluent efficiency can reduce total water use or the volume of effluent produced. This may reduce the bill faced by a large user. This will have no material impact on other customers so long as prices are broadly cost reflective. However, in the event that cost recovery is overly reliant on the volumetric element of the charge, other customers may end up paying more as a consequence.

Under the 1998 Competition Act, there is a possibility that a new entrant could require Scottish Water to provide access to the water or sewerage network (so-called 'common carriage') or to offer a wholesale price. We are aware of a number of potential challenges under competition legislation and therefore welcome the Scottish Executive's proposed framework for competition in water services in Scotland, which will help clarify these issues.

Under the proposals, licensing will be introduced for retailers who wish to serve non-household customers. Scottish Water will have a wholesale business, which will

supply bulk water to retail businesses, and a non-household retail business, which will provide water to non-household customers. New licensees will be required to buy water from Scottish Water's wholesale business. This will ensure that responsibility for the safety and integrity of the supply remains with Scottish Water.

Over the next two years we will review the mechanisms that will be required to implement these proposals and will consult on both our approach and on the content of licenses.

5.10.2 Water Industry Commission

In his response to the Finance Committee report of April 2004, the Minister for Environment and Rural Development, Ross Finnie, announced a proposal to transfer the functions of the Water Industry Commissioner to a Water Industry Commission for Scotland. The proposed Commission would be made up of a small board of non-executive experts and a chief executive; it would have the power to set charge limits for customers.

We welcome this proposal. In evidence to the Finance Committee, we said that it would be in the interests of customers to introduce a more transparent and accountable regulatory framework, similar to that which exists for other utilities, including the water industry in England and Wales.

The current regulatory framework has ensured that much better information is available on costs, customer charges and the levels of effective investment. It has also identified the significant challenge that lies ahead in delivering value for money to customers. Scottish Water has undoubtedly made significant progress in reducing its operating costs. This is welcome, but customers will still expect more.

A strengthened and better resourced regulatory framework, as recommended by the Finance Committee, would ensure that customers in Scotland can benefit from the potential advantages of the industry remaining in the public sector.

Over the next two years we will be working with the Scottish Executive on the detailed development of these proposals.

5.10.3 Competition Commission

In announcing the proposals outlined in the draft Water Services (Scotland) Bill, the Minister indicated his intention to introduce a price determination role for the Water Industry Commission, with Scottish Water having a right of appeal to the UK Competition Commission. This is consistent with other utility regulation models and, in particular, the water industry in England and Wales.

We welcome the introduction of a formal appeal mechanism for Scottish Water, which is consistent with regulatory policy elsewhere in the UK. It ensures that challenges to regulatory decisions can be assessed in an objective and independent way. It will also help reinforce the requirement on our Office to ensure that regulatory decisions are made in a robust, auditable and transparent way.

5.10.4 Freedom of Information Act

The Freedom of Information (Scotland) Act 2002 comes into force on 1 January 2005. Like many other public bodies across Scotland, this Office will be subject to the legislation, which gives a general statutory right of access to all types of 'recorded' information held by Scottish public authorities. We recognise the importance of accountability in carrying out our duties and believe that the Act will help improve public understanding of the role and responsibilities of regulation.

In the short term, we will prepare and submit our Publication Scheme to the Scottish Information Commissioner by 31 August 2004. It is anticipated that this scheme will take effect by 30 November 2004. We will continue to monitor and review the scheme, and to update it as appropriate.

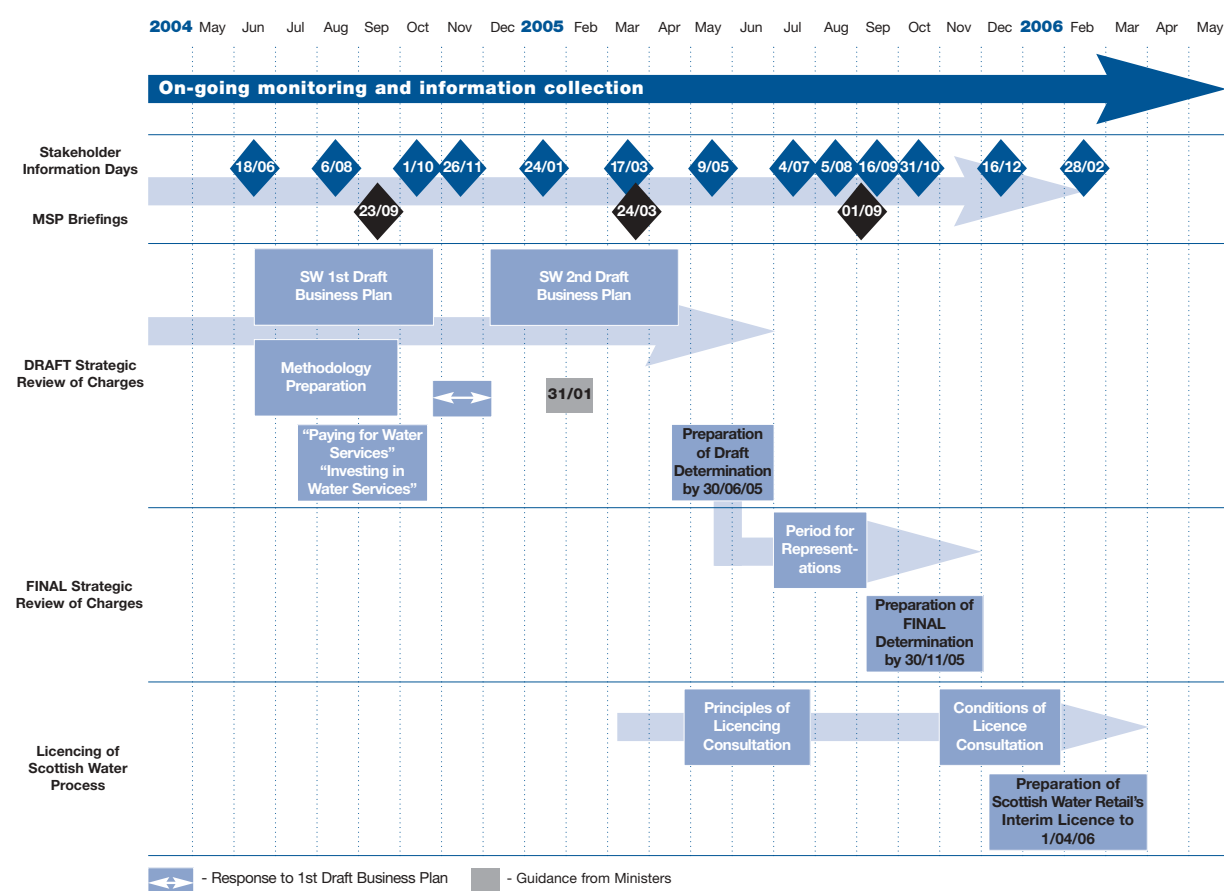
We will also continue our work to maintain and refine our information storage systems, to ensure full compliance with the Act.

Chapter 6

Timetable of outputs and consultation process

In this chapter we provide a detailed timetable of regulatory activity from May 2004 to 26 May 2006. In Section 6.1 we present the information in a table that provides an overview of the programme of activities. Section 6.2 provides a more detailed calendar of events, including a full description of each activity and an explanation of any terminology. Figure 6.1 highlights the key activities and events of the next two years.

Figure 6.1: Timeline for the preparation of the Strategic Review of Charges 2006-10



Although some of the early dates in the timetable have now passed, the programme provides an overview of the entire regulatory process leading up to the *Strategic Review of Charges 2006-10*.

This timetable will require a significant commitment of resources both from this Office and from Scottish Water. It is to be hoped that other stakeholders will also find the time to understand and contribute to the process. It is

important that submissions of regulatory information are provided punctually, and we trust that the main Ministerial Guidance will be available no later than the end of January. For our part we will also endeavour to meet all of the deadlines to which we have committed ourselves in this work-plan.

For some of the activities, for example those that are dependant on the parliamentary process, we have given our current understanding of the likely timetable of events.

6.1 Summary timetable of events May 2004–May 2006

Reference	Event	Date
	May 2004	
1.1	WIC 5: Customer service performance return (Quarter 4 – 2003-04)	07/05/2004
1.2	WIC 1/9/14/22: Non-domestic customer revenue information (Quarter 4 – 2003-04)	14/05/2004
1.3	WIC 4: Domestic customer revenue information (Quarter 4 – 2003-04)	14/05/2004
1.4	Presentation by Scottish Water of cost allocation system to Reporter	14/05/2004
1.5	WIC 6: Quality performance assessments (written) (Quarter 4 – 2003-04) – Scottish Water provides complaints files	24/05/2004
1.6	WIC 45: Issue of draft regulatory accounting tables (2003-04)	27/05/2004
1.7	WIC 25: RAB (resource accounting and budgeting) submission for April 2004	28/05/2004
	June 2004	
2.1	Complete draft financial model	09/06/2004
2.2	Award research project on financial ratios and borrowing	09/06/2004
2.3	Workshop for Scottish Executive on methodology	10/06/2004
2.4	Workshop for Scottish Water on methodology	11/06/2004
2.5	Question & Answer session on draft regulatory accounting tables (2003-04)	15/06/2004
2.6	Workshop for academics on methodology	17/06/2004
2.7	Workshop for stakeholders on methodology: 1st stakeholder information day	18/06/2004
2.8	Capital Investment Return: Quarter 4 – 2003-04 submission	18/06/2004
2.9	Write out to workshop attendees on issues raised	24/06/2004
2.10	WIC 43: Annual Return 2003-04 submission	25/06/2004
2.11	Guidance due to Scottish Water on 1st draft Business Plan submission	25/06/2004
2.12	Draft financial model provided to Scottish Water	25/06/2004
2.13	WIC 25: RAB (resource accounting and budgeting) submission for May 2004	28/06/2004
	July 2004	
3.1	Scottish Water to submit initial issues regarding guidance on 1st draft Business Plan	05/07/2004
3.2	Scottish Water to submit initial issues regarding methodology	05/07/2004
3.3	Initiate financial ratios & borrowing project	05/07/2004
3.4	Workshop on 1st draft Business Plan guidance	09/07/2004
3.5	Half yearly meeting with Water Customer Consultation Panels (WCCPs)	09/07/2004
3.6	Workshop for Scottish Water on draft financial model	14/07/2004
3.7	Scottish Water final issues regarding guidance for 1st draft Business Plan	16/07/2004
3.8	Scottish Executive Quality and Standards III consultation	20/07/2004
3.9	Scottish Executive Principles of Charging consultation	20/07/2004
3.10	Publication of the work-plan for the Strategic Review of Charges 2006-10	21/07/2004
3.11	Workshop for Scottish Water on methodology for calculation of prices for the Strategic Review	21/07/2004
3.12	Guidance to Reporter on 1st draft Business Plan audit	21/07/2004
3.13	WIC 25: RAB (resource accounting and budgeting) submission for June 2004	28/07/2004
3.14	Workshop for Scottish Water on methodology for assessing the scope for efficiency for the Strategic Review	28/07/2004
3.15	WICS final clarifications/responses on 1st draft Business Plan guidance	28/07/2004
3.16	WIC 43 Annual Return – 1st round of queries: response due from Scottish Water	30/07/2004
	August 2004	
4.1	Capital Investment Return: Quarter 1 – 2004-05 submission	01/08/2004
4.2	Stakeholder information day	06/08/2004
4.3	WIC 5: Customer service performance return (Quarter 1 – 2004-05)	13/08/2004
4.4	Publication of framework for the Strategic Review of Charges 2006-10	16/08/2004
4.5	Quarterly meeting with Scottish Executive	18/08/2004
4.6	Scottish Water submits draft regulatory accounting tables (2003-04)	18/08/2004
4.7	Publication of report on financial ratio and borrowing	23/08/2004
4.8	WIC 43 Annual Return – 2nd round of queries: response due from Scottish Water	27/08/2004
4.9	WIC 25: RAB (resource accounting and budgeting) submission for July 2004	27/08/2004
	September 2004	
5.1	Scottish Water submits draft investment programme to Reporter for audit	01/09/2004
5.2	Letter outlining initial views on regulatory accounting tables (2003-04)	09/09/2004
5.3	Workshop on completion of regulatory accounting tables (2003-04)	16/09/2004
5.4	Publication of methodology for calculation of prices for the Strategic Review of Charges 2006-10	22/09/2004
5.5	MSP briefing	23/09/2004
5.6	WIC 25: RAB (resource accounting and budgeting) submission for August 2004	25/09/2004
5.7	Scheme of charges – submission due from Scottish Water	27/09/2004
5.8	Publication of methodology for assessing the scope for efficiency for the Strategic Review of Charges 2006-10	29/09/2004
5.9	Publication of summary of methodology for the Strategic Review of Charges 2006-10	29/09/2004
5.10	Publication of draft financial model and draft manual	29/09/2004

Reference	Event	Date
	October 2004	
6.1	Stakeholder information day	01/10/2004
6.2	Asset management process review initiated	01/10/2004
6.3	WIC 25: RAB (resource accounting and budgeting) submission for September 2004	28/10/2004
6.4	Scottish Water submits 1st draft Business Plan	29/10/2004
6.5	Resubmission of regulatory accounts (2003-04) as part of 1st draft Business Plan	29/10/2004
6.6	Baseline investment programme for Quality & Standards III (draft programme)	29/10/2004
6.7	Close of methodology consultations	29/10/2004
	November 2004	
7.1	Capital Investment Return: Quarter 2 – 2004-05 submission	01/11/2004
7.2	WIC 1/9/14/22: Non-domestic customer revenue information (Quarter 2 – 2004-05)	12/11/2004
7.3	WIC 4: Domestic customer revenue information (Quarter 2 – 2004-05)	12/11/2004
7.4	WIC 5: Customer service performance return (Quarter 2 – 2004-05)	12/11/2004
7.5	Workshop on detail of Business Plan (definitional & clarification issues)	15/11/2004
7.6	Revised regulatory accounting and transfer pricing tables (2003-04)	16/11/2004
7.7	Copy of methodology response to Scottish Water & Scottish Executive	17/11/2004
7.8	Methodology response published	19/11/2004
7.9	Reporter's final report on capital programme contained in Scottish Water's draft Business Plan	19/11/2004
7.10	Summary of Reporter's view to Scottish Executive	23/11/2004
7.11	Scottish Water Board presentation on key strategic issues	23/11/2004
7.12	Quarterly meeting with Scottish Executive	24/11/2004
7.13	Publication of high-level summary of Scottish Water's 1st draft Business Plan	25/11/2004
7.14	WIC 25: RAB (resource accounting and budgeting) submission for October 2004	26/11/2004
7.15	Stakeholder information day	26/11/2004
	December 2004	
8.1	WICS response to 1st draft Business Plan and its implications for customers	03/12/2004
8.2	WICS writes to Scottish Water on cost of capital and plans for treating embedded debt	07/12/2004
8.3	Publication of guidance for 2nd draft Business Plan	08/12/2004
8.4	Scottish Water to submit initial issues regarding WICS guidance for the 2nd draft Business Plan	14/12/2004
8.5	WIC 19: Investment appraisal audits	15-16/12/2004
8.6	Half yearly meeting with Water Customer Consultation Panels (WCCPs)	15/12/2004
8.7	Workshop on 2nd draft Business Plan guidance	17/12/2004
8.8	Guidance to Reporters on 2nd draft Business Plan	17/12/2004
8.9	Resubmission of regulatory accounts and transfer pricing tables (2003-04) by Scottish Water	22/12/2004
8.10	WICS draft corporate plan & budget to Scottish Executive	23/12/2004
8.11	Scottish Water final issues regarding guidance for 2nd draft Business Plan	23/12/2004
8.12	WIC 25: RAB (resource accounting and budgeting) submission for November 2004	28/12/2004
8.13	WIC 24: Leakage strategy	31/12/2004
	January 2005	
9.1	WICS final clarifications/responses on 2nd draft Business Plan guidance	10/01/2005
9.2	Draft operating expenditure efficiency targets announced	14/01/2005
9.3	Letter to Scottish Water regarding regulatory accounts and transfer pricing tables (2003-04)	20/01/2005
9.4	Stakeholder information day	24/01/2005
9.5	Workshop on regulatory accounts and transfer pricing tables	27/01/2005
9.6	WIC 25: RAB (resource accounting and budgeting) submission for December 2004	28/01/2005
9.7	Detailed Guidance from Ministers	31/01/2005
	February 2005	
10.1	Capital Investment Return: Quarter 3 – 2004-05 submission	01/02/2005
10.2	Draft capital expenditure efficiency targets published	02/02/2005
10.3	Tri-partite workshop on implications of Ministerial Guidance	09/02/2005
10.4	Stakeholder workshop on implications of Ministerial Guidance	11/02/2005
10.5	WIC 5: Customer service performance return (Quarter 3 – 2004-05)	11/02/2005
10.6	Workshop on efficiency targets	21/02/2005
10.7	Final version of capital programme to be submitted to Reporter for audit	23/02/2005
10.8	Quarterly meeting with Scottish Executive	24/02/2005
10.9	WIC 25: RAB (resource accounting and budgeting) submission for January 2005	28/02/2005
10.10	WICS response to final Guidance from Ministers published	28/02/2005
	March 2005	
11.1	Stakeholder information day	17/03/2005
11.2	MSP briefing	24/03/2005
11.3	WIC 25: RAB (resource accounting and budgeting) submission for February 2005	28/03/2005
11.4	WIC XX: Annual Return 2004-05 guidance issued	End March
11.5	WIC XX: Regulatory accounting and transfer pricing tables 2004-05 guidance issued	End March

Reference	Event	Date
	April 2005	
12.1	Scottish Water submits 2nd draft Business Plan	20/04/2005
12.2	WIC 25: RAB (resource accounting and budgeting) submission for March 2005	28/04/2005
12.3	Launch of initial consultation on licensing	28/04/2005
12.4	Financial model finalised and published	28/04/2005
	May 2005	
13.1	Capital Investment Return: Quarter 4 – 2004-05 submission	01/05/2005
13.2	Workshop on the detail of Scottish Water's 2nd draft Business Plan (definitional and clarification issues)	04/05/2005
13.3	Stakeholder information day	09/05/2005
13.4	Scottish Water Board presentation on key strategic issues	12/05/2005
13.5	WIC 5: Customer service performance return (Quarter 4 – 2004-05)	13/05/2005
13.6	WIC 1/9/14/22: Non-domestic customer revenue information (Quarter 4 – 2004-05)	13/05/2005
13.7	WIC 4: Domestic customer revenue information (Quarter 4 – 2004-05)	13/05/2005
13.8	Publication of Scottish Water's 2nd draft Business Plan	16/05/2005
13.9	WIC 25: RAB (resource accounting and budgeting) submission for April 2005	27/05/2005
13.10	WICS response to Scottish Water's 2nd draft Business Plan and its implications for customers	30/05/2005
	June 2005	
14.1	Quarterly meeting with Scottish Executive	01/06/2005
14.2	Draft Strategic Review of Charges to printers	14/06/2005
14.3	WIC XX: Annual Return 2004-05 submission	17/06/2005
14.4	WIC XX: Regulatory accounting and transfer pricing tables 2004-05 submission	17/06/2005
14.5	WIC 25: RAB (resource accounting and budgeting) submission for May 2005	28/06/2005
14.6	Publication of draft Strategic Review of Charges 2006-10	30/06/2005
	July 2005	
15.1	Half yearly meeting with Water Customer Consultation Panels (WCCPs)	01/07/2005
15.2	Stakeholder information day	04/07/2005
15.3	WIC XX Annual Return – 1st round of queries: response due from Scottish Water	15/07/2005
15.4	WIC 25: RAB (resource accounting and budgeting) submission for June 2005	28/07/2005
15.5	Close of initial consultation on licensing	29/07/2005
	August 2005	
16.1	Capital Investment Return: Quarter 1 – 2005-06 submission	01/08/2005
16.2	Stakeholder information day	05/08/2005
16.3	WIC 5: Customer service performance return (Quarter 1 – 2005-06)	12/08/2005
16.4	WIC XX Annual Return – 2nd round of queries: response due from Scottish Water	12/08/2005
16.5	WIC 25: RAB (resource accounting and budgeting) submission for July 2005	26/08/2005
16.6	Quarterly meeting with Scottish Executive	31/08/2005
16.7	Final Guidance from Ministers	31/08/2005
	September 2005	
17.1	MSP briefing	01/09/2005
17.2	Deadline for representations on draft Strategic Review of Charges	05/09/2005
17.3	Stakeholder information day	16/09/2005
17.4	WIC 25: RAB (resource accounting and budgeting) submission for August 2005	28/09/2005
	October 2005	
18.1	WIC 25: RAB (resource accounting and budgeting) submission for September 2005	28/10/2005
18.2	Start of consultation on draft licence conditions	31/10/2005
18.3	Stakeholder information day	31/10/2005
	November 2005	
19.1	Capital Investment Return: Quarter 2 – 2005-06 submission	01/11/2005
19.2	WIC 1/9/14/22: Non-domestic customer revenue information (Quarter 2 – 2005-06)	11/11/2005
19.3	WIC 4: Domestic customer revenue information (Quarter 2 – 2005-06)	11/11/2005
19.4	WIC 5: Customer service performance return (Quarter 2 – 2005-06)	11/11/2005
19.5	Final Strategic Review of Charges to printers	14/11/2005
19.6	Quarterly meeting with Scottish Executive	16/11/2005
19.7	WIC 25: RAB (resource accounting and budgeting) submission for October 2005	28/11/2005
19.8	Publication of Final Strategic Review of Charges 2006-10	30/11/2005

Reference	Event	Date
	December 2005	
20.1	Half yearly meeting with Water Customer Consultation Panels (WCCPs)	01/12/2005
20.2	WIC 19: Investment appraisal audits	14-15/12/2005
20.3	Prices to Commission from Scottish Water	16/12/2005
20.4	Stakeholder information day	16/12/2005
20.5	WIC 25: RAB (resource accounting and budgeting) submission for November 2005	28/12/2005
20.6	WIC 24: Leakage strategy	30/12/2005
	January 2006	
21.1	WIC 6: Quality Performance Assessments (written) (Quarter 3 – 2005-06) Scottish Water provides list of complaints	23/01/2006
21.2	WIC 25: RAB (resource accounting and budgeting) submission for December 2005	27/01/2006
21.3	Close of consultation on draft licence conditions	31/01/2006
	February 2006	
22.1	Capital Investment Return: Quarter 3 – 2005-06 submission	01/02/2006
22.2	WIC 6: Quality Performance Assessments (written) (Quarter 3 – 2005-06) Scottish Water provides complaints files	06/02/2006
22.3	Publication of Investment and Asset Management Report (2004-05)	09/02/2006
22.4	WIC 5: Customer service performance return (Quarter 3 – 2005-06)	10/02/2006
22.5	WIC 25: RAB (resource accounting and budgeting) submission for January 2006	28/02/2006
22.6	Stakeholder information day	28/02/2006
	March 2006	
23.1	WIC 25: RAB (resource accounting and budgeting) submission for February 2006	28/03/2006
23.2	WIC XX: Annual Return 2005-06 guidance issued	End March
23.3	WIC XX: Regulatory accounting and transfer pricing tables 2005-06 guidance issued	End March
	April 2006	
24.1	Scottish Water retail business licensed	01/04/2006
24.2	Publication of Customer Service Report (2004-05)	06/04/2006
24.3	WIC 6: Quality Performance Assessments (written) (Quarter 4 – 2005-06) Scottish Water provides list of complaints	24/04/2006
24.4	WIC 25: RAB (resource accounting and budgeting) submission for March 2006	28/04/2006
	May 2006	
25.1	Capital Investment Return: Quarter 4 – 2005-06 submission	01/05/2006
25.2	WIC 6: Quality Performance Assessments (written) (Quarter 4 – 2005-06) Scottish Water provides complaints files	08/05/2006
25.3	WIC 5: Customer service performance return (Quarter 4 – 2005-06)	12/05/2006
25.4	WIC 1/9/14/22: Non-domestic customer revenue information (Quarter 4 – 2005-06)	12/05/2006
25.5	WIC 4: Domestic customer revenue information (Quarter 4 – 2005-06)	12/05/2006
25.6	WIC 25: RAB (resource accounting and budgeting) submission for April 2006	26/05/2006

6.2 Detailed description of the activities set out in the work programme

In this section we provide a monthly events schedule, with a detailed description of the activities being carried out at each point.

1. May 2004

1.1 WIC 5: Customer service performance return (Quarter 4 – 2003-04)

The 'WIC 5' Customer service performance return is submitted quarterly by Scottish Water to our Office. It enables us to monitor Scottish Water's customer service performance and check compliance with the guaranteed minimum standards of service.

It covers:

- number of written contacts;
- number of telephone contacts;
- number of enquiries and speed of response;
- number of complaints and speed of response;
- number of telephone calls received, answering speed and number abandoned;
- number of planned interruptions and response time;
- number of unplanned interruptions and response time;

- septic tank emptying;
- number of sewer flooding incidents;
- keeping appointments; and
- GMS payments made.

This information allows us to monitor customer service performance between Annual Returns. It enables us to spot trends and seasonal variations and provides supporting information when we examine particular customer service issues.

1.2 WIC 1/9/14/22: Non-domestic customer revenue information (Quarter 4 – 2003-04)

These submissions, which are made by Scottish Water twice a year, are intended to capture a wide variety of information in relation to non-domestic customers and domestic customers with water meters. The information covered in the submissions includes:

- customer revenue information;
- consumption (for metered customers);
- rateable value used for unmeasured services (water, waste water and drainage services);
- debt analysis;
- special agreements for large customers; and
- meter information (eg number of meters, size of meters).

We believe that it is essential for the financial stability of Scottish Water that it has a complete and detailed knowledge of its customer base and the income generated by different customer groups. These submissions are also intended to help our Office and Scottish Water to forecast future trends for customers and to estimate the impact of changes in the level and structure of charges. They can be an invaluable tool in monitoring revenue on an ongoing basis, ensuring that Scottish Water's customer information is consistent with its declared revenues and with the revenue cap set by the Minister.

At present, the information being provided by Scottish Water in these submissions is not as complete or as robust as we would like. We are working with Scottish Water to improve the quality of the information provided and hence the ability to forecast accurately the impact of tariff changes.

1.3 WIC 4: Domestic customer revenue information (Quarter 4 – 2003-04)

The WIC 4 report is the equivalent of the WIC 1/9/14/22 information, but for households without water meters, and its purpose is also very similar. The information requested allows us to monitor revenue from households and to understand issues such as affordability and ease of collection.

The information requested includes the number of households billed and the number receiving discounts, along with outstanding debt analysis, all split by Council Tax band and by local authority area. Because unmetered households are billed on Scottish Water's behalf by the local authorities, Scottish Water sources this information from the local authorities.

This information, which is submitted by Scottish Water twice a year, allows us to monitor debt on an on-going basis. It can also provide an indicator as to whether customer revenues will be consistent with the revenue cap endorsed by the Minister.

1.4 Presentation by Scottish Water of cost allocation system to Reporter

Scottish Water has embarked on an important initiative to introduce a detailed activity-based costing system. At our request, Scottish Water has presented this system to us and to the Reporter. This new cost allocation system will improve the accuracy and completeness of regulatory returns. In particular, it will allow Scottish Water to separate out the costs associated with its core and non-core activities.

The next Strategic Review of Charges will focus only on the core activities of Scottish Water in providing water and sewerage services to customers in Scotland. This

change reflects the requirements of the Water Industry Act 2002, which restricts our role to promoting the interests of customers of the core business. As part of this 'ring fencing', we have begun to establish regulatory accounts that will ensure that customers of the core business are only paying for services associated with core activities. This work will be completed during the current financial year.

The proposed changes to the competition framework, as part of the draft Water Services (etc) Scotland Bill, will also require a further level of accounting separation. This framework will require there to be a clear split between the retail (customer service and billing) costs and the wholesale (network management and operation of treatment plants) costs.

1.5 WIC 6: Quality performance assessments (written) (Quarter 4 – 2003-04) – Scottish Water provides complaints files

This is an assessment of how well Scottish Water handles customer complaints. It is carried out periodically by our Office and looks at the quality of response to ensure that the overall service received by complainants is not compromised by the speed of response (as reported in WIC 5).

A random sample of complaints is assessed against a set of criteria with 'yes' or 'no' outcomes. These include whether:

- the complaint was dealt with by the correct person;
- the response addressed the substance of the complaint;
- the response is written in plain English and avoids jargon; and
- the tone of the response is fitting.

We score the various elements and create a percentage score for each complaint. We expect that the response to each complaint to achieve 98% or higher. We report the percentage of complaints meeting this standard.

Scottish Water must submit to us by this date the files of those complaints randomly selected by WICS for assessment.

1.6 WIC 45: Issue of draft regulatory accounting tables (2003-04)

We are issuing these draft regulatory accounting tables to Scottish Water to:

- identify the core and non-core activities carried out by Scottish Water, and to give a separate breakdown of these businesses;
- identify separately the retail and wholesale segments of the core business currently performed by Scottish Water and to provide separate reporting frameworks for these businesses; and
- finalise regulatory accounting guidelines.

This will allow us to analyse the retail and wholesale parts of the water industry in Scotland and set appropriate price limits for both wholesale and retail activities.

Feedback from Scottish Water on this draft will be taken into account when developing the final versions of these tables.

1.7 WIC 25: RAB (resource accounting and budgeting) submission for April 2004

The 'RAB return' financial submissions are made on a monthly basis by Scottish Water. They comprise:

- the main financial statements;
- a summary analysis of fixed assets;
- income analysis (split by water and waste water);
- analysis of operating costs; and
- an audit trail of revisions to budget forecasts submitted at the start of the year.

It is important for us to be able to monitor the financial position of Scottish Water throughout the financial year. It provides visibility on key financial trends and movements in operating costs. Using this information we can report on Scottish Water's progress in achieving its financial targets.

In addition to the monthly submissions, each quarter the RAB returns include analysis of above-ground fixed asset costs and depreciation, analysis of infrastructure asset cost and depreciation, analysis of total assets, information on the cost of capital and analysis of exceptional items and asset disposals.

2. June 2004

2.1 Complete draft financial model

This financial model is used extensively in the Strategic Review process to establish the revenue required from customers for different cost, investment and timing scenarios. This allows us to ensure that customers benefit from the lowest sustainable price, which generates an acceptable profile of charges and is consistent with allowed levels of debt.

The financial model is conceived and developed using in-house resources and is subjected to an extensive external audit. This audit reviews both the workings of the model and the appropriateness of internal processes and version control during the preparation of the Strategic Review of Charges.

A draft copy of this financial model was made available to Scottish Water on 25 June 2004. We also held a workshop on its workings on 14 July. A detailed operation manual and a final draft version of the model will be provided to Scottish Water on 29 September. The model and the manual will be published on our website at this time.

2.2 Award research project on financial ratios and borrowing

The aim of this project is to investigate funding arrangements used within the industry in England and Wales, in particular the levels and types of debt funding adopted by the companies. It will also look at the markets' willingness to issue debt to utility industries and the structures and practices adopted by lenders.

The Scottish water industry operates within a public sector model, with all borrowing currently funded by public expenditure. For the *Strategic Review of Charges 2006-10*, it is important that the financing arrangements of Scottish Water are addressed and that possible models for access to debt are understood. This understanding will help to ensure that customers benefit fully from the lower cost of capital in the public sector.

The proposed project will seek to:

- investigate the arrangements used by companies within the water and sewerage industry in England and Wales and in other utility industries to fund themselves through the acquisition of debt on the private markets;
- identify the structures and practices adopted by lenders operating in the markets used by utility companies to source debt, as well as the types of debt issued; and
- appraise the extent to which the private sector practices identified above may be applied to the public sector model employed in the Scottish water industry and the benefits this may bring to the various stakeholders.

It is proposed that this work is carried out by external experts after a competitive tender process.

2.3 Workshop for Scottish Executive on methodology

The purpose of this session is to allow us to outline to the Scottish Executive our initial thinking on the methodology for the Strategic Review. This is one of a series of workshops with customers and stakeholders to explain our proposed approach and to seek feedback and comments from interested parties.

The methodology issues that are likely to be raised at this workshop include:

- the methodology for collection of information;
- key inputs into the Strategic Review process;
- customer issues;
- how we will take account of the impact of competition proposals;
- establishing operating costs and efficiency;
- establishing capital expenditure efficiency; and
- financial modelling.

2.4 Workshop for Scottish Water on methodology

See item 2.3 above. This is the equivalent workshop for Scottish Water staff.

2.5 Question and Answer session on draft regulatory accounting tables (2003-04)

This is an opportunity for Scottish Water to raise queries and concerns on the draft regulatory accounting tables for 2003-04, sent on 27 May 2004 (item 1.6 above).

2.6 Workshop for academics on methodology

See item 2.3 above. This is the equivalent workshop for academics.

2.7 Workshop for stakeholders on methodology: 1st stakeholder information day.

See item 2.3 above. This is the equivalent workshop for stakeholders who have not been involved in the workshops on 10, 11 and 17 June.

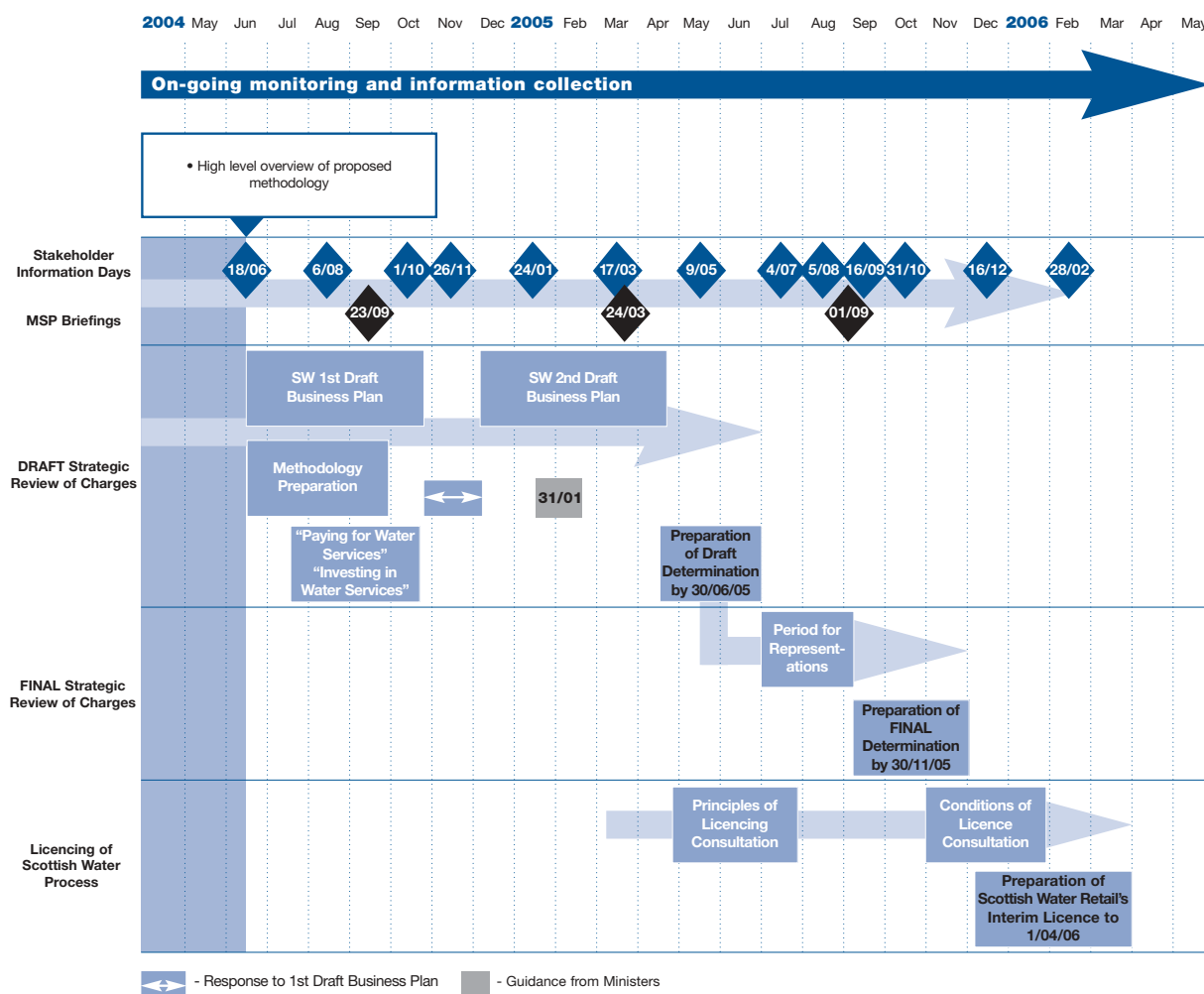
This will also be the first in a series of information days for stakeholders, which will be held approximately every six weeks throughout the Strategic Review process. The main aims of these workshops are to inform stakeholders about the process of the Strategic Review of Charges, and to seek input where appropriate. The initial list of proposed invitees is given in Chapter 5, Section 5.6.2.

These workshops will play an important role in ensuring the transparency of the Strategic Review process and will provide stakeholders with an opportunity to input to the Strategic Review. We would therefore encourage stakeholders to participate as fully as possible.

At this stage in the process the key areas for discussion will include:

- our initial thinking on methodology;
- the timescale for the Strategic Review;
- key issues for the Strategic Review; and
- opportunities for stakeholders to input to the process.

The following figure illustrates progress in our overall work-plan at the time of the first stakeholder information day.

Figure 6.2: Progress in the preparation of the Strategic Review of Charges 2006-10

2.8 Capital Investment Return: Quarter 4 – 2003-04 submission

The purpose of the quarterly CIR submission is to monitor progress, at a project level, in the delivery of Scottish Water's capital investment programme. It contains information on:

- forecast and actual project spend;
- physical progress towards defined milestones; and
- explanations of financial variances.

Through a combination of the quarterly CIRs and the investment tables in the Annual Return, we can track

delivery of the investment programme and monitor the effectiveness and efficiency of Scottish Water in delivering the required investment. The CIR can also highlight material changes from the planned investment programme. These may be positive (efficiencies or early delivery of a project) or negative (cost overruns or project delays).

2.9 Write out to workshop attendees on issues raised

Following the methodology workshops in June (items 2.3, 2.4, 2.6 & 2.7), we will write out to all those invited confirming the discussions at the workshops and providing comments on issues raised. Copies of the slides used in the presentations will be offered to all of

those who were not able to attend. These slides will also be placed on our website.

2.10 WIC 43: Annual Return 2003-04 submission

Scottish Water submits its response to our WIC 43 request for its annual information return.

This is our single largest information request; it is issued to Scottish Water in April of each year, for completion by the end of June. The Return collects information on all aspects of Scottish Water's business and is used by this Office to:

- calculate efficiency targets;
- monitor expenditure;
- reconcile movements in costs;
- assess levels of service to customers;
- track investment programmes;
- assess compliance with environmental and drinking water standards; and
- compare Scottish Water's performance against that of the English and Welsh companies.

The 2003-04 submission will form the base submission for our work on the *Strategic Review of Charges 2006-10*.

2.11 Guidance due to Scottish Water on 1st draft Business Plan submission

Scottish Water is required to produce two draft Business Plans, the 1st draft in October 2004 (item 6.4) and the 2nd draft in April 2005 (item 12.1). This guidance sets out the information we require from Scottish Water in the 1st draft Business Plan to inform our analysis for the Strategic Review. The guidance will include a detailed list (including data tables) of our information requirements and detailed definitions for each of the items requested.

The October draft Business Plan will be Scottish Water's first attempt at completing a Business Plan for its economic regulator. This plan will describe Scottish Water's strategy and objectives. Scottish Ministers will also use this plan to help inform the guidance that they wish to issue to the Water Industry Commissioner in January 2005.

The second draft Business Plan is due in April 2005. This plan should reflect the Ministerial Guidance and should contain a highly detailed investment plan. We will use this plan to inform our draft advice or determination in June 2005.

2.12 Draft financial model provided to Scottish Water

See item 2.1 above. We provide a draft copy of the financial model to allow Scottish Water to track the impact on customer charges of both its own assumptions (eg in the Business Plan submissions) and ours as the price review progresses.

2.13 WIC 25: RAB (resource accounting and budgeting) submission for May 2004

The 'RAB return' financial submissions are made on a monthly basis by Scottish Water. They comprise;

- the main financial statements;
- a summary analysis of fixed assets;
- income analysis (split by water and waste water);
- analysis of operating costs; and
- an audit trail of revisions to budget forecasts submitted at the start of the year.

It is important for us to be able to monitor the financial position of Scottish Water throughout the financial year. It provides visibility on key financial trends and movements in operating costs. Using this information allows us to report on Scottish Water's progress in achieving its financial targets.

3. July 2004

3.1 Scottish Water to submit initial issues regarding guidance on 1st draft Business Plan

This is an opportunity for Scottish Water to seek clarification on the Business Plan guidance and to communicate any concerns that it might have.

3.2 Scottish Water to submit initial issues regarding methodology

This is an opportunity for Scottish Water to seek clarification about the methodology for the Strategic Review, and to raise any initial issues, prior to the opening of the methodology consultation process itself.

3.3 Initiate financial ratios & borrowing project

We expect the successful tenderer to begin work on the financial ratios and borrowing project at this stage. The findings of this project will feed into the Strategic Review process and will be published in August 2004 (item 4.7).

3.4 Workshop on 1st draft Business Plan guidance

This is an opportunity for Scottish Water and this Office to deal with any concerns raised by Scottish Water on 05/07/04 (item 3.1).

3.5 Half yearly meeting with Water Customer Consultation Panels (WCCPs)

At these regular meetings, the Commissioner and the WCCPs update one another on key activities, customer-related issues and areas of joint concern. During the Strategic Review process, the meetings will provide the Commissioner with the opportunity to update the WCCPs on progress with the Strategic Review and to seek feedback on customer issues and concerns.

3.6 Workshop for Scottish Water on draft financial model

This workshop will allow Scottish Water to seek

clarification on any issues relating to the draft financial model provided to them under item 2.12.

3.7 Scottish Water final issues regarding guidance for 1st draft Business Plan

This is an opportunity for Scottish Water to raise any outstanding issues regarding the guidance for the 1st draft Business Plan, prior to this Office issuing final clarifications on 28/07/04 (item 3.15).

3.8 Scottish Executive Quality and Standards III consultation

This is the proposed date for publication of this consultation by the Scottish Executive – the actual date is subject to ministerial approval.

The *Quality and Standards III* process will outline the proposed investment programme for the period from 2006 to 2014. Building on the previous Quality and Standards II programme, the consultation will seek to identify views on the investment priorities for the industry in Scotland. In particular, views are sought on the balance to be achieved between competing environmental, water quality and customer service priorities for the available funds.

We will respond to this consultation. In establishing the investment programme for the period, it will be important that full account is taken of Scottish Water's ability to deliver the programme (it is likely that the programme will contain many thousands of discrete projects across Scotland), the capacity of the contracting industry in Scotland and the potential disruption caused.

3.9 Scottish Executive Principles of Charging consultation

This is the proposed date for publication of this consultation by the Scottish Executive – the actual date is subject to ministerial approval.

The Principles of Charging consultation will be one of

the key inputs to the Strategic Review of Charges. It will allow customers to comment on the way in which they are charged for water and sewerage services. The Scottish Executive has announced that the consultation will cover:

- the total size of bills;
- the appropriate mix of fixed and volumetric charges for all types of customer;
- whether alternatives to the use of rateable values can be used in the calculation of charges;
- the extent to which metering should be encouraged;
- which kinds of discount and cross-subsidy are appropriate;
- what sustainable use of water should mean in practice; and
- how all of the above compare with the situation in England and Wales.

We will respond to this consultation. In particular, we will outline the impact of the proposals on different customer groups.

3.10 Publication of the work-plan for the Strategic Review of Charges 2006-10

The work-plan sets out in detail each activity in the process of the *Strategic Review of Charges 2006-10*. There is also a description of the overall regulatory process and the information that we collect.

We plan to publish five documents about our proposed methodology for the *Strategic Review of Charges 2006-10*.

The first four of these publications outline how we intend to prepare the 2006-10 Strategic Review of Charges. The four areas covered are:

- work-plan;
- the regulatory framework in Scotland and lessons learned;

- the calculation of prices; and
- the scope for efficiency.

The fifth document is a summary of the first four.

We welcome comments from stakeholders about the content of these publications.

The final date for comments is 29 October 2004.

3.11 Workshop for Scottish Water on methodology for calculation of prices for the Strategic Review

This workshop will allow our Office and Scottish Water to discuss the methodology approach to be adopted for the calculation of prices for the *Strategic Review of Charges 2006-10*. It will help inform the consultation on this topic scheduled for publication on 22/9/04 (item 5.4).

3.12 Guidance to Reporter on 1st draft Business Plan audit

We will provide detailed guidance to the Reporter for Scottish Water, Mr David Arnell of Black and Veatch. This guidance will cover the key issues on which we believe he should focus during his audit of the 1st draft Business Plan. This plan is due for submission in October 2004 (item 6.4). The remit is likely to include:

- auditing the general information quality that underpins the Business Plan;
- identifying and highlighting areas of material concern or inconsistency within the Plan;
- auditing compliance with the guidance that this office will issue relating to the form and content of the plan;
- commenting on the internal processes adopted within Scottish Water to address its business strategy;
- auditing how Scottish Water compiled its investment programme;
- reviewing the consistency of this plan with the output

of the *Quality and Standards III* work packages; and

- commenting on the costing of the investment programme and identifying areas of overlap.

3.13 WIC 25: RAB (resource accounting and budgeting) submission for June 2004

The 'RAB return' financial submissions are made on a monthly basis by Scottish Water. They comprise:

- the main financial statements;
- a summary analysis of fixed assets;
- income analysis (split by water and waste water);
- analysis of operating costs; and
- an audit trail of revisions to budget forecasts submitted at the start of the year.

It is important for us to be able to monitor the financial position of Scottish Water throughout the financial year. It provides visibility on key financial trends and movements in operating costs. Using this information we can report on Scottish Water's progress in achieving its financial targets.

3.14 Workshop for Scottish Water on the methodology for assessing the scope for efficiency for the Strategic Review

This workshop will allow our Office and Scottish Water to discuss the approach to be adopted in assessing the scope for efficiency for the *Strategic Review of Charges 2006-10*. It will help inform the consultation on this topic scheduled for publication on 29/9/04 (item 5.8).

3.15 WICS final clarifications/responses on 1st draft Business Plan guidance

Following the workshop on the 1st draft Business Plan guidance and Scottish Water's response on outstanding issues (item 3.7), we issue final clarifications and responses on the issues raised by Scottish Water. The

submission of the 1st draft Business Plan is due on 29/10/04 (item 6.4).

3.16 WIC 43: Annual Return – 1st round of queries: response due from Scottish Water

This is a follow up to Scottish Water's submission of the Annual Return (item 2.10). Both Scottish Water and this Office carry out rigorous checks on the Annual Return information. Given the volume of information, there are inevitably issues that arise during the checking process and this is an opportunity for these to be resolved.

4. August 2004

4.1 Capital Investment Return: Quarter 1 – 2004-05 submission

The purpose of the quarterly CIR submission is to monitor progress, at a project level, in the delivery of Scottish Water's capital investment programme. It contains information on:

- forecast and actual project spend;
- physical progress towards defined milestones; and
- explanations of financial variances.

Through a combination of the quarterly CIRs and the investment tables in the Annual Return, we can track delivery of the investment programme and monitor the effectiveness and efficiency of Scottish Water in delivering the required investment. The CIR can also highlight material changes from the planned investment programme. These may be positive (efficiencies or early delivery of a project) or negative (cost overruns or project delays).

4.2 Stakeholder information day

This will be the second in a series of information days for stakeholders, which will be held approximately every six weeks throughout the Strategic Review process. The main aims of these workshops are to inform stakeholders about the process of the Strategic Review

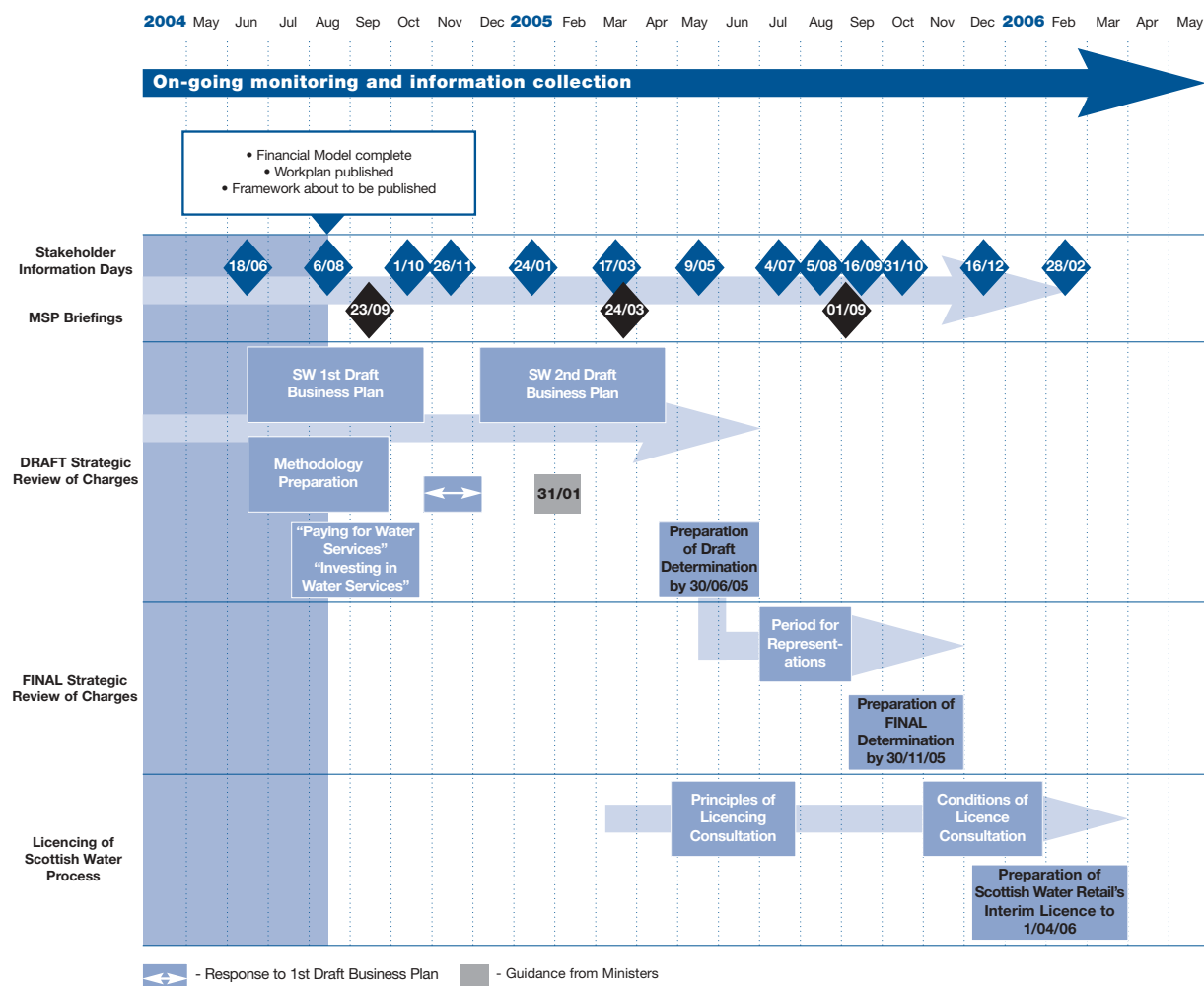
of Charges, and to seek input where appropriate. The proposed initial list of invitees is given in Chapter 5, Section 5.6.2.

These workshops will play an important role in ensuring the transparency of the Strategic Review process and will provide stakeholders with an opportunity to input to the Strategic Review. We would therefore encourage stakeholders to participate as fully as possible.

At this stage in the process the key areas for discussion will include:

- the work-plan for the Strategic Review (this document) (item 3.10);
- the framework for the Strategic Review which is published on 16 August 2004 (item 4.4);
- publication of the methodology for calculation of prices for the Strategic Review on 22 September 2004 (item 5.4);
- publication of the methodology for assessing the scope for efficiency for the Strategic Review on 29 September 2004 (item 5.8); and
- the draft financial model which is published on 29 September (item 5.10).

The following figure illustrates progress in our overall work-plan at the time of the second stakeholder information day.

Figure 6.3: Progress in the preparation of the Strategic Review of Charges 2006-10

4.3 WIC 5: Customer service performance return (Quarter 1 – 2004-05)

The 'WIC 5' Customer service performance return is submitted quarterly by Scottish Water to our Office. It enables us to monitor Scottish Water's customer service performance and check compliance with the guaranteed minimum standards of service.

It covers:

- number of written contacts;
- number of telephone contacts;
- number of enquiries and speed of response;
- number of complaints and speed of response;
- number of telephone calls received, answering speed and number abandoned;
- number of planned interruptions and response time;
- number of unplanned interruptions and response time;
- septic tank emptying;
- number of sewer flooding incidents;
- keeping appointments; and
- GMS payments made.

This information allows us to monitor customer service performance between Annual Returns. It enables us to spot trends and seasonal variations and provides supporting information when we examine particular customer service issues.

4.4 Publication of Framework for the Strategic Review of Charges 2006-10

We propose to publish five documents about our proposed methodology for the *Strategic Review of Charges 2006-10*.

The first four of these publications outline how we intend to prepare the 2006-10 Strategic Review of Charges. The four areas covered are:

- work-plan;
- the regulatory framework in Scotland and lessons learned;
- the calculation of prices; and
- the scope for efficiency.

The fifth document is a summary of the first four.

We welcome comments from stakeholders about the content of these publications. The deadline for such comments is 29 October 2004.

4.5 Quarterly meeting with Scottish Executive

The purpose of this quarterly meeting is to ensure that the Scottish Executive is kept fully up to date with the progress of the *Strategic Review of Charges 2006-10*. It is an opportunity for a focused discussion about issues raised within the Strategic Review process.

4.6 Scottish Water submits draft regulatory accounting tables (2003-04)

See item 1.6. This submission is in line with the requirement established in the WIC 45 letter of 27/05/04.

4.7 Publication of report on Financial ratios and borrowing

See item 2.2. We publish the external expert report on financial ratios and borrowing in the water industry. It will also appear on our website.

4.8 WIC 43 Annual Return – 2nd round of queries: response due from Scottish Water

This is a follow up to Scottish Water's submission of the Annual Return (item 2.10). Both Scottish Water and this Office carry out rigorous checks on the Annual Return information. Given the volume of information, there are inevitably issues that arise during the checking process and this is an opportunity for these to be resolved. A first round of queries takes place in July 2004 (item 3.16). This is the second round.

4.9 WIC 25: RAB (resource accounting and budgeting) submission for July 2004

The 'RAB return' financial submissions are made on a monthly basis by Scottish Water. They comprise:

- the main financial statements;
- a summary analysis of fixed assets;
- income analysis (split by water and waste water);
- analysis of operating costs; and
- an audit trail of revisions to budget forecasts submitted at the start of the year.

It is important for us to be able to monitor the financial position of Scottish Water throughout the financial year. It provides visibility on key financial trends and movements in operating costs. Using this information we can report on Scottish Water's progress in achieving its financial targets.

5. September 2004

5.1 Scottish Water submits draft investment programme to the Reporter for audit

A key element of Scottish Water's Business Plan submissions (items 6.4 and 12.1) will be the capital investment programme for the next regulatory period. This will define, at a project level, Scottish Water's view of the investment required to meet the objectives set for the business over the next regulatory period.

This proposed draft investment programme is to be reviewed by the Reporter to allow a commentary to be prepared for the Commissioner on the Reporter's view of the proposed programme. The Reporter's audit of the draft investment programme will be carried out in accordance with the guidance for audit of the draft investment plan provided in July 2004 (see item 3.12 above).

To allow sufficient time to carry out analysis, Scottish Water is required to submit its draft investment programme to the Reporter some eight weeks prior to submission of the Business Plan to the Commissioner.

The draft programme represents Scottish Water's initial view of the required investment programme and, as such, is likely to be subject to change. Consequently, the programme will not be published at this stage. It is our intention to publish the finalised capital programme before we publish advice on/determination of prices in June 2005.

5.2 Letter outlining initial views on regulatory accounting tables (2003-04)

See item 4.6. This is our response to Scottish Water on the draft regulatory accounting tables submitted by Scottish Water on 18 August.

5.3 Workshop on completion of regulatory accounting tables (2003-04)

The purpose of this workshop is for Scottish Water and this Office to review the comments raised on the regulatory accounting tables (item 5.2) and to agree a format for submission of the regulatory accounts as part of the 1st draft Business Plan (item 6.5).

5.4 Publication of methodology for calculation of prices for the Strategic Review of Charges 2006-10

We propose to publish five documents about our proposed methodology for the *Strategic Review of Charges 2006-10*.

The first four of these publications outline how we intend to prepare the 2006-10 Strategic Review of Charges. The four areas covered are:

- work-plan;
- the regulatory framework in Scotland and lessons learned;
- the calculation of prices; and
- the scope for efficiency.

The fifth document is a summary of the first four.

We welcome comments from stakeholders about the content of these publications. The deadline for such comments is 29 October 2004.

5.5 MSP briefing

This will provide the Commissioner with an opportunity to update MSPs on the progress of the Strategic Review of Charges and to hear their views and concerns.

This will be the first of a series of three briefings to be held at appropriate points during the Strategic Review process.

5.6 WIC 25: RAB (resource accounting and budgeting) submission for August 2004

The 'RAB return' financial submissions are made on a monthly basis by Scottish Water. They comprise:

- the main financial statements;
- a summary analysis of fixed assets;
- income analysis (split by water and waste water);

- analysis of operating costs; and
- an audit trail of revisions to budget forecasts submitted at the start of the year.

It is important for us to be able to monitor the financial position of Scottish Water throughout the financial year. It provides visibility on key financial trends and movements in operating costs. Using this information we can report on Scottish Water's progress in achieving its financial targets.

5.7 Scheme of charges – submission due from Scottish Water

Scottish Water submits its proposed charges scheme for the next financial year (2005-06) in a scheme of charges for approval by this Office. We will approve the scheme of charges if we determine that Scottish Water's proposed charges are fair and consistent and that they follow the advice approved by Ministers following the Strategic Review of October 2001. We view the scheme of charges as an integral part of the regulatory process, providing an opportunity to ensure that fair and reasonable charges are being made to all customers.

5.8 Publication of methodology for assessing the scope for efficiency for the Strategic Review of Charges 2006-10

We propose to publish five documents about our proposed methodology for the *Strategic Review of Charges 2006-10*.

The first four of these publications outline how we intend to prepare the 2006-10 Strategic Review of Charges. The four areas covered are:

- work-plan;
- the regulatory framework in Scotland and lessons learned;
- the calculation of prices; and
- the scope for efficiency.

The fifth document is a summary of the first four.

We welcome comments from stakeholders about the content of these publications. The deadline for such comments is 29 October 2004.

5.9 Publication of Summary of Methodology for the Strategic Review of Charges 2006-10

This is the Summary of Methodology document described in the item above. It outlines the key information presented in the four volumes of the methodology (items 3.10, 4.4, 5.4, 5.8). The consultation questions in each of the volumes are also summarised.

The final date for responses to these consultations is 29 October 2004.

5.10 Publication of draft financial model and draft manual

See item 2.1. We publish the draft financial model for the Strategic Review of Charges and the associated draft manual, which will explain the workings of the model. These documents will also appear on our website. A licensed copy of Microsoft Excel© will be required to run the model.

6. October 2004

6.1 Stakeholder information day

This will be the third in a series of information days for stakeholders, which will be held approximately every six weeks throughout the Strategic Review process. The main aims of these workshops are to inform stakeholders about the process of the Strategic Review of Charges, and to seek input where appropriate. The proposed initial list of invitees is given in Chapter 5, Section 5.6.2.

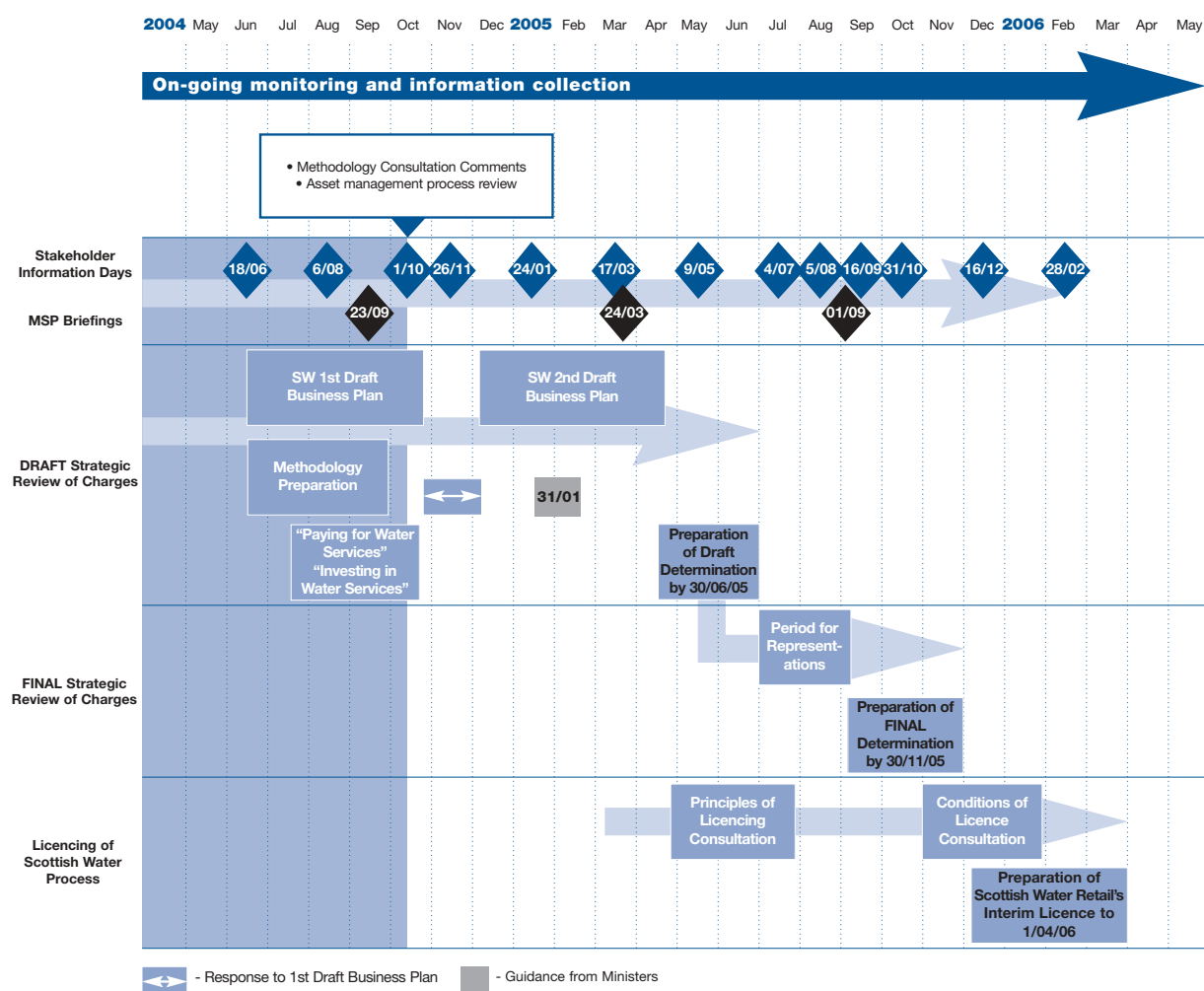
These workshops will play an important role in ensuring the transparency of the Strategic Review process and will provide stakeholders with an opportunity to input to the Strategic Review. We would therefore encourage stakeholders to participate as fully as possible.

At this stage in the process the key areas for discussion will include:

- comments received on the methodology consultations in September 2004 (items 5.4 & 5.8);
- the asset management process review which is initiated on 1 October 2004 (item 6.2).

The following figure illustrates progress in our overall work-plan at the time of the third stakeholder information day.

Figure 6.4: Progress in the preparation of the Strategic Review of Charges 2006-10



6.2 Asset management process review initiated

This assessment of Scottish Water's asset management processes will build on similar work carried out for the previous Strategic Review of Charges in 2001. The findings from the assessment will help inform the scope for capital efficiency in Scottish Water's investment proposals. In particular, it will help identify the scope for efficiencies associated with improved strategic asset management and improved programme planning and appraisal.

The assessment will be based on a comparison against industry best practice. In particular, the assessment will compare Scottish Water's approach to asset management with that of other utility providers, including, but not restricted to, the water companies in England and Wales.

The proposal is to engage the services of specialists in the field of asset management to carry out this independent assessment of Scottish Water's asset management processes.

6.3 WIC 25: RAB (resource accounting and budgeting) submission for September 2004

The 'RAB return' financial submissions are made on a monthly basis by Scottish Water. They comprise

- the main financial statements;
- a summary analysis of fixed assets;
- income analysis (split by water and waste water);
- analysis of operating costs; and
- an audit trail of revisions to budget forecasts submitted at the start of the year.

It is important for us to be able to monitor the financial position of Scottish Water throughout the financial year. It provides visibility on key financial trends and movements in operating costs. Using this information we can report on Scottish Water's progress in achieving its financial targets.

This submission is to include Scottish Water's interim accounts for 2004-05.

6.4 Scottish Water submits 1st draft Business Plan

See item 2.11. This is the deadline for Scottish Water to submit its 1st draft Business Plan, in accordance with the guidance issued to it previously (item 2.11).

6.5 Resubmission of regulatory accounts (2003-04) as part of the 1st draft Business Plan

See items 4.6, 5.2 and 5.3. Following on from the initial submission of completed draft regulatory accounting tables, Scottish Water will resubmit these in the agreed format as part of the 1st draft Business Plan.

6.6 Baseline investment programme for Quality & Standards III (draft programme)

This is the submission by Scottish Water to the Water Industry Commissioner of the project-level definition of the draft investment programme, as specified in the 1st draft Business Plan guidance of June 2004 (item 2.11). The submission will be consistent with the draft programme provided to the Reporter under item 5.1 above.

The draft programme represents Scottish Water's initial view of the required investment programme and, as such, is likely to be subject to change. Consequently, the programme will not be published at this stage. It is our intention to publish the finalised capital programme at the end of the Strategic Review process.

6.7 Close of methodology consultations

We published five documents about our proposed methodology for the *Strategic Review of Charges 2006-10*.

The first four of these publications outline how we intend to prepare the 2006-10 Strategic Review of Charges. The four areas covered are:

- work-plan;

- the regulatory framework in Scotland and lessons learned;
- the calculation of prices; and
- the scope for efficiency.

The fifth document is a summary of the first four.

7. November 2004

7.1 Capital Investment Return: Quarter 2 - 2004-05 submission

The purpose of the quarterly CIR submission is to monitor progress, at a project level, in the delivery of Scottish Water's capital investment programme. It contains information on:

- forecast and actual project spend;
- physical progress towards defined milestones; and
- explanations of financial variances.

Through a combination of the quarterly CIRs and the investment tables in the Annual Return, we can track delivery of the investment programme and monitor the effectiveness and efficiency of Scottish Water in delivering the required investment. The CIR can also highlight material changes from the planned investment programme. These may be positive (efficiencies or early delivery of a project) or negative (cost overruns or project delays).

7.2 WIC 1/9/14/22: Non-domestic customer revenue information (Quarter 2 – 2004-05)

These submissions, which are made by Scottish Water twice a year, are intended to capture a wide variety of information in relation to non-domestic customers and domestic customers with water meters. The information covered in the submissions includes:

- customer revenue information;

- consumption (for metered customers);
- rateable value used for unmeasured services (water, waste water and drainage services);
- debt analysis;
- special agreements for large customers; and
- meter information (e.g. number of meters, size of meters).

We believe that it is essential for the financial stability of Scottish Water that it has a detailed knowledge of its customer base and the income generated by different customer groups. These submissions are also intended to help our Office and Scottish Water to forecast future trends for customers and to estimate the impact of changes in the level and structure of charges. They can be an invaluable tool in monitoring revenue on an ongoing basis, ensuring that Scottish Water's customer information is consistent with its declared revenues and with the revenue cap set by the Minister.

At present, the information being provided by Scottish Water in these submissions is not as complete or as robust as we would like. We are working with Scottish Water to improve the quality of the information provided and hence the ability to forecast accurately the impact of tariff changes.

7.3 WIC 4: Domestic customer revenue information (Quarter 2 – 2004-05)

The WIC 4 report is the equivalent of the WIC 1/9/14/22 information, but for households without water meters, and its purpose is also very similar. The information requested allows us to monitor revenue from households and to understand issues such as affordability and ease of collection.

The information requested includes the number of households billed and the number receiving discounts, along with outstanding debt analysis, all split by Council Tax band and by local authority area. Because unmetered households are billed on Scottish Water's

behalf by the local authorities, Scottish Water sources this information from the local authorities.

This information, which is submitted by Scottish Water twice a year, allows us to monitor debt on an on-going basis. It can also provide an indicator as to whether customer revenues will be consistent with the revenue cap endorsed by the Minister.

7.4 WIC 5: Customer service performance return (Quarter 2 – 2004-05)

The 'WIC 5' customer service performance return is submitted quarterly by Scottish Water to our Office. It enables us to monitor Scottish Water's customer service performance and check compliance with the guaranteed minimum standards of service.

It covers:

- number of written contacts;
- number of telephone contacts;
- number of enquiries and speed of response;
- number of complaints and speed of response;
- number of telephone calls received, answering speed and number abandoned;
- number of planned interruptions and response time;
- number of unplanned interruptions and response time;
- septic tank emptying;
- number of sewer flooding incidents;
- keeping appointments; and
- GMS payments made.

This information allows us to monitor customer service performance between Annual Returns. It enables us to spot trends and seasonal variations and provides supporting information when we examine particular customer service issues.

7.5 Workshop on detail of Business Plan (definitional & clarification issues)

This is a working level meeting between this Office and Scottish Water to identify issues arising from the 1st draft Business Plan.

7.6 Revised regulatory accounting and transfer pricing tables (2003-04)

We issue revised tables for 2003-04 to Scottish Water covering regulatory accounting and transfer pricing.

7.7 Copy of methodology response to Scottish Water & Scottish Executive

A copy of our response to the methodology consultation will be provided to Scottish Water and the Scottish Executive ahead of publication. This is in accordance with our normal procedure for publications.

7.8 Methodology response published

Our response to the methodology consultation (item 6.7) is published, along with a synopsis of the responses received to the consultation. This document will be available on our website.

7.9 Reporter's final report on capital programme contained in Scottish Water's draft Business Plan.

See item 5.1. This is the submission by the Reporter to this Office of his audit report on the capital investment programme contained in Scottish Water's first draft Business Plan.

7.10 Summary of Reporter's view to Scottish Executive

We provide the Reporter's audit report (see item 5.1) on the draft capital investment programme to the Scottish Executive.

7.11 Scottish Water Board presentation on key strategic issues

This meeting between the Commissioner and representatives of the Scottish Water Board is the opportunity for the Scottish Water Board to make high-level representations on issues arising from its 1st draft Business Plan. As such, it represents a key interaction between the Regulator and the regulated company.

We would expect the Scottish Water Board to make full use of the opportunity to present supporting evidence to the Commissioner on the strategic vision for the company which is outlined in their 1st draft Business Plan. The meeting will be restricted to 3 hours.

7.12 Quarterly meeting with Scottish Executive

The purpose of this quarterly meeting is to ensure that the Scottish Executive is kept fully up to date with the progress of the *Strategic Review of Charges 2006-10*. It is an opportunity for a focused discussion about issues raised within the Strategic Review process.

7.13 Publication of high-level summary of Scottish Water's 1st draft Business Plan

We provide a summary of the key elements of Scottish Water's 1st draft Business Plan. This document will also be available on our website.

7.14 WIC 25: RAB (resource accounting and budgeting) submission for October 2004

The 'RAB return' financial submissions are made on a monthly basis by Scottish Water. They comprise:

- the main financial statements;
- a summary analysis of fixed assets;
- income analysis (split by water and waste water);
- analysis of operating costs; and
- an audit trail of revisions to budget forecasts submitted at the start of the year.

It is important for us to be able to monitor the financial position of Scottish Water throughout the financial year. It provides visibility on key financial trends and movements in operating costs. Using this information we can report on Scottish Water's progress in achieving its financial targets.

7.15 Stakeholder information day

This will be the fourth in a series of information days for stakeholders, which will be held approximately every six weeks throughout the Strategic Review process. The main aims of these workshops are to inform stakeholders about the process of the Strategic Review of Charges, and to seek input where appropriate. The proposed initial list of invitees is given in Chapter 5, Section 5.6.2.

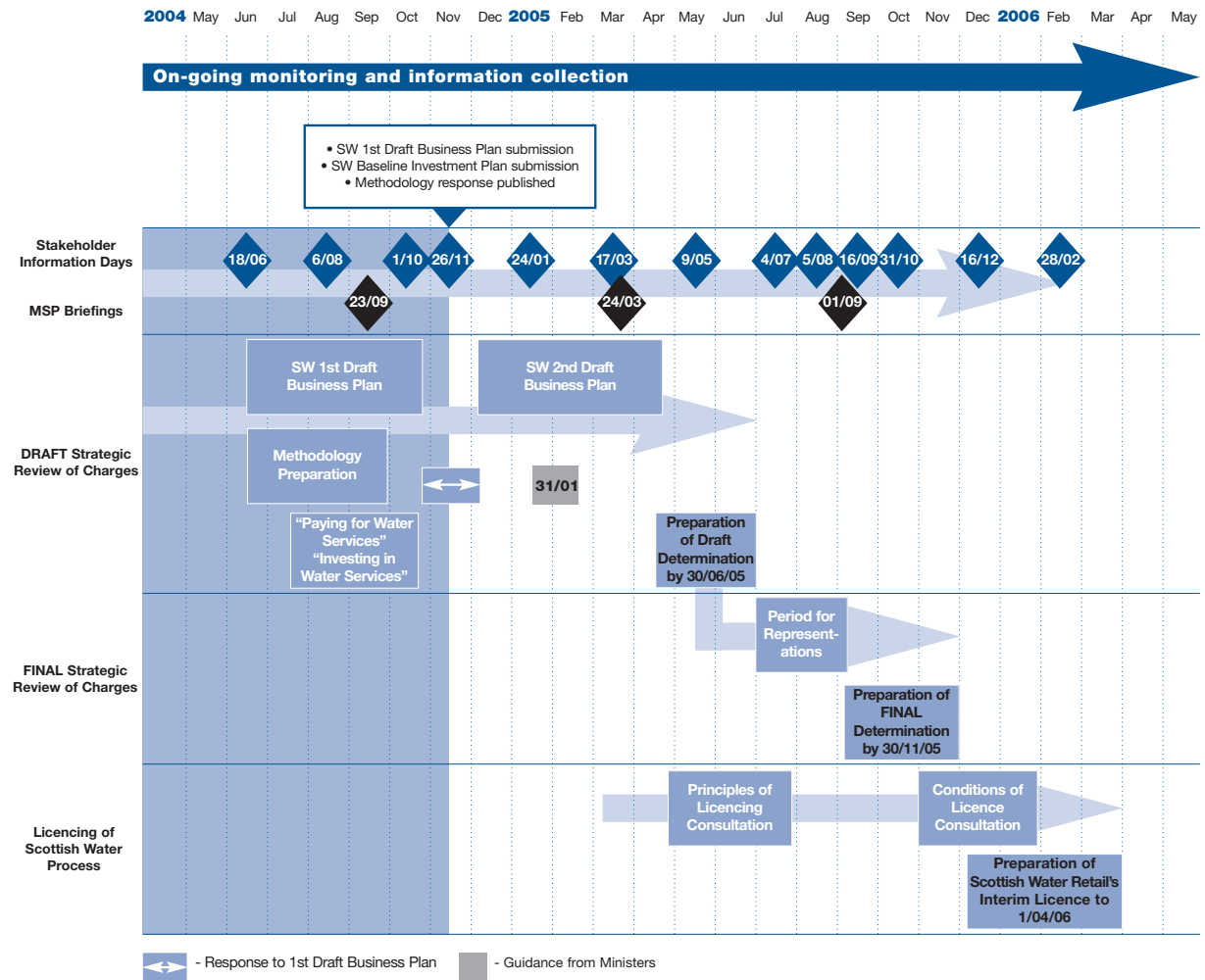
These workshops will play an important part in ensuring the transparency of the Strategic Review process and will provide stakeholders with an opportunity to input to the Strategic Review. We would therefore encourage stakeholders to participate as fully as possible.

At this stage in the process the key areas for discussion will include:

- Scottish Water's 1st draft Business Plan submission on 29 October 2004 (items 6.4 and 7.13);
- Scottish Water's baseline investment plan submission on 29 October 2004 (item 6.6); and
- the methodology response published on 19 November 2004 (item 7.8).

The following figure illustrates progress in our overall work-plan at the time of the fourth stakeholder information day.

Figure 6.5: Progress in the preparation of the Strategic Review of Charges 2006-10



8. December 2004

8.1 WICS response to Scottish Water’s 1st draft Business Plan and its implications for customers

We publish our comments on Scottish Water's 1st draft Business Plan, issues arising, and implications for customers.

8.2 WICS writes to Scottish Water on the cost of capital and plans for treating embedded debt

We provide Scottish Water with detailed proposals for the calculation of allowed cost of capital and the treatment of embedded debt.

8.3 Publication of guidance for 2nd draft Business Plan

The guidance from this Office to Scottish Water on the completion of the 2nd draft Business Plan will be similar to the guidance on the 1st draft (item 2.11). The main difference will relate to regulatory accounts.

8.4 Scottish Water to submit initial issues regarding WICS guidance for the 2nd draft Business Plan.

This is an opportunity for Scottish Water to seek clarifications on the 2nd draft Business Plan guidance and to communicate any concerns relating to its completion of the Business Plan that may arise.

8.5 WIC 19: Investment appraisal audits

These audits, carried out by this Office, form an important part of assessing the effectiveness of investment decision-making by Scottish Water. In particular, they assess Scottish Water's relative position compared with previous audits and in relation to industry best practice. The projects audited are selected at random (a mix of large, small, in progress and completed) and the assessment involves a review of documentation and structured interviews with project staff.

8.6 Half yearly meeting with Water Customer Consultation Panels (WCCPs)

At these regular meetings, the Commissioner and the WCCPs update one another on key activities, customer-related issues and areas of joint concern. During the Strategic Review process, the meetings will provide the Commissioner with the opportunity to update the WCCPs on progress with the Strategic Review and to seek feedback on customer issues and concerns.

8.7 Workshop on 2nd draft Business Plan guidance

This is an opportunity for Scottish Water and this Office to deal with any concerns raised by Scottish Water on 14/12/04 (item 8.4).

8.8 Guidance to Reporter on 2nd draft Business Plan

We issue guidance to the Reporter on the material issues on which he should focus during his audit of the 2nd draft Business Plan, due for submission in April 2005 (item 12.1). The areas for auditing are likely to include the following:

- Auditing the quality of information that underpins the Business Plan;
- Addressing and highlighting areas of material concern or inconsistency within the plan;
- Auditing the plan's compliance with the guidance issued by this Office – this will relate both to the form and content of the plan;

- Commenting on the preparedness of Scottish Water to address its business strategy in the next Strategic Review period; and
- Auditing the investment programme for its consistency with the Ministerial Guidance. In particular, we will seek the view of the Reporter on the costing of the programme, its scope and any areas of overlap.

8.9 Resubmission of regulatory accounts and transfer pricing tables (2003-04) by Scottish Water

This is the deadline (22/12/04) by which Scottish Water is required to resubmit its regulatory accounting tables for 2003-04.

8.10 WICS draft corporate plan & budget to Scottish Executive

Our draft corporate plan and proposed budget for running this Office is sent to the Scottish Executive for approval. The corporate plan covers the planned activities of the Commissioner and his Office for the three-year period from April 2005 to March 2008.

8.11 Scottish Water final issues regarding guidance for 2nd draft Business Plan

This is an opportunity for Scottish Water to raise any final issues regarding the guidance for the 2nd draft Business Plan, prior to us issuing final clarifications on 10/01/05 (item 9.1).

8.12 WIC 25: RAB (resource accounting and budgeting) submission for November 04

The 'RAB return' financial submissions are made on a monthly basis by Scottish Water. They comprise:

- the main financial statements;
- a summary analysis of fixed assets;
- income analysis (split by water and waste water);
- analysis of operating costs; and

- an audit trail of revisions to budget forecasts submitted at the start of the year.

It is important for us to be able to monitor the financial position of Scottish Water throughout the financial year. It provides visibility on key financial trends and movements in operating costs. Using this information we can report on Scottish Water's progress in achieving its financial targets.

8.13 WIC 24: Leakage strategy

This submission from Scottish Water provides us with information about its strategic approach to managing leakage. The leakage strategy submission should include information on Scottish Water's progress towards its economic level of leakage, its progress on network metering, its current strategy for increasing the extent of the network where leakage is fully understood and its application of leakage control measures to reduce the cost of the capital programme. See also Chapter 2, Section 2.7.

9. January 2005

9.1 WICS final clarifications/responses on 2nd draft Business Plan guidance

Following the workshop to discuss the 2nd draft Business Plan guidance (item 8.7) and Scottish Water's response on outstanding issues (item 8.11), we issue final clarifications and responses on the issues raised by Scottish Water, ahead of the submission of the 2nd draft Business Plan on 20/04/05 (item 12.1).

9.2 Draft operating expenditure efficiency targets announced

We announce draft efficiency targets for base operating expenditure resulting from our detailed benchmarking and other efficiency analyses. These targets cover the regulatory period 2006-07 to 2009-10. The announcement precedes the workshops on efficiency targets (item 10.6) being held on 21/02/05.

The targets represent our initial view on the level of appropriate efficiency targets for Scottish Water in the next Strategic Review period. These efficiency targets relate to the 'base' element of operating expenditure associated with the costs of running Scottish Water's existing asset base. We will also provide our initial thinking on how we will deal with new operating expenditure associated with new assets.

9.3 Letter to Scottish Water regarding regulatory accounts and transfer pricing tables (2003-04)

We write to Scottish Water regarding the regulatory accounting tables for 2003-04 re-submitted on 22/12/04 (item 8.9) and also final confirmation of forthcoming workshop on 27/01/04 (item 9.5).

9.4 Stakeholder information day

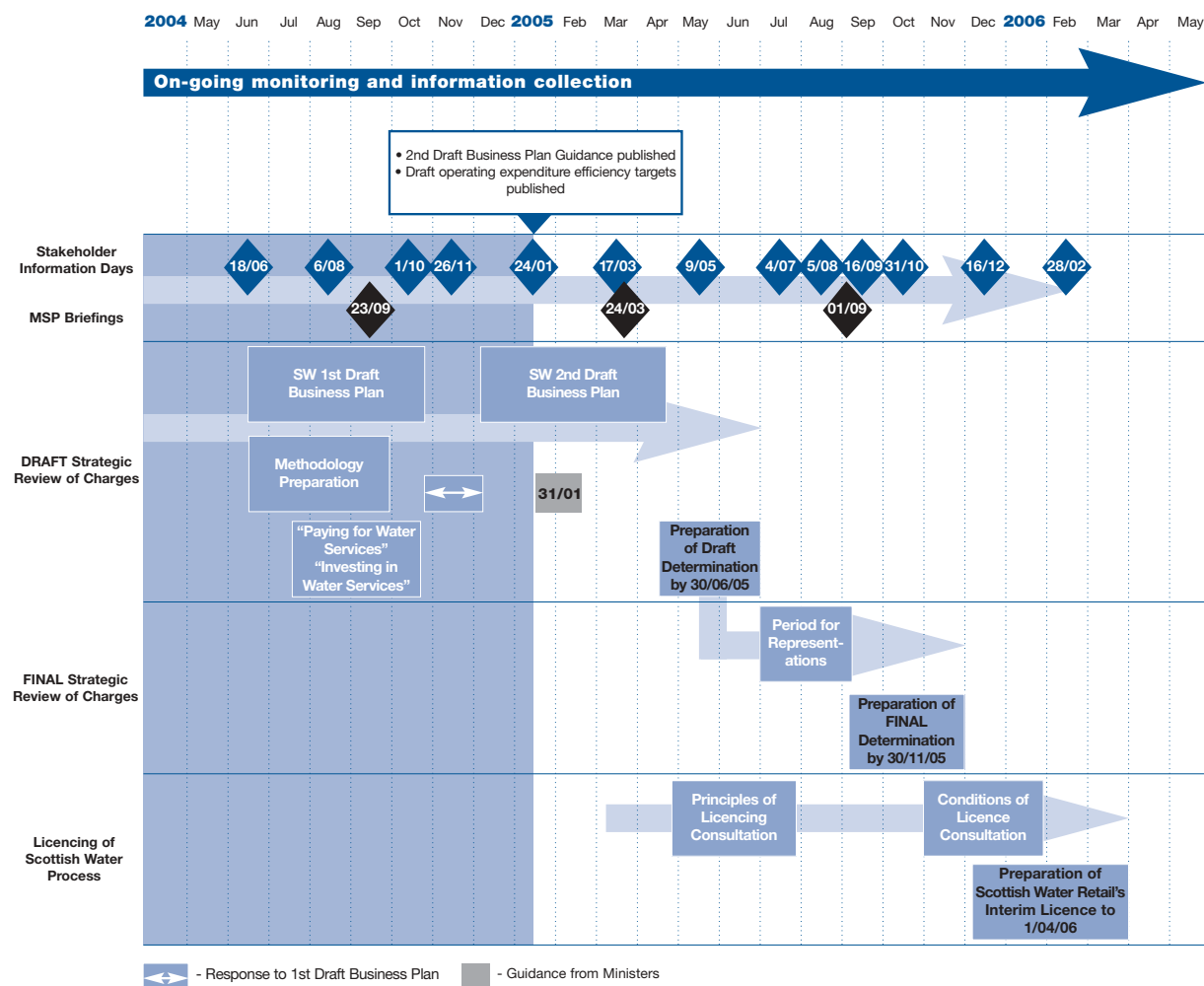
This will be the fifth in a series of information days for stakeholders, which will be held approximately every six weeks throughout the Strategic Review process. The main aims of these workshops are to inform stakeholders about the process of the Strategic Review of Charges, and to seek input where appropriate. The proposed initial list of invitees is given in Chapter 5, Section 5.6.2.

These workshops will play an important role in ensuring the transparency of the Strategic Review process and will provide stakeholders with an opportunity to input to the Strategic Review. We would therefore encourage stakeholders to participate as fully as possible.

At this stage in the process the key areas for discussion will include:

- the guidance for the 2nd draft Business Plan published on 8 December 2004 (item 8.3); and
- the draft operating expenditure efficiency targets announced on 14 January 2005 (item 9.2).

The following figure illustrates progress in our overall work-plan at the time of the fifth stakeholder information day.

Figure 6.6: Progress in the preparation of the Strategic Review of Charges 2006-10

9.5 Workshop on regulatory accounts and transfer pricing tables

We hold a workshop for Scottish Water on the regulatory accounts, to identify and resolve any outstanding issues arising during the prior process.

9.6 WIC 25: RAB (resource accounting and budgeting) submission for December 2004.

The 'RAB return' financial submissions are made on a monthly basis by Scottish Water. They comprise:

- the main financial statements;

- a summary analysis of fixed assets;
- income analysis (split by water and waste water);
- analysis of operating costs; and
- an audit trail of revisions to budget forecasts submitted at the start of the year.

It is important for us to be able to monitor the financial position of Scottish Water throughout the financial year. It provides visibility on key financial trends and movements in operating costs. Using this information we can report on Scottish Water's progress in achieving its financial targets.

9.7 Detailed Guidance from Ministers

This is the detailed Guidance given to us by the Scottish Ministers with regard to the objectives and standards that they require Scottish Water to achieve during the Strategic Review period. The Guidance is likely to include the following:

- Borrowing – the charge limits set at the Strategic Review of Charges should reflect decisions on borrowing levels for 2006-08, and assumptions on borrowing levels for 2008-10;
- Details of the public policy considerations that we should take into account in the Strategic Review. This would include the detailed objectives for Scottish Water during the Strategic Review period; and
- The principles that the Scottish Ministers require the Commissioner to apply in setting charge limits. In the light of the response to the Principles of Charging consultation by the Scottish Executive (item 3.9), the Scottish Minister will set out the principles that we must apply in setting charge limits for different customer groups.

10. February 2005

10.1 Capital Investment Return: Quarter 3 - 2004-05 submission

The purpose of the quarterly CIR submission is to monitor progress, at a project level, in the delivery of Scottish Water's capital investment programme. It contains information on:

- forecast and actual project spend;
- physical progress towards defined milestones; and
- explanations of financial variances.

Through a combination of the quarterly CIRs and the investment tables in the Annual Return, we can track

delivery of the investment programme and monitor the effectiveness and efficiency of Scottish Water in delivering the required investment. The CIR can also highlight material changes from the planned investment programme. These may be positive (efficiencies or early delivery of a project) or negative (cost overruns or project delays).

10.2 Draft capital expenditure efficiency targets published

We announce draft capital expenditure efficiency targets for Scottish Water for the regulatory period 2006-07 to 2009-10.

The targets represent our initial view, based on benchmarking and efficiency analyses, of the appropriate capital expenditure efficiency targets that should be met by Scottish Water in the next regulatory period.

10.3 Tri-partite workshop on implications of Ministerial Guidance

WICS, Scottish Water and the Scottish Executive will participate in a joint workshop to discuss the Ministerial Guidance issued in January 2005 (see item 9.7). The main aims are to identify the principal themes and issues that will impact upon the *Strategic Review of Charges 2006-10*.

10.4 Stakeholder workshop on implications of Ministerial Guidance

This will be an opportunity for stakeholders (other than those listed under the above item) to discuss the implications of the Ministerial Guidance issued in January 2005. As well as providing information to stakeholders on the impact the Guidance will have on the *Strategic Review of Charges 2006-10*, we will be seeking stakeholder views to inform our response to the Guidance. We will publish our response to the Ministerial Guidance at the end of February 2005 (item 10.10).

10.5 WIC 5: Customer service performance return (Quarter 3 – 2004-05)

The 'WIC 5' customer service performance return is submitted quarterly by Scottish Water to our Office. It enables us to monitor Scottish Water's customer service performance and check compliance with the guaranteed minimum standards of service.

It covers:

- number of written contacts;
- number of telephone contacts;
- number of enquiries and speed of response;
- number of complaints and speed of response;
- number of telephone calls received, answering speed and number abandoned;
- number of planned interruptions and response time;
- number of unplanned interruptions and response time;
- septic tank emptying;
- number of sewer flooding incidents;
- keeping appointments; and
- GMS payments made.

This information allows us to monitor customer service performance between Annual Returns. It enables us to spot trends and seasonal variations and provides supporting information when we examine particular customer service issues.

10.6 Workshop on efficiency targets

We host a workshop for Scottish Water to discuss the efficiency targets that will underpin the Strategic Review of Charges. We will outline the factors that we have taken into account in arriving at the targets.

10.7 Final version of capital programme to be submitted to the Reporter for audit

Scottish Water provides the Reporter with its final capital investment programme for auditing. This investment programme should be fully consistent with the Ministerial Guidance. As with the draft programme submission (see item 5.1 above), the capital investment programme needs to be defined at a project level. For each project, information is required on forecast costs for the specified period, categorisation of the expenditure and the outputs to be delivered. The format for the capital programme reporting will be specified in the 2nd draft Business Plan guidance (see item 8.3).

The Reporter's audit of the investment programme is carried out in accordance with the guidance for audit of the business plan provided in December 2004 (see item 8.8 above).

10.8 Quarterly meeting with Scottish Executive

The purpose of this quarterly meeting is to ensure that the Scottish Executive is kept fully up to date with the progress of the *Strategic Review of Charges 2006-10*. It is an opportunity for a focused discussion about issues raised within the Strategic Review process.

10.9 WIC 25: RAB (resource accounting and budgeting) submission for January 2005

The 'RAB return' financial submissions are made on a monthly basis by Scottish Water. They comprise:

- the main financial statements;
- a summary analysis of fixed assets;
- income analysis (split by water and waste water);
- analysis of operating costs; and
- an audit trail of revisions to budget forecasts submitted at the start of the year.

It is important for us to be able to monitor the financial

position of Scottish Water throughout the financial year. It provides visibility on key financial trends and movements in operating costs. Using this information we can report on Scottish Water's progress in achieving its financial targets.

10.10 WICS response to principal Guidance from Ministers is published

We publish a response to the principal Ministerial Guidance that we are scheduled to receive at the end of January 2005 (item 9.7).

11. March 2005

11.1 Stakeholder information day

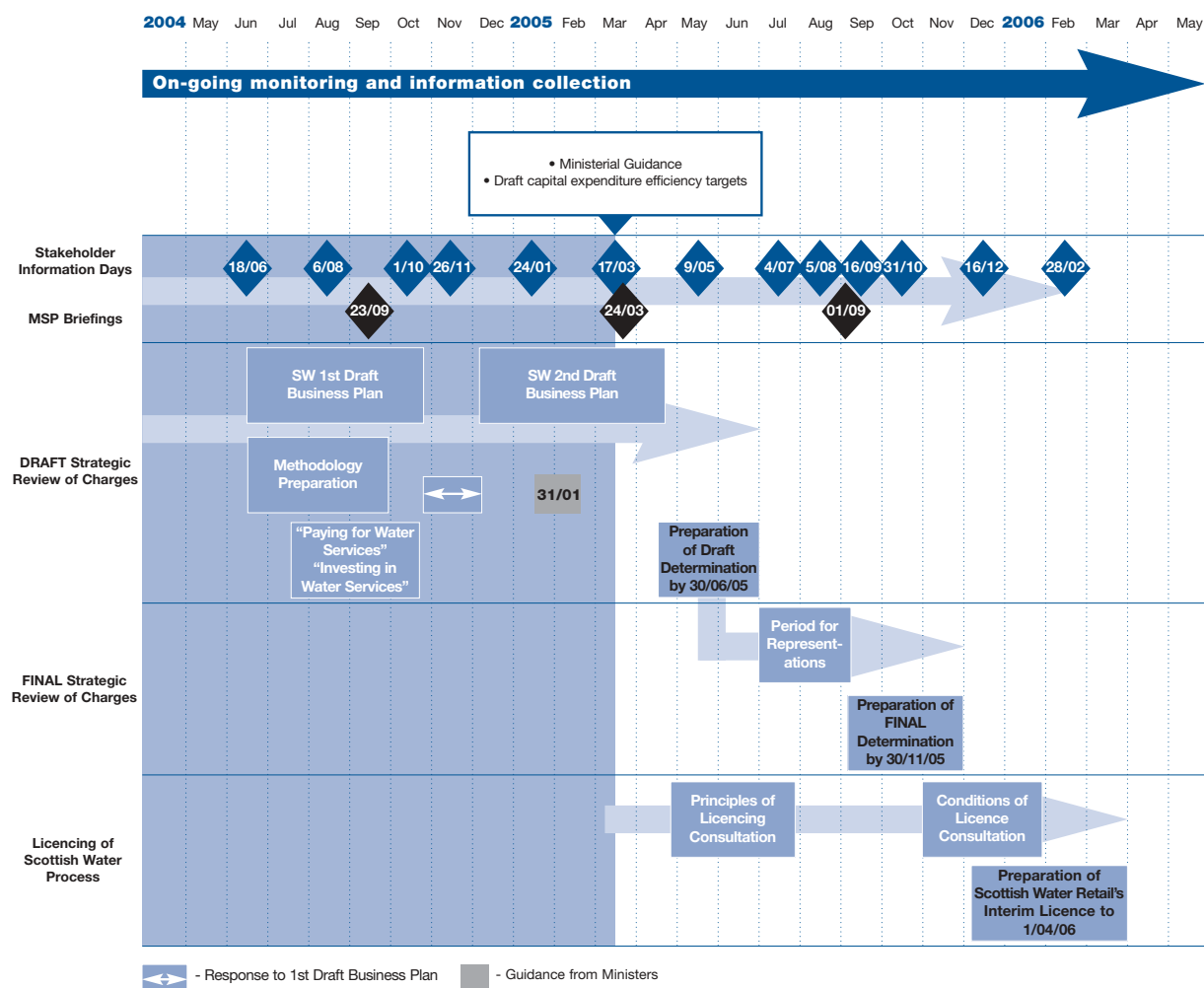
This will be the sixth in a series of information days for stakeholders, which will be held approximately every six weeks throughout the Strategic Review process. The main aims of these workshops are to inform stakeholders about the process of the Strategic Review of Charges, and to seek input where appropriate. The proposed initial list of invitees is given in Chapter 5, Section 5.6.2.

These workshops will play an important role in ensuring the transparency of the Strategic Review process and will provide stakeholders with an opportunity to input to the Strategic Review. We would therefore encourage stakeholders to participate as fully as possible.

At this stage in the process the key areas for discussion will include:

- the Guidance from Ministers issued on 31 January 2005 (item 9.7); and
- the draft capital expenditure efficiency targets published on 2 February 2005 (item 10.2).

The following figure illustrates progress in our overall work-plan at the time of the sixth stakeholder information day.

Figure 6.7: Progress in the preparation of the Strategic Review of Charges 2006-10

11.2 MSP briefing

This will provide the Commissioner with an opportunity to update MSPs on the progress of the Strategic Review of Charges and to hear their views and concerns.

This will be the second of a series of three briefings to be held at appropriate points during the Strategic Review process.

11.3 WIC 25: RAB (resource accounting and budgeting) submission for February 2005

The 'RAB return' financial submissions are made on a monthly basis by Scottish Water. They comprise:

- the main financial statements;
- a summary analysis of fixed assets;
- income analysis (split by water and waste water);
- analysis of operating costs; and
- an audit trail of revisions to budget forecasts submitted at the start of the year.

It is important for us to be able to monitor the financial position of Scottish Water throughout the financial year. It provides visibility on key financial trends and movements in operating costs. Using this information we can report on Scottish Water's progress in achieving its financial targets.

11.4 WIC XX²⁰: Annual Return 2004-05 guidance issued

This letter from the Commissioner to Scottish Water outlines our detailed requirements for the 2004-05 Annual Return.

This is our single largest information request; it is issued to Scottish Water in April of each year, for completion by the end of June. The Return collects information on all aspects of Scottish Water's business and is used by this Office to:

- calculate efficiency targets;
- monitor expenditure;
- reconcile movements in costs;
- assess levels of service to customers;
- track investment programmes;
- assess compliance with environmental and drinking water standards; and
- compare Scottish Water's performance against that of the English and Welsh companies.

This Annual Return is particularly important as it will underpin the charge limits set by the final determination/advice in November 2005.

11.5 WIC XX²¹: Regulatory accounting and transfer pricing tables 2004-05 guidance issued

We will issue guidance to Scottish Water on the regulatory accounting and transfer pricing tables for 2004-05. The guidance is likely to ask Scottish Water to:

- identify core and non-core elements of Scottish Water's business and to provide separate financial, customer and asset information for these businesses;
- identify separately the retail and wholesale segments of the core business currently performed by Scottish Water and to provide separate reporting frameworks for these businesses; and

- finalise regulatory accounting guidelines such that we can analyse and regulate the retail and wholesale segments of the water industry in Scotland.

The identification of core costs is an important feature of the *Strategic Review of Charges 2006-10*. The Strategic Review will focus principally on the core activities of Scottish Water in providing water and sewerage services to customers in Scotland. This will help ensure that customers are paying only for the elements of Scottish Water's business that contribute to the provision of their water and waste water services. This change reflects the requirements of the Water Industry (Scotland) Act 2002, which restricts our role to promoting the interests of customers of the core business.

Similarly, the requirement to identify costs associated with the retail and wholesale elements of the business reflects the requirements outlined in the draft Water Services etc (Scotland) Bill, which proposes the introduction of competition to the provision of non-domestic water services in Scotland. The separate identification of retail and wholesale costs will help ensure that customers benefit to the greatest extent possible from the proposed changes. We will also regulate Scottish Water's non-core retail operation until a competitive market is properly developed.

12. April 2005

12.1 Scottish Water submits 2nd draft Business Plan

Deadline for Scottish Water to submit its 2nd draft Business Plan, following on from the guidance issued to it previously (item 9.1, 10/01/05).

12.2 WIC 25: RAB (resource accounting and budgeting) submission for March 2005

The 'RAB return' financial submissions are made on a monthly basis by Scottish Water. They comprise:

- the main financial statements;

²⁰ WIC number to be assigned on issue.

²¹ WIC number to be assigned on issue.

- a summary analysis of fixed assets;
- income analysis (split by water and waste water);
- analysis of operating costs; and
- an audit trail of revisions to budget forecasts submitted at the start of the year.

It is important for us to be able to monitor the financial position of Scottish Water throughout the financial year. It provides visibility on key financial trends and movements in operating costs. Using this information allows us to report on Scottish Water's progress in achieving its financial targets.

12.3 Launch of initial consultation on licensing

The Water Industry (Scotland) Bill sets out proposals for the introduction of non-household retail competition into the Scottish water industry. Subject to the Bill receiving Royal Assent, the Commissioner/Commission will play a key role in developing and administering a process to award licences to those who wish to operate in the new market.

This initial consultation is intended to invite comment on the core principles by which the licensing process will operate. It will be followed by a second consultation in October 2005 (item 18.2), which will translate these principles into proposals for licence conditions.

12.4 Financial model finalised and published

See item 2.1. The audit of the financial model is carried out for us by an independent auditor. This auditor will be selected after a tender process.

13. May 2005

13.1 Capital Investment Return: Quarter 4 - 2004-05 submission

The purpose of the quarterly CIR submission is to monitor progress, at a project level, in the delivery of Scottish Water's capital investment programme. It

contains information on:

- forecast and actual project spend;
- physical progress towards defined milestones; and
- explanations of financial variances.

Through a combination of the quarterly CIRs and the investment tables in the Annual Return, we can track delivery of the investment programme and monitor the effectiveness and efficiency of Scottish Water in delivering the required investment. The CIR can also highlight material changes from the planned investment programme. These may be positive (efficiencies or early delivery of a project) or negative (cost overruns or project delays).

13.2 Workshop on the detail of Scottish Water's 2nd draft Business Plan (definitional and clarification issues)

This is a working level meeting between our Office and Scottish Water to discuss issues arising from the 2nd draft Business Plan.

This 2nd version of the Business Plan is critical to the Strategic Review process as it will inform our draft advice on or determination of charges.

13.3 Stakeholder information day

This will be the seventh in a series of information days for stakeholders, which will be held approximately every six weeks throughout the Strategic Review process. The main aims of these workshops are to inform stakeholders about the process of the Strategic Review of Charges, and to seek input where appropriate. The proposed initial list of invitees is given in Chapter 5, Section 5.6.2.

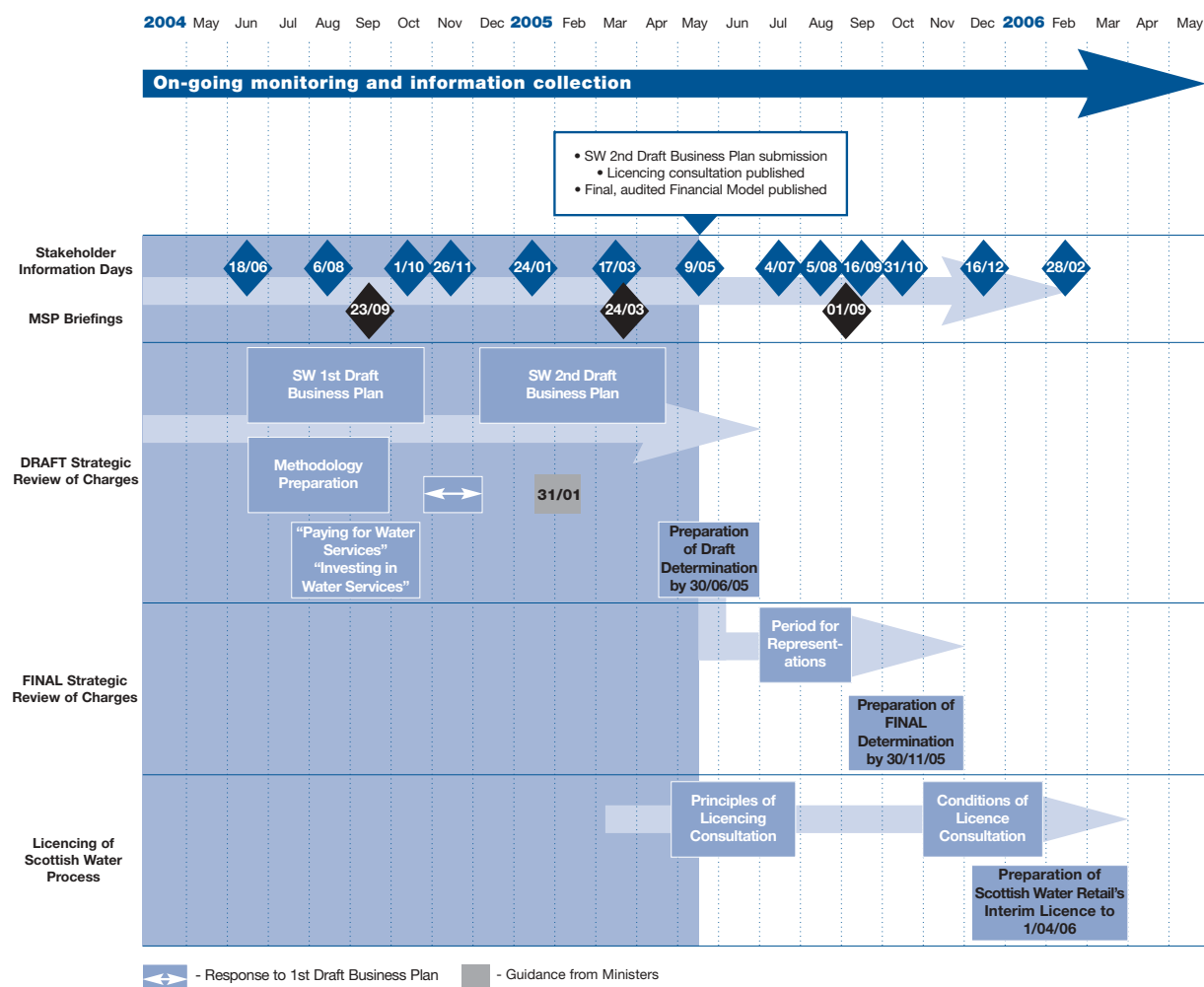
These workshops will play an important role in ensuring the transparency of the Strategic Review process. They will provide stakeholders with an opportunity to input to the Strategic Review. We would therefore encourage stakeholders to participate as fully as possible.

At this stage in the process the key areas for discussion will include:

- Scottish Water's 2nd Draft Business plan submission on 20 April 2005 (item 12.1);
- the licensing consultation published on 28 April 2005 (item 12.3); and
- the financial model published on 28 April 2005 (item 12.4)

The following figure illustrates progress in our overall work-plan at the time of the seventh stakeholder information day.

Figure 6.8: Progress in the preparation of the Strategic Review of Charges 2006-10



13.4 Scottish Water Board presentation on key strategic issues

This meeting between the Commissioner and representatives of the Scottish Water Board is the opportunity for the Scottish Water Board to make high-level representations on issues arising from its 2nd draft Business Plan.

The 2nd draft Business Plan is critical to the final outcome of the Strategic Review process as it will form the basis of our advice on charges. We would therefore expect the Scottish Water Board to make full use of the opportunity to present supporting evidence to the Commissioner on the strategic vision for the company which is outlined in their 2nd draft Business Plan. The meeting will be restricted to 3 hours.

13.5 WIC 5: Customer service performance return (Quarter 4 – 2004-05)

The 'WIC 5' Customer service performance return is submitted quarterly by Scottish Water to our Office. It enables us to monitor Scottish Water's customer service performance and to check compliance with the guaranteed minimum standards of service.

It covers:

- number of written contacts;
- number of telephone contacts;
- number of enquiries and speed of response;
- number of complaints and speed of response;
- number of telephone calls received, answering speed and number abandoned;
- number of planned interruptions and response time;
- number of unplanned interruptions and response time;
- septic tank emptying;
- number of sewer flooding incidents;

- keeping appointments; and
- GMS payments made.

This information allows us to monitor customer service performance between Annual Returns. It enables us to spot trends and seasonal variations and provides supporting information when we examine particular customer service issues.

13.6 WIC 1/9/14/22: Non-domestic customer revenue information (Quarter 4 – 2004-05)

These submissions, which are made by Scottish Water twice a year, are intended to capture a wide variety of information in relation to non-domestic customers and domestic customers with water meters. The information covered in the submissions includes:

- customer revenue information;
- consumption (for metered customers);
- rateable value used for unmeasured services (water, waste water and drainage services);
- debt analysis;
- special agreements for large customers; and
- meter information (e.g. number of meters, size of meters).

We believe that it is essential for the financial stability of Scottish Water that it has a detailed knowledge of its customer base and the income generated by different customer groups. These submissions are also intended to help our Office and Scottish Water to forecast future trends for customers and to estimate the impact of changes in the level and structure of charges. They can be an invaluable tool in monitoring revenue on an ongoing basis, ensuring that Scottish Water's customer information is consistent with its declared revenues and with the revenue cap set by the Minister.

At present, the information being provided by Scottish Water in these submissions is not as complete or as

robust as we would like. We are working with Scottish Water to improve the quality of the information provided and hence the ability to forecast accurately the impact of tariff changes.

13.7 WIC 4: Domestic customer revenue information (Quarter 4 – 2004-05)

The WIC 4 report is the equivalent of the WIC 1/9/14/22 information, but for households without water meters, and its purpose is also very similar. The information requested allows us to monitor revenue from households and to understand issues such as affordability and ease of collection.

The information requested includes the number of households billed and the number receiving discounts, along with outstanding debt analysis, all split by Council Tax band and by local authority area. Because unmetered households are billed on Scottish Water's behalf by the local authorities, Scottish Water sources this information from the local authorities.

This information, which is submitted by Scottish Water twice a year, allows us to monitor debt on an on-going basis. It can also provide an indicator as to whether customer revenues will be consistent with the revenue cap endorsed by the Minister.

13.8 Publication of Scottish Water's 2nd draft Business Plan

We publish Scottish Water's 2nd draft Business Plan. Given the importance of this document to the final outcome of the Strategic Review process, we will publish the submission in full.

13.9 WIC 25: RAB (resource accounting and budgeting) submission for April 2005

The 'RAB return' financial submissions are made on a monthly basis by Scottish Water. They comprise:

- the main financial statements;
- a summary analysis of fixed assets;

- income analysis (split by water and waste water);
- analysis of operating costs; and
- an audit trail of revisions to budget forecasts submitted at the start of the year.

It is important for us to be able to monitor the financial position of Scottish Water throughout the financial year. It provides visibility on key financial trends and movements in operating costs. Using this information we can report on Scottish Water's progress in achieving its financial targets.

13.10 WICS response to Scottish Water's 2nd draft Business Plan and its implications for customers

We publish our comments on Scottish Water's 2nd draft Business Plan, issues arising, and the implications of the Business Plan for customers.

14. June 2005

14.1 Quarterly meeting with Scottish Executive

The purpose of this quarterly meeting is to ensure that the Scottish Executive is kept fully up to date with the progress of the *Strategic Review of Charges 2006-10*. It is an opportunity for a focused discussion about issues raised within the Strategic Review process.

14.2 Draft Strategic Review of Charges to printers

This is our deadline for the draft 'price limits' document to be supplied to the printers, after final editing has taken place.

14.3 WIC XX²²: Annual Return 2004-05 – submission

This is the deadline for Scottish Water to submit the Annual Return for 2004-05 to our Office.

14.4 WIC XX²³: Regulatory accounting and transfer pricing tables 2004-05 - submission

Submission by Scottish Water of completed regulatory

²² WIC number to be assigned on issue.

²³ WIC number to be assigned on issue.

accounting and transfer pricing tables, as issued at the end of March 2005 (item 11.5).

14.5 WIC 25: RAB (resource accounting and budgeting) submission for May 2005

The 'RAB return' financial submissions are made on a monthly basis by Scottish Water. They comprise:

- the main financial statements;
- a summary analysis of fixed assets;
- income analysis (split by water and waste water);
- analysis of operating costs; and
- an audit trail of revisions to budget forecasts submitted at the start of the year.

It is important for us to be able to monitor the financial position of Scottish Water throughout the financial year. It provides visibility on key financial trends and movements in operating costs. Using this information we can report on Scottish Water's progress in achieving its financial targets.

14.6 Publication of draft *Strategic Review of Charges 2006-10*

This is the deadline for us to publish the draft Strategic Review of Charges document. We will publish this in hard copy form and on our website.

The draft *Strategic Review of Charges 2006-10* contains our initial proposals for Scottish Water's revenue limits for the period and identifies the impact on charges for customers.

15. July 2005

15.1 Half yearly meeting with Water Customer Consultation Panels (WCCPs)

At these regular meetings, the Commissioner and the WCCPs update one another on key activities, customer-

related issues and areas of joint concern. During the Strategic Review process, the meetings will provide the Commissioner with the opportunity to update the WCCPs on progress with the Strategic Review and to seek feedback on customer issues and concerns.

15.2 Stakeholder information day

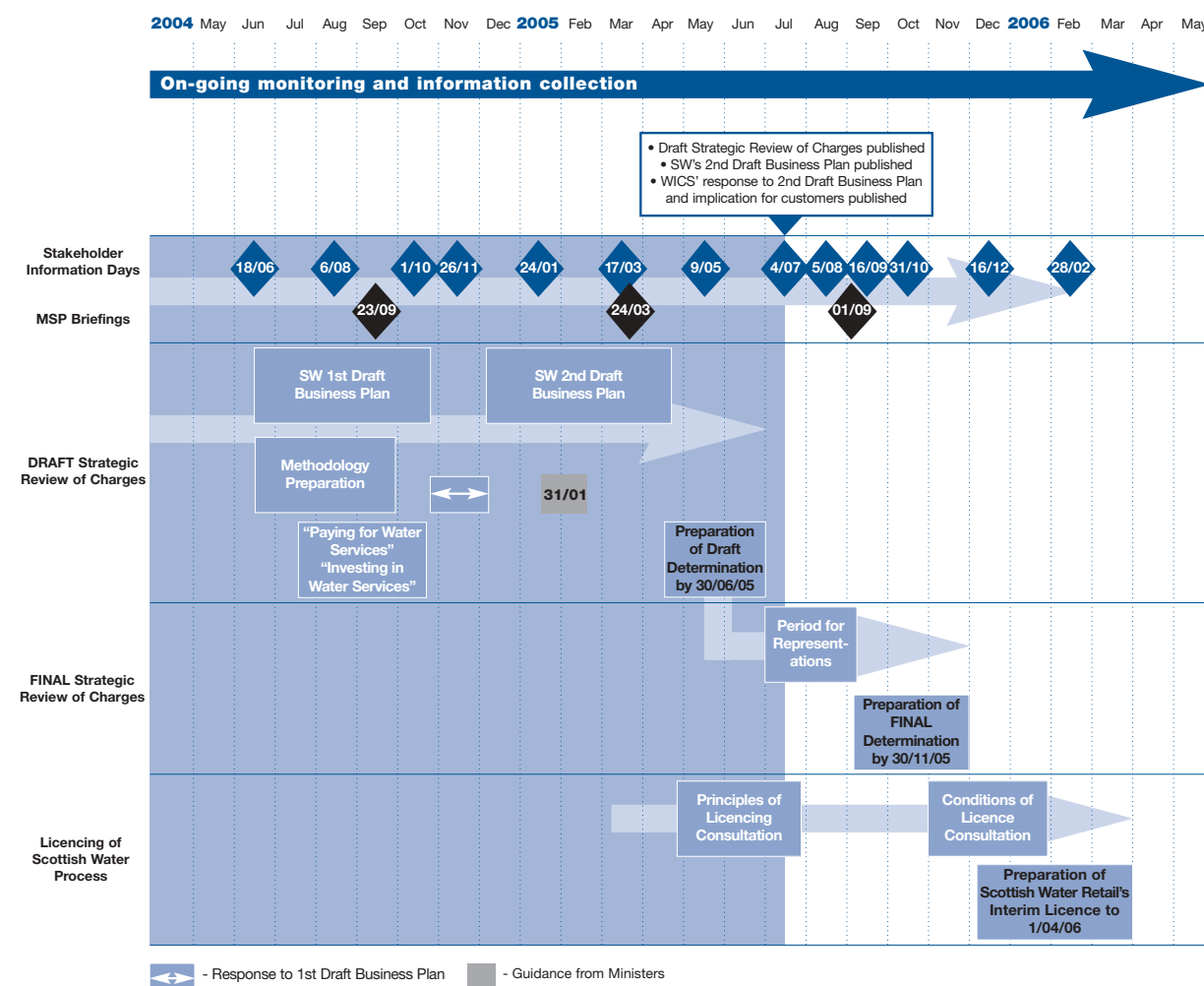
This will be the eighth in a series of information days for stakeholders, which will be held approximately every six weeks throughout the Strategic Review process. The main aims of these workshops are to inform stakeholders about the process of the Strategic Review of Charges, and to seek input where appropriate. The proposed initial list of invitees is given in Chapter 5, Section 5.6.2.

These workshops will play an important role in ensuring transparency of the Strategic Review process and will provide stakeholders with an opportunity to input to the Strategic Review. We would therefore encourage stakeholders to participate as fully as possible.

At this stage in the process the key areas for discussion will include:

- publication of Scottish Water's 2nd draft Business Plan submission on 16 May 2005 (item 13.8);
- our response to the 2nd draft Business Plan and the implications for customers published on 30 May 2005 (item 13.10); and
- the draft Strategic Review of Charges published on 30 June 2005 (item 14.6).

The following figure illustrates progress in our overall work-plan at the time of the eighth stakeholder information day.

Figure 6.9: Progress in the preparation of the Strategic Review of Charges 2006-10

15.3 WIC XX²⁴: Annual Return – 1st round of queries: response due from Scottish Water

This is a follow up to Scottish Water's submission of the 2004-05 Annual Return in June (item 14.3). Both Scottish Water and this Office carry out rigorous checks on the Annual Return information. Given the volume of information, there are inevitably issues that arise during the checking process and this is an opportunity for these to be resolved.

15.4 WIC 25: RAB (resource accounting and budgeting) submission for June 2005

The 'RAB return' financial submissions are made on a monthly basis by Scottish Water. They comprise:

- the main financial statements;

- a summary analysis of fixed assets;
- income analysis (split by water and waste water);
- analysis of operating costs; and
- an audit trail of revisions to budget forecasts submitted at the start of the year.

It is important for us to be able to monitor the financial position of Scottish Water throughout the financial year. It provides visibility on key financial trends and movements in operating costs. Using this information we can report on Scottish Water's progress in achieving its financial targets.

²⁴ WIC number to be assigned on issue.

15.5 Close of initial consultation on licensing

See item 12.3. Following a consultation period of three months, the Commissioner's consultation on the principles governing licensing for the proposed non-household retail market will close. Consultation responses will be analysed and used to inform the Commissioner's second licensing consultation in October 2005 (item 18.2).

These workshops will play an important role in ensuring transparency of the Strategic Review process and will provide stakeholders with an opportunity to input to the Strategic Review. We would therefore encourage stakeholders to participate as fully as possible.

At this stage in the process the main area for discussion will be the draft Strategic Review of Charges published on 30 June 2005 (item 14.6). Representations on the draft Strategic Review are required by 5 September 2005.

16. August 2005

16.1 Capital Investment Return: Quarter 1 – 2005-06 submission

The purpose of the quarterly CIR submission is to monitor progress, at a project level, in the delivery of Scottish Water's capital investment programme. It contains information on:

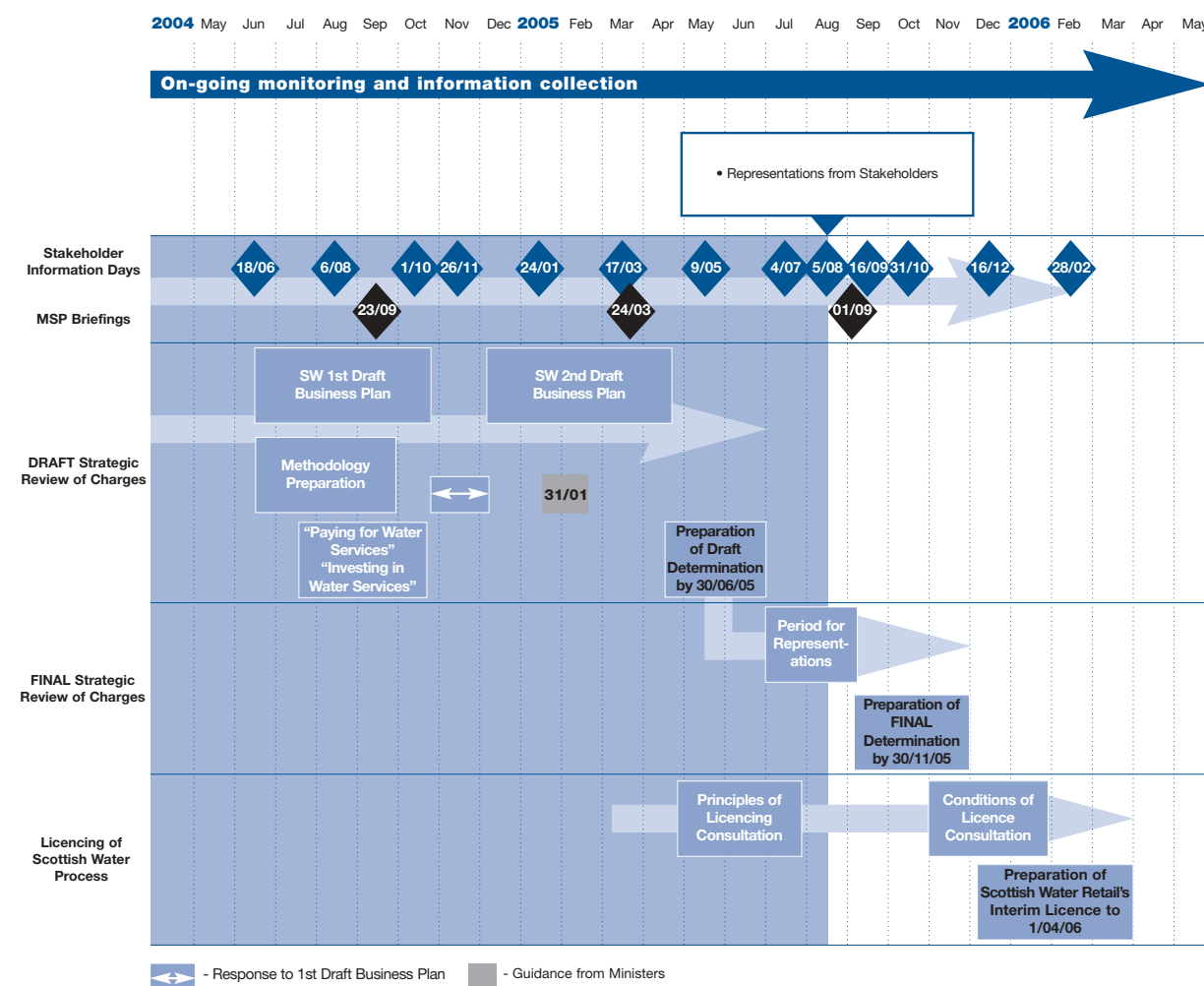
- forecast and actual project spend;
- physical progress towards defined milestones; and
- explanations of financial variances.

The following figure illustrates progress in our overall work-plan at the time of the ninth stakeholder information day.

Through a combination of the quarterly CIRs and the investment tables in the Annual Return, we can track delivery of the investment programme and monitor the effectiveness and efficiency of Scottish Water in delivering the required investment. The CIR can also highlight material changes from the planned investment programme. These may be positive (efficiencies or early delivery of a project) or negative (cost overruns or project delays).

16.2 Stakeholder information day

This will be the ninth in a series of information days for stakeholders, which will be held approximately every six weeks throughout the Strategic Review process. The main aims of these workshops are to inform stakeholders about the process of the Strategic Review of Charges, and to seek input where appropriate. The proposed initial list of invitees is given in Chapter 5, Section 5.6.2.

Figure 6.10: Progress in the preparation of the Strategic Review of Charges 2006-10

16.3 WIC 5: Customer service performance return (Quarter 1 – 2005-06)

The 'WIC 5' Customer service performance return is submitted quarterly by Scottish Water to our Office. It enables us to monitor Scottish Water's customer service performance and check compliance with the guaranteed minimum standards of service.

It covers:

- number of written contacts;
- number of telephone contacts;
- number of enquiries and speed of response;
- number of complaints and speed of response;
- number of telephone calls received, answering speed and number abandoned;
- number of planned interruptions and response time;
- number of unplanned interruptions and response time;
- septic tank emptying;
- number of sewer flooding incidents;
- keeping appointments; and
- GMS payments made.

This information allows us to monitor customer service performance between Annual Returns. It enables us to spot trends and seasonal variations and provides supporting information when we examine particular customer service issues.

16.4 WIC XX²⁵ Annual Return – 2nd round of queries: response due from Scottish Water

This is a follow up to Scottish Water's submission of the Annual Return (item 14.3). Both Scottish Water and this Office carry out rigorous checks on the Annual Return information. Given the volume of information, there are inevitably issues that arise during the checking process and this is an opportunity for these to be resolved. A first round of queries takes place in July 2005 (item 15.3). This is the second round.

16.5 WIC 25: RAB (resource accounting and budgeting) submission for July 2005

The 'RAB return' financial submissions are made on a monthly basis by Scottish Water. They comprise

- the main financial statements;
- a summary analysis of fixed assets;
- income analysis (split by water and waste water);
- analysis of operating costs; and
- an audit trail of revisions to budget forecasts submitted at the start of the year.

It is important for us to be able to monitor the financial position of Scottish Water throughout the financial year. It provides visibility on key financial trends and movements in operating costs. Using this information we can report on Scottish Water's progress in achieving its financial targets.

16.6 Quarterly meeting with Scottish Executive

The purpose of this quarterly meeting is to ensure that the Scottish Executive is kept fully up to date with the progress of the *Strategic Review of Charges 2006-10*. It

is an opportunity for a focused discussion about issues raised within the Strategic Review process.

16.7 Final Guidance from Ministers

As a follow up to the detailed Guidance provided in January 2005 (item 9.7), this final Guidance from Ministers will take account of the proposals set out in the Draft *Strategic Review of Charges 2006-10*.

17. September 2005

17.1 MSP briefing

This will provide the Commissioner with an opportunity to update MSPs on the progress of the Strategic Review of Charges and to hear their views and concerns.

This will be the third of a series of three briefings to be held at appropriate points during the Strategic Review process

17.2 Deadline for representations on the draft Strategic Review of Charges

Scottish Water makes its final representations on our published draft determination of price limits (item 14.6, 30/06/04). These are the last representations to be made by Scottish Water prior to final determinations being published (item 19.8, 30/11/05).

This is also the deadline for representations from other stakeholders. Representations should highlight issues that stakeholders believe have not been taken sufficiently into consideration. Stakeholders should highlight the consequences and impact of their representations both on those who would benefit and those who would lose out.

17.3 Stakeholder information day

This will be the tenth in a series of information days for stakeholders, which will be held approximately every six weeks throughout the Strategic Review process. The main aims of these workshops are to inform

²⁵ WIC number to be assigned on issue.

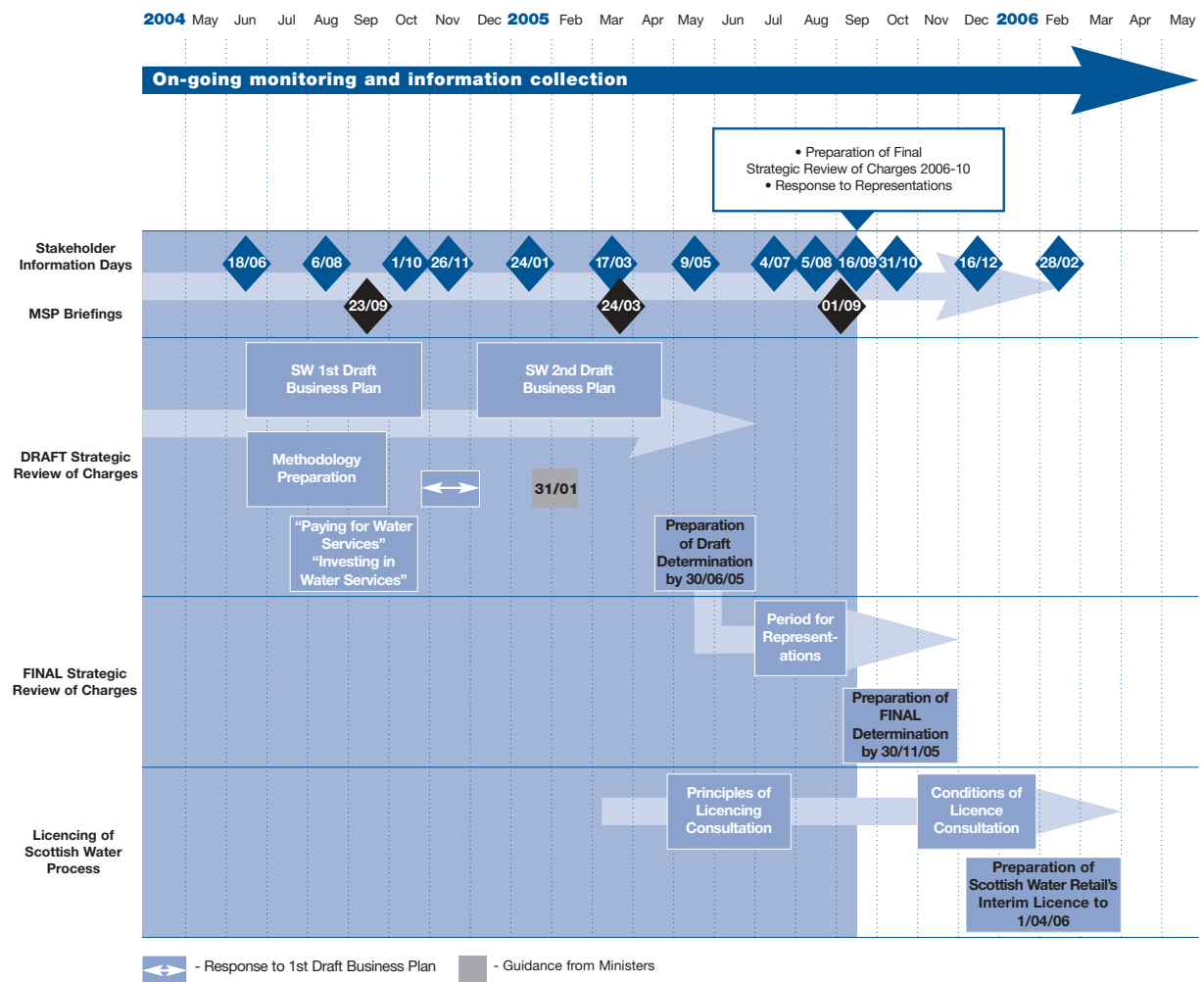
stakeholders about the process of the Strategic Review of Charges, and to seek input where appropriate. The proposed initial list of invitees is given in Chapter 5, Section 5.6.2.

These workshops will play an important role in ensuring transparency of the Strategic Review process and will provide stakeholders with an opportunity to input to the Strategic Review. We would therefore encourage stakeholders to participate as fully as possible.

At this stage in the process the key areas for discussion will be the activities leading up to the final Strategic Review of Charges following the closure of the period for representations on the draft Strategic Review of Charges.

The following figure illustrates progress in our overall work-plan at the time of the tenth stakeholder information day.

Figure 6.11: Progress in the preparation of the Strategic Review of Charges 2006-10



17.4 WIC 25: RAB (resource accounting and budgeting) submission for August 2005

The 'RAB return' financial submissions are made on a monthly basis by Scottish Water. They comprise:

- the main financial statements;
- a summary analysis of fixed assets;
- income analysis (split by water and waste water);
- analysis of operating costs; and
- an audit trail of revisions to budget forecasts submitted at the start of the year.

It is important for us to be able to monitor the financial position of Scottish Water throughout the financial year. It provides visibility on key financial trends and movements in operating costs. Using this information we can report on Scottish Water's progress in achieving its financial targets.

18. October 2005

18.1 WIC 25: RAB (resource accounting and budgeting) submission for September 2005

See item 17.4 above. This submission should include Scottish Water's draft half-year accounts for 2005-06.

18.2 Start of consultation on draft licence conditions

This will be the Commissioner's second consultation on the licensing regime for the proposed non-household retail market. Based on the core principles consulted on in April 2005 (item 12.3), this second consultation will provide more specific detail about the proposed licence conditions. It will invite comment on whether the suggested conditions are both appropriate and sufficient to ensure that these core principles are realised.

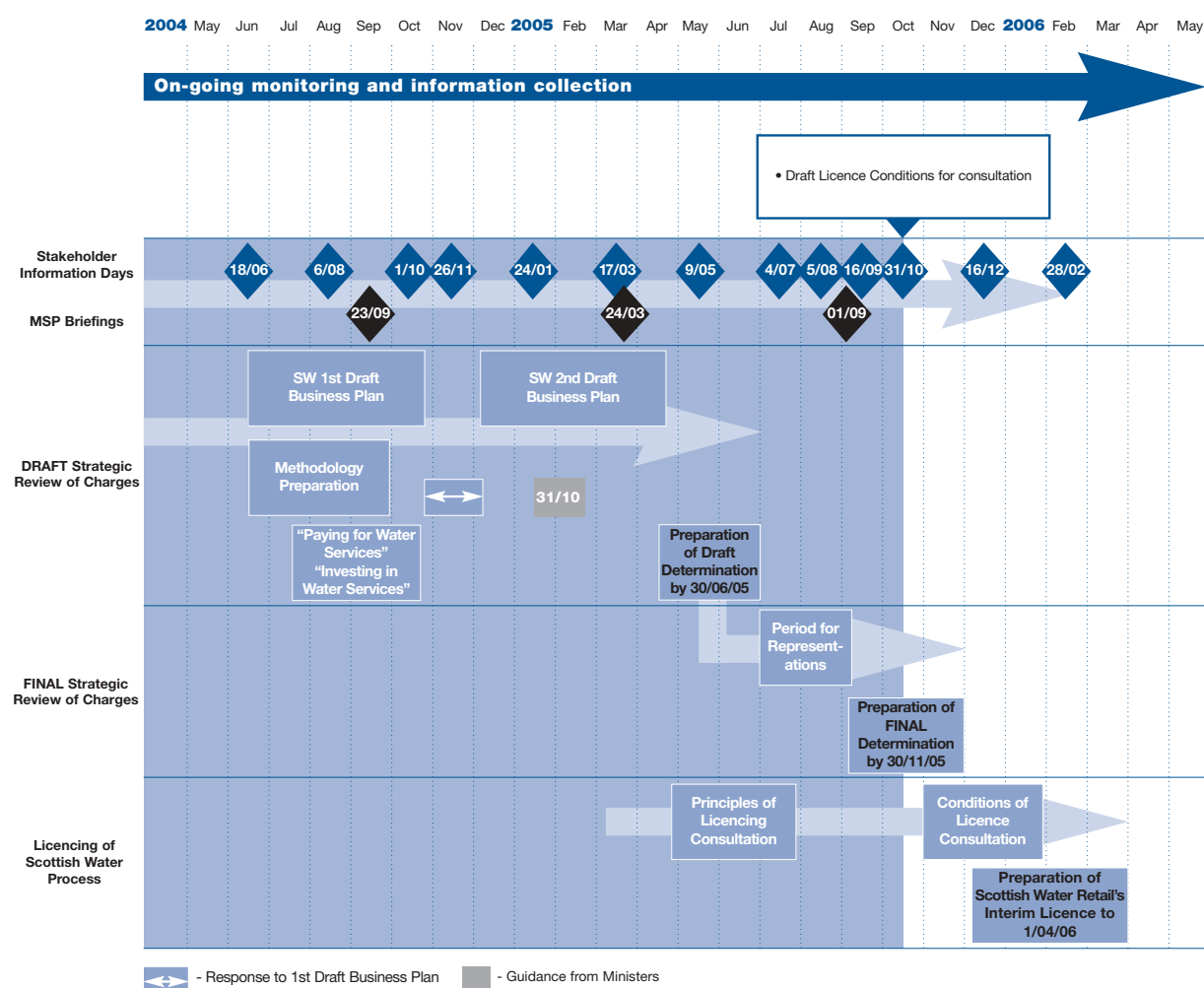
18.3 Stakeholder information day

This will be the eleventh in a series of information days for stakeholders, which will be held approximately every six weeks throughout the Strategic Review process. The main aims of these workshops are to inform stakeholders about the process of the Strategic Review of Charges, and to seek input where appropriate. The proposed initial list of invitees is given in Chapter 5 Section 5.6.2.

These workshops will play an important role in ensuring transparency of the Strategic Review process and will provide stakeholders with an opportunity to input to the Strategic Review. We would therefore encourage stakeholders to participate as fully as possible.

At this stage in the process the key areas for discussion will include the draft licence conditions (item 18.2).

The following figure illustrates progress in our overall work-plan at the time of the eleventh stakeholder information day.

Figure 6.12: Progress in the preparation of the Strategic Review of Charges 2006-10

19. November 2005

19.1 Capital Investment Return: Quarter 2 - 2005-06 submission

The purpose of the quarterly CIR submission is to monitor progress, at a project level, in the delivery of Scottish Water's capital investment programme. It contains information on:

- forecast and actual project spend;
- physical progress towards defined milestones; and
- explanations of financial variances.

Through a combination of the quarterly CIRs and the investment tables in the Annual Return, we can track

delivery of the investment programme and monitor the effectiveness and efficiency of Scottish Water in delivering the required investment. The CIR can also highlight material changes from the planned investment programme. These may be positive (efficiencies or early delivery of a project) or negative (cost overruns or project delays).

19.2 WIC 1/9/14/22: Non-domestic customer revenue information (Quarter 2 – 2005-06)

These submissions, which are made by Scottish Water twice a year, are intended to capture a wide variety of information in relation to non-domestic customers and domestic customers with water meters. The information covered in the submissions includes:

- customer revenue information;
- consumption (for metered customers);
- rateable value used for unmeasured services (water, waste water and drainage services);
- debt analysis;
- special agreements for large customers; and
- meter information (e.g. number of meters, size of meters).

We believe that it is essential for the financial stability of Scottish Water that it has a detailed knowledge of its customer base and the income generated by different customer groups. These submissions are also intended to help our Office and Scottish Water to forecast future trends for customers and to estimate the impact of changes in the level and structure of charges. They can be an invaluable tool in monitoring revenue on an ongoing basis, ensuring that Scottish Water's customer information is consistent with its declared revenues and with the revenue cap set by the Minister.

At present, the information being provided by Scottish Water in these submissions is not as complete or as robust as we would like. We are working with Scottish Water to improve the quality of the information provided and hence the ability to forecast accurately the impact of tariff changes.

19.3 WIC 4: Domestic customer revenue information (Quarter 2 – 2005-06)

The WIC 4 report is the equivalent of the WIC 1/9/14/22 information, but for households without water meters, and its purpose is also very similar. The information requested allows us to monitor revenue from households and to understand issues such as affordability and ease of collection.

The information requested includes the number of households billed and the number receiving discounts, along with outstanding debt analysis, all split by Council Tax band and by local authority area basis. Because

unmetered households are billed on Scottish Water's behalf by the local authorities, Scottish Water sources this information from the local authorities.

This information, which is submitted by Scottish Water twice a year, allows us to monitor debt on an on-going basis. It can also provide an indicator as to whether customer revenues will be consistent with the revenue cap endorsed by the Minister.

19.4 WIC 5: Customer service performance return (Quarter 2 – 2005-06)

The 'WIC 5' Customer service performance return is submitted quarterly by Scottish Water to our Office. It enables us to monitor Scottish Water's customer service performance and check compliance with the guaranteed minimum standards of service.

It covers:

- number of written contacts;
- number of telephone contacts;
- number of enquiries and speed of response;
- number of complaints and speed of response;
- number of telephone calls received, answering speed and number abandoned;
- number of planned interruptions and response time;
- number of unplanned interruptions and response time;
- septic tank emptying;
- number of sewer flooding incidents;
- keeping appointments; and
- GMS payments made.

This information allows us to monitor customer service performance between Annual Returns. It enables us to spot trends and seasonal variations and provides supporting information when we examine particular customer service issues.

19.5 Final Strategic Review of Charges to printers

This is the deadline for the final version of the Strategic Review of Charges to be handed over to the printers, after final editing has taken place.

19.6 Quarterly meeting with Scottish Executive

The purpose of this quarterly meeting is to ensure that the Scottish Executive is kept fully up to date with the progress of the *Strategic Review of Charges 2006-10*. It is an opportunity for a focused discussion about issues raised within the Strategic Review process.

19.7 WIC 25: RAB (resource accounting and budgeting) submission for October 2005

The 'RAB return' financial submissions are made on a monthly basis by Scottish Water. They comprise:

- the main financial statements;
- a summary analysis of fixed assets;
- income analysis (split by water and waste water);
- analysis of operating costs; and
- an audit trail of revisions to budget forecasts submitted at the start of the year.

It is important for us to be able to monitor the financial position of Scottish Water throughout the financial year. It provides visibility on key financial trends and movements in operating costs. Using this information we can report on Scottish Water's progress in achieving its financial targets.

19.8 Publication of Final Strategic Review of Charges 2006-10

This is the deadline for us to publish the final Strategic Review of Charges document (30 November 2005). We will publish this in hard copy and on our website.

20. December 2005

20.1 Half yearly meeting with Water Customer Consultation Panels (WCCPs)

At these regular meetings, the Commissioner and the WCCPs update one another on key activities, customer-related issues and areas of joint concern. During the Strategic Review process, the meetings will provide the Commissioner with the opportunity to update the WCCPs on progress with the Strategic Review and to seek feedback on customer issues and concerns.

20.2 WIC 19: Investment appraisal audits

These audits, carried out by this Office, form an important part of assessing the effectiveness of investment decision-making by Scottish Water. In particular, they assess Scottish Water's relative position compared with previous audits and in relation to industry best practice. The projects audited are selected at random (a mix of large, small, in progress and completed) and the assessment involves a review of documentation and structured interviews with project staff.

20.3 Prices to Commission from Scottish Water

Scottish Water submits to the new Water Industry Commission for approval its scheme of charges for the tariffs it intends to implement from April 2006. The Commission will approve the scheme of charges if it determines that Scottish Water's proposals are consistent with the final determination, published in November 2005.

20.4 Stakeholder information day

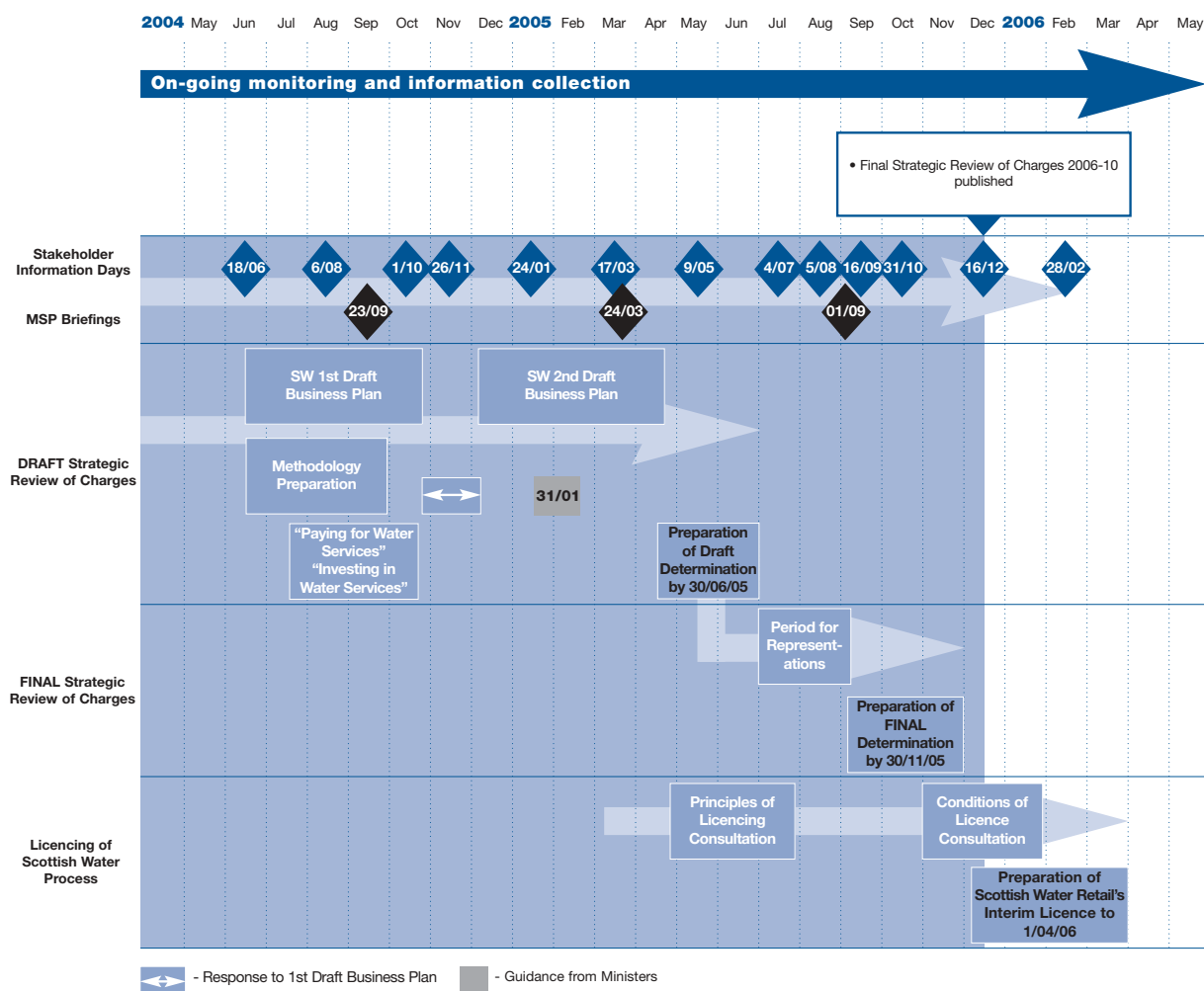
This will be the twelfth in a series of information days for stakeholders, which will be held approximately every six weeks throughout the Strategic Review process. The main aims of these workshops are to inform stakeholders about the process of the Strategic Review of Charges, and to seek input where appropriate. The proposed initial list of invitees is given in Chapter 5, Section 5.6.2.

These workshops will play an important role in ensuring transparency of the Strategic Review process and will provide stakeholders with an opportunity to input to the Strategic Review. We would therefore encourage stakeholders to participate as fully as possible.

At this stage in the process the key areas for discussion will include the final *Strategic Review of Charges 2006-10*, published on 30 November 2005.

The following figure illustrates progress in our overall work-plan at the time of the twelfth stakeholder information day.

Figure 6.13: Progress in the preparation of the Strategic Review of Charges 2006-10



20.5 WIC 25: RAB (resource accounting and budgeting) submission for November 2005

The 'RAB return' financial submissions are made on a monthly basis by Scottish Water. They comprise:

- the main financial statements;
- a summary analysis of fixed assets;
- income analysis (split by water and waste water);
- analysis of operating costs; and
- an audit trail of revisions to budget forecasts submitted at the start of the year.

It is important for us to be able to monitor the financial position of Scottish Water throughout the financial year. It provides visibility on key financial trends and movements in operating costs. Using this information we can report on Scottish Water's progress in achieving its financial targets.

20.6 WIC 24: Leakage strategy

This submission from Scottish Water provides us with information about its strategic approach to managing leakage. The leakage strategy submission should include information on Scottish Water's progress towards its economic level of leakage, its progress on network metering, its current strategy for increasing the extent of the network where leakage is fully understood and its application of leakage control measures to reduce the cost of the capital programme. See also Chapter 2, Section 2.7.

21. January 2006

21.1 WIC 6: Quality Performance Assessment (written) (Quarter 3 – 2005-06) – Scottish Water provides list of complaints

This is an assessment of how well Scottish Water handles customer complaints. It is carried out periodically by our Office and looks at the quality of

response to ensure that the overall service received by complainants is not compromised by the speed of response (as reported in WIC 5).

A random sample of complaints is assessed against a set of criteria with 'yes' or 'no' outcomes. These include whether:

- the complaint was dealt with by the correct person;
- the response addressed the substance of the complaint;
- the response is written in plain English and avoids jargon; and
- the tone of the response is fitting.

We score the various elements and create a percentage score for each complaint. We expect each complaint to achieve 98% or higher. We report the percentage of complaints meeting this standard.

Scottish Water must submit to us by this date, the full list of complaints received by them this quarter. We will then select a random sample of complaints against which we will carry out our assessment (see item 22.2).

21.2 WIC 25: RAB (resource accounting and budgeting) submission for December 2005

The 'RAB return' financial submissions are made on a monthly basis by Scottish Water. They comprise:

- the main financial statements;
- a summary analysis of fixed assets;
- income analysis (split by water and waste water);
- analysis of operating costs; and
- an audit trail of revisions to budget forecasts submitted at the start of the year.

It is important for us to be able to monitor the financial position of Scottish Water throughout the financial year. It provides visibility on key financial trends and

movements in operating costs. Using this information we can report on Scottish Water's progress in achieving its financial targets.

21.3 Close of consultation on draft licence conditions

Following a period of three months, the Commissioner's second consultation on licensing will close. Consultation responses will be analysed and used to inform the final determination of licence conditions for the non-household retail market.

22. February 2006

22.1 Capital Investment Returns: Quarter 3 2005-06 - submission

The purpose of the quarterly CIR submission is to monitor progress, at a project level, in the delivery of Scottish Water's capital investment programme. It contains information on:

- forecast and actual project spend;
- physical progress towards defined milestones; and
- explanations of financial variances.

Through a combination of the quarterly CIRs and the investment tables in the Annual Return, we can track delivery of the investment programme and monitor the effectiveness and efficiency of Scottish Water in delivering the required investment. The CIR can also highlight material changes from the planned investment programme. These may be positive (efficiencies or early delivery of a project) or negative (cost overruns or project delays).

22.2 WIC 6: Quality Performance Assessment (written) (Quarter 3 – 2005-06) – Scottish Water provides complaint files

This is an assessment of how well Scottish Water handles customer complaints. It is carried out periodically by our Office and looks at the quality of

response to ensure that the overall service received by complainants is not compromised by the speed of response (as reported in WIC 5).

A random sample of complaints is assessed against a set of criteria with 'yes' or 'no' outcomes. These include whether:

- the complaint was dealt with by the correct person;
- the response addressed the substance of the complaint;
- the response is written in plain English and avoids jargon; and
- the tone of the response is fitting.

We score the various elements and create a percentage score for each complaint. We expect each complaint to achieve 98% or higher. We report the percentage of complaints meeting this standard.

Scottish Water must submit to us by this date, the files of those complaints randomly selected by WICS for assessment (see item 21.1).

22.3 Publication of Investment and Asset Management Report (2004-05)

The *Investment and Asset Management Report* on Scottish Water for the year 2004-05 will be published both in hard copy and on our website. It is likely to adopt a similar format to the documents published in March 2003 and April 2004 (which are both available on our website). It will summarise Scottish Water's investment performance and compare this with previous years. It will also include an assessment of the delivery of the *Quality and Standards II* investment programme and the state of the asset base.

22.4 WIC 5: Customer service performance return (Quarter 3 – 2005-06)

The 'WIC 5' Customer service performance return is submitted quarterly by Scottish Water to our Office. It

enables us to monitor Scottish Water's customer service performance and check compliance with the guaranteed minimum standards of service.

It covers:

- number of written contacts;
- number of telephone contacts;
- number of enquiries and speed of response;
- number of complaints and speed of response;
- number of telephone calls received, answering speed and number abandoned;
- number of planned interruptions and response time;
- number of unplanned interruptions and response time;
- septic tank emptying;
- number of sewer flooding incidents;
- keeping appointments; and
- GMS payments made.

This information allows us to monitor customer service performance between Annual Returns. It enables us to spot trends and seasonal variations and provides supporting information when we examine particular customer service issues.

22.5 WIC 25: RAB (resource accounting and budgeting) submission for January 2006

The 'RAB return' financial submissions are made on a monthly basis by Scottish Water. They comprise:

- the main financial statements;
- a summary analysis of fixed assets;
- income analysis (split by water and waste water);
- analysis of operating costs; and

- an audit trail of revisions to budget forecasts submitted at the start of the year.

It is important for us to be able to monitor the financial position of Scottish Water throughout the financial year. It provides visibility on key financial trends and movements in operating costs. Using this information we can report on Scottish Water's progress in achieving its financial targets.

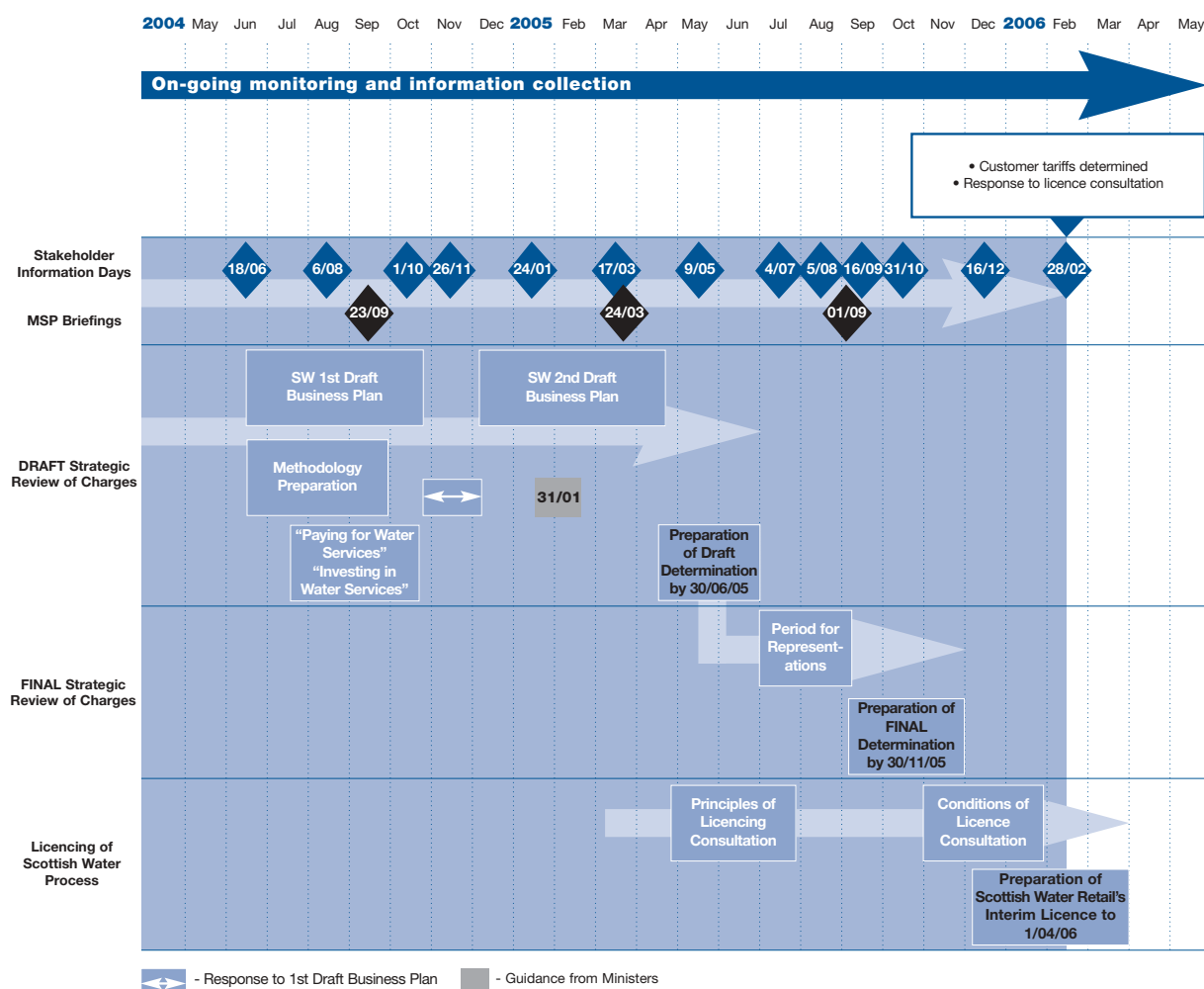
22.6 Stakeholder information day

This will be the last in a series of information days for stakeholders, which will be held approximately every six weeks throughout the Strategic Review process. The main aims of these workshops are to inform stakeholders about the process of the Strategic Review of Charges, and to seek input where appropriate. The proposed initial list of invitees is given in Chapter 5, Section 5.6.2.

These workshops will play an important role in ensuring transparency of the Strategic Review process and will provide stakeholders with an opportunity to input to the Strategic Review. We would therefore encourage stakeholders to participate as fully as possible.

At this stage in the process the key areas for discussion will include customer tariffs and responses to the licence consultation.

The following figure illustrates progress in our overall work-plan at the time of the thirteenth stakeholder information day.

Figure 6.14: Progress in the preparation of the Strategic Review of Charges 2006-10

23. March 2006

23.1 WIC 25: RAB (resource accounting and budgeting) submission for February 2006

The 'RAB return' financial submissions are made on a monthly basis by Scottish Water. They comprise:

- the main financial statements;
- a summary analysis of fixed assets;
- income analysis (split by water and waste water);
- analysis of operating costs; and
- an audit trail of revisions to budget forecasts submitted at the start of the year.

²⁶ WIC number to be assigned on issue.

It is important for us to be able to monitor the financial position of Scottish Water throughout the financial year. It provides visibility on key financial trends and movements in operating costs. Using this information we can report on Scottish Water's progress in achieving its financial targets.

23.2 WIC XX²⁶: Annual Return 2005-06 guidance issued

This letter to Scottish Water outlines our detailed requirements for the 2005-06 Annual Return.

This is our single largest information request; it is issued to Scottish Water in April of each year, for completion by the end of June. The Return collects information on all

aspects of Scottish Water's business and is used by this Office to:

- calculate efficiency targets;
- monitor expenditure;
- reconcile movements in costs;
- assess levels of service to customers;
- track investment programmes;
- assess compliance with environmental and drinking water standards; and
- compare Scottish Water's performance against that of the English and Welsh companies.

23.3 WIC XX²⁷: Regulatory accounting and transfer pricing tables 2005-06 guidance issued

We will issue guidance to Scottish Water on the regulatory accounting and transfer pricing tables for 2005-06. The guidance is likely to request Scottish Water to:

- identify core and non-core elements of Scottish Water's business and to provide separate financial, customer and asset information for these businesses;
- identify separately the retail and wholesale segments of the core business currently performed by Scottish Water and to provide separate reporting frameworks for these businesses; and
- finalise regulatory accounting guidelines such that we can analyse and regulate the retail and wholesale segments of the water industry in Scotland.

The identification of core costs is an important feature of the *Strategic Review of Charges 2006-10*. The Strategic Review will focus principally on the core activities of Scottish Water in providing water and sewerage services to customers in Scotland. This will help ensure that customers are paying only for the elements of Scottish Water's business that contribute to the provision

of their water and waste water services. This change reflects the requirements of the Water Industry (Scotland) Act 2002, which restricts our role to promoting the interests of customers of the core business.

Similarly, the requirement to identify costs associated with the retail and wholesale elements of the business reflects the requirements outlined in the draft Water Services etc (Scotland) Bill. This proposes the introduction of competition to the provision of non-domestic water services in Scotland. The separate identification of retail and wholesale costs will help ensure that customers benefit to the greatest extent possible from the proposed changes. We will also regulate Scottish Water's non-core retail operation until a competitive market is properly developed.

24. April 2006

24.1 Scottish Water retail business licensed

If the Water Services (Scotland) Bill is passed by the Parliament, Scottish Water will have to place its retail activities associated with non-domestic customers into a separate company. This is in line with Section 12 of the proposed Bill. This company will require a water services licence and a sewerage licence in order to be able to provide the retail services specified in the Bill.

It is currently proposed that this split will take place on 1 April 2006.

New entrants to the retail market are not expected to be licensed until April 2008. The Commission will continue to regulate both wholesale and retail prices until it is confident that sufficient competition in the retail market exists.

Scottish Water will be required to treat each licensed company equally, irrespective of its size or ownership,

24.2 Publication of Customer Service Report (2004-05)

We will publish the Customer Service Report on Scottish

²⁷ WIC number to be assigned on issue.

Water's performance for the year 2004-05, both in hard copy and on our website.

24.3 WIC 6: Quality performance assessment (written) (Quarter 4 – 2005-06) – Scottish Water provides list of complaints

This is an assessment of how well Scottish Water handles customer complaints. It is carried out periodically by our Office and looks at the quality of response to ensure that the overall service received by complainants is not compromised by the speed of response (as reported in WIC 5).

A random sample of complaints is assessed against a set of criteria with 'yes' or 'no' outcomes. These include whether:

- the complaint was dealt with by the correct person;
- the response addressed the substance of the complaint;
- the response is written in plain English and avoids jargon; and
- the tone of the response is fitting.

We score the various elements and create a percentage score for each complaint. We expect the response to each complaint to achieve a score of 98% or higher. We report the percentage of complaints meeting this standard.

Scottish Water must submit to us by this date, the full list of complaints received by them this quarter. We will then select a random sample of complaints against which we will carry out our assessment (see item 25.2).

24.4 WIC 25: RAB (resource accounting and budgeting) submission for March 2006

The 'RAB return' financial submissions are made on a monthly basis by Scottish Water. They comprise:

- the main financial statements;
- a summary analysis of fixed assets;

- income analysis (split by water and waste water);
- analysis of operating costs; and
- an audit trail of revisions to budget forecasts submitted at the start of the year.

It is important for us to be able to monitor the financial position of Scottish Water throughout the financial year. It provides visibility on key financial trends and movements in operating costs. Using this information we can report on Scottish Water's progress in achieving its financial targets.

25. May 2006

25.1 Capital Investment Return: Quarter 4 2005-06 submission

The purpose of the quarterly CIR submission is to monitor progress, at a project level, in the delivery of Scottish Water's capital investment programme. It contains information on:

- forecast and actual project spend;
- physical progress towards defined milestones; and
- explanations of financial variances.

Through a combination of the quarterly CIRs and the investment tables in the Annual Return, we can track delivery of the investment programme and monitor the effectiveness and efficiency of Scottish Water in delivering the required investment. The CIR can also highlight material changes from the planned investment programme. These may be positive (efficiencies or early delivery of a project) or negative (cost overruns or project delays).

25.2 WIC 6: Quality performance assessment (written) (Quarter 4 – 2005-06) – Scottish Water provides complaint files

This is an assessment of how well Scottish Water handles customer complaints. It is carried out periodically by our Office and looks at the quality of response to ensure that the overall service received by

complainants is not compromised by the speed of response (as reported in WIC 5).

A random sample of complaints is assessed against a set of criteria with 'yes' or 'no' outcomes. These include whether:

- the complaint was dealt with by the correct person;
- the response addressed the substance of the complaint;
- the response is written in plain English and avoids jargon; and
- the tone of the response is fitting.

We score the various elements and create a percentage score for each complaint. We expect the response to each complaint to achieve a score of 98% or higher. We report the percentage of complaints meeting this standard.

Scottish Water must submit to us by this date, the files of those complaints that we have randomly selected for assessment (see item 24.3).

25.3 WIC 5: Customer service performance return (Quarter 4 – 2005-06)

The 'WIC 5' Customer service performance return is submitted quarterly by Scottish Water to our Office. It enables us to monitor Scottish Water's customer service performance and check compliance with the guaranteed minimum standards of service.

It covers:

- number of written contacts;
- number of telephone contacts;
- number of enquiries and speed of response;
- number of complaints and speed of response;
- number of telephone calls received, answering speed and number abandoned;

- number of planned interruptions and response time;
- number of unplanned interruptions and response time;
- septic tank emptying;
- number of sewer flooding incidents;
- keeping appointments; and
- GMS payments made.

This information allows us to monitor customer service performance between Annual Returns. It enables us to spot trends and seasonal variations and provides supporting information when we examine particular customer service issues.

25.4 WIC 1/9/14/22: Non-domestic customer revenue information (Quarter 4 – 2005-06)

These submissions, which are made by Scottish Water twice a year, are intended to capture a wide variety of information in relation to non-domestic customers and domestic customers with water meters. The information covered in the submissions includes:

- customer revenue information;
- consumption (for metered customers);
- rateable value used for unmeasured services (water, waste water and drainage services);
- debt analysis;
- special agreements for large customers; and
- meter information (e.g. number of meters, size of meters).

We believe that it is essential for the financial stability of Scottish Water that it has a detailed knowledge of its customer base and the income generated by different customer groups. These submissions are also intended to help our Office and Scottish Water to forecast future trends for customers and to estimate the impact of changes in the level and structure of charges. They can

be an invaluable tool in monitoring revenue on an ongoing basis, ensuring that Scottish Water's customer information is consistent with its declared revenues and with the revenue cap set by the Minister.

At present, the information being provided by Scottish Water in these submissions is not as complete or as robust as we would like. We are working with Scottish Water to improve the quality of the information provided and hence the ability to forecast accurately the impact of tariff changes.

25.5 WIC 4: Domestic customer revenue information (Quarter 4 – 2005-06)

The WIC 4 report is the equivalent of the WIC 1/9/14/22 information, but for households without water meters, and its purpose is also very similar. The information requested allows us to monitor revenue from households and to understand issues such as affordability and ease of collection.

The information requested includes the number of households billed and the number receiving discounts, along with outstanding debt analysis, all split by Council Tax band and by local authority area. Because unmetered households are billed on Scottish Water's behalf by the local authorities, Scottish Water sources this information from the local authorities.

This information, which is submitted by Scottish Water twice a year, allows us to monitor debt on an on-going basis. It can also provide an indicator as to whether customer revenues will be consistent with the revenue cap endorsed by the Minister.

25.6 WIC 25: RAB (resource accounting and budgeting) submission for April 2006

The 'RAB return' financial submissions are made on a monthly basis by Scottish Water. They comprise:

- the main financial statements;
- a summary analysis of fixed assets;

- income analysis (split by water and waste water);
- analysis of operating costs; and
- an audit trail of revisions to budget forecasts submitted at the start of the year.

It is important for us to be able to monitor the financial position of Scottish Water throughout the financial year. It provides visibility on key financial trends and movements in operating costs. Using this information we can report on Scottish Water's progress in achieving its financial targets.

Chapter 7

Information for regulation

7.1 Introduction

Information is vital to effective economic and customer service regulation. Scottish Water is therefore required to provide us with a wide range of information, covering all aspects of its water and waste water business. This information allows us to monitor and report on Scottish Water's performance and to make comparisons with other service providers, particularly the water and sewerage companies in England and Wales.

It is essential that the information we receive from Scottish Water is appropriate, accurate and timely; we have therefore set up a number of procedures to facilitate both our information requests to Scottish Water and the way in which that information is provided back to this Office.

We re-assess our information requirements on an ongoing basis to ensure that they continue to be accurate, timely and appropriate to our needs. For the forthcoming Strategic Review of Charges, we will continue to review our information needs and the means of fulfilling these needs.

7.2 Ensuring that the information we collect is appropriate

To ensure that the information we request from Scottish Water is appropriate, we identify our objectives and examine the regulatory tools we use to meet these objectives. Each team within the Office then identifies what information it needs to implement these regulatory tools, and from this we draw up our information requests.

We also review the information collected by other regulators, particularly Ofwat, which regulates the water and waste water providers in England and Wales. The information it uses is of particular relevance to us as we compare the information we receive on Scottish Water's performance with that of the companies south of the border. This comparative information is then used to determine the efficiency targets that we set for Scottish Water.

When Ofwat changes any of its information requests, we ensure that we update our requests where appropriate so that fair comparisons continue to be made.

7.3 Ensuring that our information requests are reasonable

We need to be sure that the amount and type of information we ask Scottish Water to provide is reasonable. We have compared the information we collect with that collected by other regulators. This process confirmed to us that our information requests are largely similar to those of other regulators, particularly Ofwat.

For some areas of regulated activity we require greater amounts of information than Ofwat does. In part this is because Scottish Water is a monopoly service provider in Scotland, which means that there are no local comparators available. It is vital that we understand any factors in Scottish Water's operating environment that are genuinely unique and are beyond the control of management. We do not want to penalise or reward Scottish Water for any of these factors. We therefore seek to collect information that will establish the impact of any unique factors. Economic regulation of the water industry is also relatively new in Scotland and so we require more detailed information in order to be in a position to establish solid benchmarks.

For other areas of activity we collect less information than other regulators. This is partly because wide-ranging competition does not exist in Scotland, so the relevant information is not required. Ofwat also appears to collect a larger amount of information about service indicators and regulatory accounts.

We work with Scottish Water to ensure that effective processes are in place for information exchange. For example, we meet with Scottish Water on a regular basis to discuss our information requests, and involve them as much as possible in any changes we make. Where significant alterations are made to information requests we hold workshops to identify fully what the changes are and our reasons for making the changes.

7.4 Ensuring the format and timeliness of the information we request

We require information at regular intervals throughout the year. Scottish Water needs to complete the requests and return them within the agreed timeframe, so we again work closely together to help ensure that this happens.

Our information requests generally include a set of clear definitions which show Scottish Water how to complete each item of information requested. These requests will also have a clear deadline for submission. Where possible we discuss schedules with Scottish Water in advance to ensure that timescales for delivery are reasonable.

Early each financial year we issue a letter to Scottish Water setting out the standard information requests that we will be requesting over the coming year. This letter details the information required, the format in which it should be presented, the deadline for submission and the team within this Office which will be responsible for receiving and analysing it. Additional requests may be generated throughout the year and we aim to ensure that these requests follow the same format as standard requests.

We also endeavour to ensure that the information we request is in a format that Scottish Water's systems can deliver.

Effective communication of information requests, requests for clarification or the submission of regulatory information is vital. We have therefore set up a Performance Monitoring Team to liaise directly with Scottish Water's Regulation Team. These two teams ensure that communication is effective. All information has to pass through this channel if it is to be acted upon either by this Office or by Scottish Water. The Performance Monitoring Team monitors Scottish Water's compliance with information requests and regularly liaises with Scottish Water's staff to ensure that deadlines will be met or to highlight at an early stage where problems with delivery seem likely.

Finally, in July 2003, Scottish Water and this Office reached agreement on 'Ten principles' that underpin the regulatory relationship. One of these principles is to ensure that Scottish Water engages with us in improving the quality of the information it supplies.

7.5 Ensuring that information is accurate

We employ a number of measures to ensure that the information we receive is accurate.

The Performance Monitoring Team is responsible for sense checking all submissions as and when they are received by this Office. Once the information has been approved by the Performance Monitoring Team, it is then forwarded to the appropriate team within this Office for more in-depth analysis.

Our largest information request, the Annual Return, is carefully cross checked to ensure that the information it contains has been completed correctly. Computer programmes are used to verify that the information submitted is valid and fit for purpose. In addition, Scottish Water assigns a 'confidence grading' that identifies the accuracy which it places on each piece of information reported. We take this grading into account when undertaking our analysis. An explanation of confidence grades is attached at Appendix 4.

We also ask Directors and senior managers within Scottish Water to sign off each table of information that it submits. This process helps to underline the importance of submitting accurate information.

In 2004 we appointed a Reporter for the water industry in Scotland (for more information about the Reporter, see Section 5.8). The Reporter will audit the information provided to us and highlight any issues or inaccuracies, thereby improving the information we receive. The Reporter will be strictly independent of Scottish Water. His appointment reflects current practice in England and Wales.

As a final measure, we ensure that clear audit trails exist for any changes that are made to items of information.

We require staff from Scottish Water and this Office to sign off any changes to information.

7.6 The information we request

The table below summarises the main information requests we have made for 2004-05. It details the nature and timing of the submissions and the team that is responsible for analysing the information. A more in-depth description of each information request listed is then provided.

Submission		Frequency of submission	Team that receives the submission
WIC 1/9/14/22	Non-domestic customer revenue information	Twice yearly	Revenue and Tariffs
WIC 4	Domestic customer revenue information	Twice yearly	Revenue and Tariffs
WIC 5	Customer service performance return	Quarterly	Competition and Customer Services
WIC 6	Quality performance assessments (written)	Quarterly	Competition and Customer Services
WIC 18	Quality & Standards final output	Ad-hoc	Investment and Asset Management
Q & S III	Baseline investment programme for Quality and Standards III	Ad-hoc	Investment and Asset Management
WIC 19	Investment appraisal audits	Annually	Investment and Asset Management
WIC 24	Leakage strategy	Annually	Investment and Asset Management
WIC 25	Resource accounting and budgeting (RAB)	Monthly	Costs and Performance
WIC 43	Annual Return 2003-04	Annually	Office-wide
WIC 45	Regulatory accounting (and transfer pricing)	Ad-hoc in 2004-05, but annually from 2005-06 onwards	Costs and Performance
Scheme of Charges	Scottish Water Scheme of Charges submission	Annually	Revenue and Tariffs
CIR	Capital Investment Return	Quarterly	Investment and Asset Management
SBP	Strategic Business Plan	Ad-hoc	Costs and Performance

WIC 1/9/14/22 Non-domestic customer revenue information

These six-monthly submissions require Scottish Water to provide information on customer revenue, water and

sewerage volumes and debt. It also asks Scottish Water to provide information on any 'special agreements' for metered domestic and all non-domestic customers.

The information covered in this submission includes:

- customer revenue information;
- consumption (for metered customers);
- rateable value used for unmeasured services (water, waste water and drainage services);
- debt analysis;
- special agreements for large user customers; and
- meter information (eg number of meters, size of meters).

The original request was issued for the period April 2000 to October 2001, as we wanted to reconcile revenue (as declared in annual accounts) from these customers to financial transactions held in billing systems.

The reports we receive should not only allow us to reconcile billings with declared revenue, but also to assess the likely impact that changes in tariffs will have on these customers and on Scottish Water's overall revenue. The debt information should also allow us to analyse Scottish Water's performance in managing its non-domestic debtors. This submission also helps both this Office and Scottish Water to forecast future trends for customers and to estimate the impact of changes in the level and structure of charges.

WIC 4 Domestic customer revenue information

This six-monthly return that we require from Scottish Water is effectively the equivalent of the WIC 1/4/14/22 return above, but for domestic customers who do not have water meters.

Water and sewerage services for unmetered households are charged on the basis of the Council Tax band of the household. As the same charging basis is

used for Council Tax, the local authorities in Scotland carry out the billing function for water and waste water services on behalf of Scottish Water.

The intention of the original WIC 4 request, sent in August 2000, was to ensure that the domestic customer base in Scotland was clearly understood. We also wanted to ascertain whether the revenue generated and collected by the local authorities was consistent with the customer base.

These reports provide customer numbers, split by local authority area and by Council Tax band, and any applicable discount (as these affect the level of customers' bills). In addition, the WIC 4 reports also include information regarding debt levels for each local authority area.

Analysis of WIC 4 reports allows us to reconcile expected revenue with that declared in Scottish Water's annual accounts. It also allows us to assess the performance of the local authorities in collecting debt on Scottish Water's behalf (and consequently, whether the service provided by the local authorities represents value for money).

WIC 5 Customer service performance return

This quarterly information return requires Scottish Water to report on customer service performance. This is a detailed report, intended to cover the major areas of customer service. The information required in each report includes:

- number of written contacts received by Scottish Water in the quarter;
- number of telephone contacts received by Scottish Water in the quarter;
- number of enquiries received by Scottish Water and their speed of response in the quarter;
- number of complaints received by Scottish Water, complaint type and speed of response in the quarter;

- number of telephone calls received, answering speed by call centre staff and number of calls abandoned by the customer, in the quarter;
- number of planned interruptions of supply and Scottish Water's response time to these in the quarter;
- number of unplanned interruptions of supply and Scottish Water's response time to these in the quarter;
- number of septic tanks emptied by Scottish Water in the quarter and their response time to emptying requests from customers;
- number of sewer flooding incidents dealt with by Scottish Water in the quarter;
- keeping appointments in the quarter, where Scottish Water staff may go out to visit a customer either in a morning, afternoon or during a specific two hour time band; and
- Guaranteed Minimum Payments made in the quarter where Scottish Water has had to make a payment to customers for failure to meet their guaranteed minimum standards of service.

This information allows us to monitor customer service performance on a quarterly basis, in addition to the annual information that is submitted as part of the Annual Return. It enables us to spot trends and seasonal variations and provides supporting information for analysis of particular customer service issues.

WIC6 Quality performance assessments (written)

This submission allows us to assess how well Scottish Water handles customer complaints. It examines the quality of responses to customers to ensure that overall service is not compromised by the speed of response (as reported in WIC 5).

A random sample of complaints is assessed against a set of criteria with 'yes' or 'no' outcomes. These include whether:

- the complaint was dealt with by the correct person within Scottish Water;
- the response addressed the substance of the complaint;
- the response was written in plain English and avoided jargon;
- the tone of the response was fitting;
- the handling of the complaint complied with Scottish Water's Guaranteed Minimum Standards;
- compensation or any ex-gratia payment was made for failure to comply with Guaranteed Minimum Standards; and
- the handling of the customer's correspondence was carried out to a high standard.

We award scores against these criteria to create a percentage score for each complaint. We expect the response to each complaint to achieve a score of 98% or higher and we assess the percentage of complaints meeting this standard.

WIC 18 Quality and Standards final output

This submission details the baseline investment programme for *Quality and Standards II*. The *Quality and Standards II* process sets out the environmental and drinking water standards that Scottish Water must meet and estimates the investment required to carry this out for the period April 2002 to March 2006. This investment requirement helps the Commissioner to arrive at the advice he gives to the Scottish Executive on charging levels.

The first WIC 18 submissions were requested from the three former water authorities in May 2001. They required the authorities to provide a full list of projects associated with the *Quality and Standards II* investment programme.

Over the last three years there has been an ongoing process to define these projects in the level of detail

required by the regulators (the Scottish Executive, SEPA, the DWQR and this Office). The baseline programme has recently been established to an acceptable level of detail. This submission is particularly important for the Strategic Review, as it enables detailed analysis of Scottish Water's performance in the delivery of the *Quality and Standards II* investment programme.

Baseline investment programme for Quality & Standards III

This submission will be equivalent to the WIC 18 submission detailed above for *Quality & Standards III*. *Quality & Standards III* will take effect from April 2006 and will set out the targets for Scottish Water to meet in terms of environmental and public health requirements. It will also spell out the investment required to be made by Scottish Water to improve and update the existing network to comply with these requirements. For *Quality and Standards III* the baseline investment programme will be defined as part of the second draft Business Plan submission. The draft baseline investment programme submission by Scottish Water is due by the end of October 2004 and the 2nd draft Business Plan submission (including the final investment programme) is due on 20 April 2005. The submission will include a full list of the projects that will fall under the *Quality & Standards III* programme.

WIC 19 Investment appraisal audits

This is an annual assessment of Scottish Water's investment appraisal performance.

At the *Strategic Review of Charges 2002-06*, we raised concerns about the level of scrutiny and challenge given by the three former authorities to projects as they passed through the appraisal process. We decided to carry out investment appraisal audits to highlight those areas that were falling short of best practice and those which were areas of strength.

The results from our first investment appraisal audit in September 2001 were reported in our *Investment and Asset Management Report 2000-02*. The audit identified significant opportunities for improvement in all three former authorities.

In November 2003 we repeated the audit to review Scottish Water's performance against industry best practice and to highlight improvement made since the previous audit. This second round of project audits followed the same process as the original exercise, ensuring that comparisons could be drawn with the previous results.

We propose to carry out a third investment appraisal audit in December 2004. This will form a key input to the assessment of Scottish Water's asset management performance and the scope for capital efficiencies. The results of this audit will be published on our web-site.

WIC 24 Leakage strategy

This information request requires Scottish Water to provide us with up to date information about its leakage strategy. The original WIC 24 letter, issued in December 2001, asked the three former authorities to explain their current leakage strategy to us. We asked them to include in their submissions their views on the following issues:

- Their strategy for moving towards the economic level of leakage – It is important that the strategy should recognise that economic levels of leakage will vary in different areas of the country because of factors such as supply availability;
- Metering of source output – The true extent of water loss in the network must be understood if Scottish Water is to reduce leakage to an economically sustainable level. In England and Wales, the companies use network metering and water balance modelling to understand and manage leakage. We would like to see a similar practice adopted in Scotland; and
- The impact of the capital programme – Capital investment in replacing the underground network and installing better leak detection, metering and modelling facilities will impact on leakage. It is important that the link between capital investment and leakage rates is fully understood so that investment targeted at leakage is employed in a cost-effective way, and so that maximum benefit is

obtained from other related work within the capital programme.

Scottish Water submitted a leakage strategy in February 2004 and we have subsequently discussed this strategy with them. Our expectation is that Scottish Water is pursuing the strategy outlined in the document and we will be following this up as part of the Strategic Review of Charges.

Leakage control also forms part of the *Quality and Standards III* investment programme. In assessing the investment programme for the Strategic Review programme, we will be looking for properly defined investment proposals and associated output targets relating to reducing leakage to an economically sustainable level.

WIC 25 Resource accounting and budgeting (RAB)

We use the monthly RAB returns as an essential part of our monitoring of Scottish Water's financial progress. The returns provide a detailed breakdown of Scottish Water's financial performance over the preceding month and chart progress against annual budgets. This information supplements that provided in the Annual Return, and allows us to monitor progress on a monthly basis against the financial targets set out in the Strategic Review of Charges. The accompanying commentary provides explanations for variances against annual targets and allows areas of concern to be quickly identified.

The format of the monthly RAB return was defined in the WIC 25 letter that was sent to Scottish Water in January 2002. The key information elements of the Return are:

At the start of each year:

- budget forecasts.

On a quarterly basis:

- analysis of above-ground fixed asset cost and depreciation;
- analysis of infrastructure asset cost and depreciation;

- analysis of total assets;
- cost of capital; and
- analysis of exceptional items and asset disposals.

On a monthly basis, information for the previous month and against budget on:

- income and expenditure;
- balance sheet;
- changes in working capital;
- cash flow;
- reconciliation of operating surplus to net cash flow;
- summary analysis of fixed assets;
- income analysis – water service;
- income analysis – waste water service;
- analysis of operating costs; and
- audit trail of revisions to forecasts.

WIC 43 Annual Return

The Annual Return is the largest single information request we ask for each year. The format of the Return, and the information we ask for, is based very closely on Ofwat's June Return; this allows us to benchmark Scottish Water with English and Welsh companies. However, to ensure that the Return is wholly applicable to Scotland we have made a number of amendments to the information that we request.

The Return is a robust and detailed set of information on each area of Scottish Water's water and waste water business and all associated costs. It focuses in the main on information relating to the previous financial year, although in some cases it also seeks forward projections.

Each year we require Scottish Water to return a set of completed tables on its water, waste water and other support services. Scottish Water must also submit

supporting documentation. The first piece of supporting documentation is the Overview. In this document, Scottish Water should indicate the key points that it wishes to draw to the Commissioner's attention. The Overview should be approximately 3,000 words long and be signed by the Chairman or Chief Executive on behalf of Scottish Water. The Overview must confirm that it has been endorsed by Scottish Water's Board.

The second piece of supporting documentation is the Chapter Commentary. In this Commentary, Scottish Water should comment on the source of the information and any material assumptions and/or adjustments that have been made prior to entering information in the tables. The commentary should be prepared in a way that allows us to read it in conjunction with any analysis carried out. The commentary is a fairly lengthy document with approximately 1 page of information per table submitted. The content and quality of this document is expected to be of a high standard, so that proper, fair and objective comparisons can be made.

The third piece of supporting documentation required to be submitted by Scottish Water is an Output Measures Methodology. This document provides an index to the Annual Return, containing information on the methodology and procedures being adopted to provide numerical information. The methodology statement should be a clear and concise explanation of the process involved in producing the reported information. It should include an explanation of the source of any measurements, a description of Scottish Water-specific systems and details of the coverage achieved by various reporting systems. For example, it should include information about the use of extrapolation in arriving at the reported figures. In short, any assumptions made by Scottish Water in reporting this information must be disclosed.

We use the information collected in the Return to calculate efficiency targets, monitor expenditure, reconcile movements in costs, assess levels of service to customers, track investment programmes, and to assess compliance with environmental and drinking water standards. We also use it to compare Scottish Water's performance with that of the companies in England and Wales.

The quality of the information provided in the Annual Return has a significant impact on our ability to carry out accurate benchmarking. In particular, all of the commentary documents should be as complete, accurate and relevant as possible. We also expect Scottish Water to take particular care in ensuring that there are no inconsistencies between the commentary and tables.

We summarise below the information that is collected within each section of the Return, and identify which team within this Office is responsible for analysing the information.

SECTION	TABLE
A - BASE INFORMATION (Revenue and Tariffs/ Costs and Performance)	A1: Properties & population (water) A2: Volumes (water) A3: Properties & population (waste water) A4: Volumes (waste water)
B - OUTPUTS TO CUSTOMERS (Competition and Customer Service)	B1: Water availability B2: Pressure and interruptions B3: Sewage pressure B4: Customer care (enquiries) B5: Customer care (complaints) B6: Customer care (other) B7: Customer care (GMS performance)
C - QUALITY & ENVIRONMENTAL OUTPUTS (Investment and Asset Management)	C1: Water quality outputs (compliance) C2: Water quality outputs (asset performance) C3: New obligations (water) C4: Waste water quality outputs (compliance) C5: Waste water quality outputs (asset performance) C6: Waste water quality outputs (new obligations) C7: Quality and environmental outputs (water mains activities) C8: Quality and environmental outputs (sewer activities)
D - ASSET PERFORMANCE (Investment and Asset Management)	D1: Workload commissioned assets (water service) D2: Workload commissioned assets (waste water service) D3: Workload commissioned assets (support services) D4: Asset changes (water, waste water and support services) D5: Asset performance and activities (water service) D6: Asset performance and activities (waste water service)

SECTION	TABLE
E - OPERATING COSTS & EFFICIENCY (Costs and Performance)	E1: Activity based costing (water service) E2: Activity Based Costing (waste water service) E3: PPP project analysis E4: Explanatory factors (water resource and treatment) E5: Large water treatment works (information database) E6: Water explanatory factors (distribution) E7: Waste water explanatory factors (sewerage) E8: Waste water explanatory factors (sewage treatment works) E9: Large sewage treatment works (information database) E10: Explanatory factors (waste water: sludge treatment and disposal) E11: Management and general
F - STATUTORY ACCOUNTS (All)	F1: Income and expenditure account F2: Balance sheet F3: Analysis of borrowing F3a: Analysis of borrowing by interest rate and date of maturity F4: Analysis of debtors and creditors F5: Cash flow parameters F6: Working capital F7: Cash flow statement F8: Reconciliation of operating surplus (deficits) to net cash flow from operating activities F9: Analysis of fixed assets by asset type (for report year) F10: Analysis of income
(Revenue and Tariffs)	
G - INVESTMENT PLAN (ACTUALS AND FORECASTS) (Investment and Asset Management)	G1: Purpose summary (water service) G2: Purpose summary (waste water service) G3: Output quality (water service) G4: Output quality (waste water service) G5: Project analysis (water service) G6: Project analysis (waste water service)
H - ASSET INVENTORY & SYSTEM PERFORMANCE (Investment and Asset Management)	H1 & H11: Summary H2 & H12: Water non-infrastructure H3 & H13: Water infrastructure H4 & H14: Waste water infrastructure H5 & H15: Waste water non-infrastructure H6 & H16: Support services H7, H8 & H9: Reference tables H1-H6: Inventory and system performance – current H11-H16: Inventory and system performance – in the future

SECTION	TABLE
J - SUPPLEMENTARY INFORMATION COST BASE (Cost and Performance/ Investment and Asset Management)	J1: Water infrastructure Standard costs J2: Water mains - Projected expenditure J3: Sewerage Infrastructure Standard costs J4: Sewerage Infrastructure - Projected expenditure J5: Water non-infrastructure Standard costs J6: Non-infrastructure Standard Sewerage costs J7: Composition of Investment by Asset Type - Water service J8: Composition of Investment by Asset Type - Sewerage service
K - INVESTMENT PLAN (Investment and Asset Management)	K1-K6: Completed only in the year of the Strategic Review of Charges It is in the same format as the G tables – G is a yearly update of K.

We hold returns from 1999-2000 onwards for the three former authorities. For 2001-02, Annual Returns were submitted by each of these authorities, followed by a consolidated Return representing collated information for the newly formed Scottish Water. Since 2002-03, Scottish Water has been responsible for submitting a single return.

WIC 45 Regulatory accounting (and transfer pricing)

We have asked Scottish Water to submit draft submissions of these tables during 2004-05, in order to refine the tables (through a feedback and workshop process) before their full introduction from March 2005. The reasons for issuing these draft Regulatory Accounting Tables are to:

- identify the core and non-core businesses operated by Scottish Water;
- identify separately the retail and wholesale segments of the core business that is currently performed by Scottish Water, and to provide separate reporting frameworks for these businesses; and
- develop regulatory accounting guidelines and submissions in order to be able to analyse and regulate the retail and wholesale segments of the water industry in Scotland.

The key information elements of this required submission are:

Table M1 – Activity-based costing – water service,
Table M2 – Activity-based costing – waste water service.

Both tables collect cost information (together with required commentary) under the following headings:

- service analysis – water/waste water as applicable: direct costs;
- operating expenditure;
- reactive and planned maintenance;
- capital maintenance; and
- PPP costs.

Scheme of charges

Scottish Water submits to us its proposed charges for the following financial year in a 'scheme of charges'. We approve the scheme of charges if we determine that the proposed charges are fair and consistent with our advice approved by Ministers in October 2001 following the *Strategic Review of Charges 2002-06*.

The main information required in this submission is as follows:

- charges communication timeplan – the various activities that Scottish Water plans to undertake to inform the public and other customer representatives of its charges scheme for the following year;
- charging explanation – the basis upon which Scottish Water has prepared its scheme of charges submission;
- revenue profile and customer base – Scottish Water's assumptions on how revenue in its proposed scheme of charges will be derived from customer groups and secondary services and what assumptions have been made about the customer base;
- household charges – the basis upon which Scottish Water will levy household water and waste water charges, both for measured and unmeasured households;

- business charges – the basis upon which Scottish Water will levy business water and waste water charges, both for measured and unmeasured businesses; and
- secondary charges for secondary services (for example, septic tank emptying) – where Scottish Water has to provide a full list of these services and its proposed charges.

Within these categories, information should also be provided, where appropriate, concerning:

- proposed refinement to water and waste water charges – Scottish Water should detail its proposals and provide a cost justification for any proposed changes to tariffs;
- proposed refinements to the application of property and roads drainage charges – Scottish Water should again detail its proposals and provide a cost justification;
- refinements to debt recovery measures – again, Scottish Water should detail its proposals and provide a cost justification;
- proposed secondary charges for forthcoming year(s) – a breakdown of the proposed charges, together with the percentage increase/decrease on the previous year; and
- revenue from primary tariffs – a breakdown of the projected revenue from primary charges (domestic, non-domestic, measured, non-measured and trade effluent).

CIR Capital Investment Return

Scottish Water submits annual information relating to its investment programme through Section G of the Annual Return. In addition to this submission, Scottish Water also completes a Capital Investment Return (CIR) on a quarterly basis. The CIR provides details on the projects comprising the capital investment programme at the end of each quarter of the financial year. The information in this Return includes:

- forecast and actual project spend;
- physical progress towards defined milestones; and

- explanations of financial variances.

The CIR enables us to monitor Scottish Water's progress towards completion of the physical and financial outputs of the investment programme, as signed up to by all stakeholders.

Although no equivalent submission is made in England and Wales, the CIR will be brought under the auditing regime of the Reporter in Scotland. We are currently working with the Reporter to further develop our guidance for completion of the CIR.

SBP Strategic Business Plan

A key element of the process for the 2005 Strategic Review of Charges will be the submission by Scottish Water of its first and second draft Business plans for the next Review period. The Business Plan submission augments the information contained in other regulatory returns, and sets out Scottish Water's strategy and objectives for the next regulatory period.

Ministers have asked Scottish Water to submit, jointly to the Scottish Executive and to this Office, a 1st draft Business Plan by 29 October 2004. We provided Scottish Water with detailed guidance on the content and format of this 1st draft on 25 June 2004.

The Executive provided high-level Guidance on 26 May 2004 asking that the draft Business Plan should:

- draw on the evidence emerging from the *Quality and Standards III* investment planning process;
- provide an assessment of Scottish Water's objectives for its core business, in the light of the Executive's initial views on public policy considerations;
- indicate how these objectives should be delivered;
- inform the early stages of our work on the Strategic Review; and
- inform the Executive's decisions on the objectives that Scottish Water is to deliver during the regulatory period.

In our detailed guidance for the 1st draft Business Plan we set out our information requirements and provided detailed descriptions of the information we require. This included financial information, information about the proposed investment programme and expected outcomes for environmental performance and customer service levels.

This 1st draft Business Plan will inform the early stages of the Strategic Review and will allow initial analysis of Scottish Water's funding requirements. There is then a second iteration of the Business Plan. We will provide guidance on our requirements for this 2nd draft Plan in December 2004. The Executive will issue detailed objectives and public expenditure assumptions for Scottish Water by the end of January 2005. Scottish Water will then submit its 2nd Business Plan in April 2005, taking this information into account. This is Scottish Water's principal opportunity to influence the outcome of the Strategic Review.

7.7 The regulatory letters (the 'WIC' letters)

From time to time we issue regulatory letters to Scottish Water. These are similar to the Managing Director (MD) and Regulatory Director (RD) letters that Ofwat issues to the companies in England and Wales. The WIC letters often ask for information relating to various aspects of Scottish Water's activities that would not otherwise be collected as part of the regulatory regime. These information requests are vital to the analysis performed by our Office.

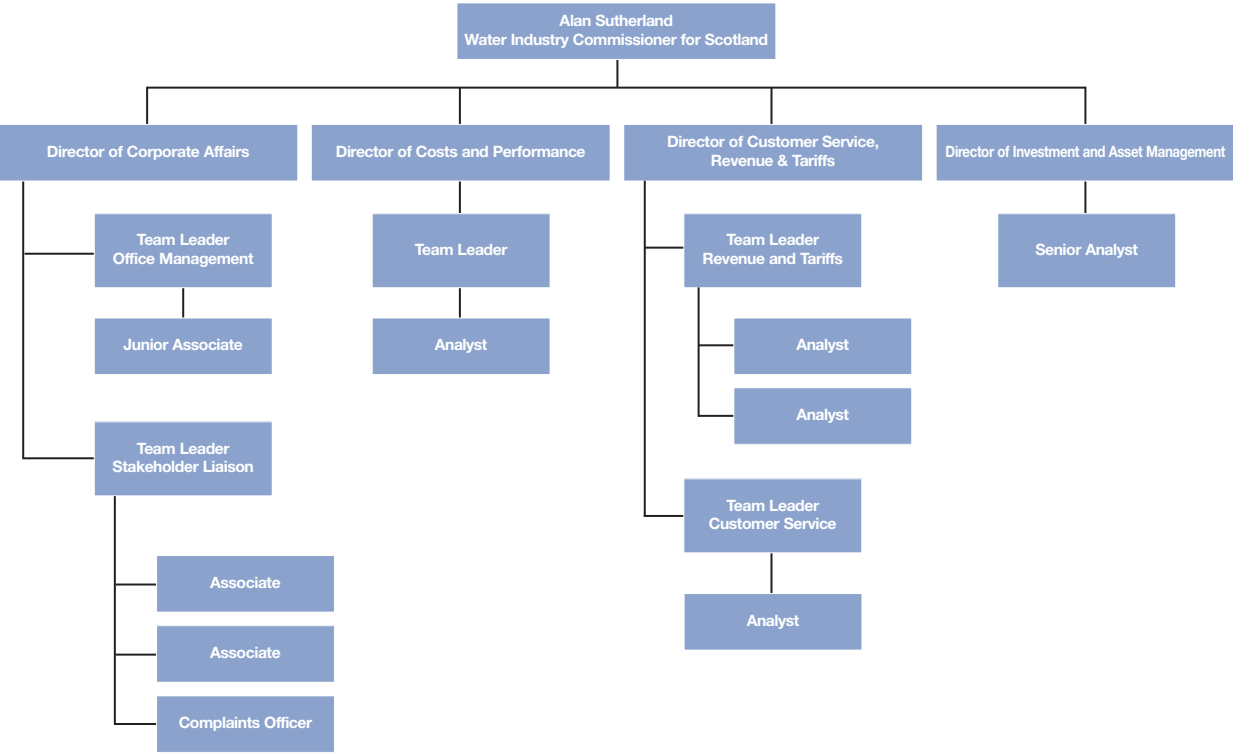
Each letter is given a unique code and title, for ease of reference, and may be reissued when a request for information needs to be repeated. Where appropriate (for example with Capital Investment Returns), the recently appointed Reporter is asked to scrutinise the responses to WIC letters from Scottish Water. Copies of WIC letters issued are also sent to the Scottish Executive and published on our website.

A list of WIC letters issued to date is presented in the following table. The letters are reproduced in full in Appendix 2.

Reference	Title	Date of first issue
WIC 1	Commercially sensitive customer revenue information and data request	27 April 2000
WIC 2	Planned investment programme	2 May 2000
WIC 3	Review of infrastructure renewal and maintenance	22 May 2000
WIC 4	Household data request	8 August 2000
WIC 5	Customer service performance reports	21 June 2000
WIC 6	Quality performance assessments	22 August 2000
WIC 7	Scheme of charges 2001-02	6 October 2000
WIC 8	Dates for submission of information project data	10 November 2000
WIC 9	Non-domestic debt data request	20 December 2000
WIC 10	Information project action plan	28 February 2001
WIC 11	Not used	-
WIC 12	New opex and 'spend to save'	7 March 2001
WIC 13	Efficiency analysis: impact of PPP schemes	7 May 2001
WIC 14	Special agreements for large customers	18 May 2001
WIC 15	Capital investment and efficiencies	18 May 2001
WIC 16	Development constraints and rural sewage connections	28 May 2001
WIC 17	Data accuracy	29 May 2001
WIC 18	Quality and Standards final output	30 May 2001
WIC 19	Investment appraisal project	1 June 2001
WIC 20	Request for data relating to depots, laboratories and office buildings	6 June 2001
WIC 21	Critical information for the Strategic Review of Charges	29 June 2001
WIC 22	Customer revenue information and data request	19 October 2001
WIC 23	Capex monitoring	21 November 2001
WIC 24	Leakage	21 December 2001
WIC 25	Monthly submission of RAB tables	11 January 2002
WIC 26	Revised action plans	15 January 2002
WIC 27	Dates for submission of information to the WIC	8 February 2002
WIC 28	Procedure for information returns	2 April 2002
WIC 29	WIC Annual Return	12 April 2002
WIC 30	Accounting separation	4 October 2002
WIC 31	Dates for submission of information to the WIC 2003-04	17 March 2003
WIC 32	Quality and Standards I	11 February 2003
WIC 33	Annual Return 2003-04	11 April 2003
WIC 34	T tables 2003-04 to 2005-06	1 April 2003
WIC 35	Not used	-
WIC 36	Regulatory dialogue and progress monitoring	28 August 2003
WIC 37	Data for serviceability models	30 September 2003
WIC 38	Publication of Annual Return and investment programme information	22 October 2003
WIC 39	Ongoing development of Quality and Standards II capital investment programme	22 October 2003
WIC 40	Strategic Review of Charges 2005	12 December 2003
WIC 41	Reconciliation of WIC18 with Finance Committee submission	2 March 2004
WIC 42	Dates for submission of information to the WIC 2004-05	8 April 2004
WIC 43	Annual Return 2003-04	23 April 2004
WIC 44	Finalisation of the WIC18 baseline for Quality and Standards II	12 May 2004
WIC 45	Draft Accounting Separation Tables	27 May 2004

Appendix 1

Current organisational structure of the Water Industry Commissioner for Scotland



Appendix 2: Regulatory letters ('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 is used to establish a base for expected non-household revenue streams, and to monitor any material movements from this base.
WIC 2	Investment programme monitoring – advises the requirements for the monitoring of delivery of investment via the Planned Investment Return and the Investment Quarterly Return.
WIC 3	Review of infrastructure renewal & maintenance – request for estimates of asset condition and replacement costs to assist with Quality and Standards process.
WIC 4	Household revenue information and data request – request for details of domestic customer numbers, billing and collection levels, details of any relief of charges and analysis of secondary income. This information is used to monitor revenue from households and aids understanding of the issues of affordability and collectability.
WIC 5	Customer Service Performance Reports – expected requirements for the monitoring of the provision of customer service in general and Guaranteed Minimum Standards in particular, by way of three specified reports.
WIC 6	Quality performance assessments – our intention to introduce quality performance assessments of written complaints received by the water authorities as an independent monitor of the service actually received by customers.
WIC 7	Scheme of charges 2001-02 – request for authorities to submit proposed scheme of charges for the following year and supporting data.
WIC 8	Dates for submission of information to this Office – clarification on timing and content of our information requirements following on from the Information Project.
WIC 9	Non-domestic debt analysis – request for analysis of non-domestic debt figures to allow us to monitor the financial impact of debt levels and assess the efficiency of the authority's collection systems.
WIC 10	Information Project Action Plan – our feedback to the three authorities on the content of their Action Plans.
WIC 11	Not used.
WIC 12	New Opex and Spend to Save – our criteria for assessing the water authority's case for additional expenditure on new operating expenditure and 'Spend to Save' initiative.
WIC 13	Efficiency analysis – impact of PPP schemes on controllable operating expenditure.
WIC 14	Special agreements for large customers – request for information to monitor the special agreements created throughout the year and the financial impact they will have on future charging schemes.
WIC 15	Capital investment and efficiencies – summary of investment profiling after efficiencies that will be incorporated in the 2005-06 Strategic Review.
WIC 16	Development constraints & rural sewage connections – request for costs and outputs of high priority investment plans.
WIC 17	Annual Return submissions – sign off data accuracy – required signatories for signing off Annual Return tables submitted to us.
WIC 18	Q & S final output – project level information to be included in Quality and Standards.
WIC 19	Investment Appraisal Project – discussion of involvement of water authorities in next phase of project and introduction of audit procedures to examine investment appraisal processes.
WIC 20	Request for data relating to depots, labs & office buildings – request for information to assess any possible impact of changes due to the inception of Scottish Water and any impact on operating expenditure.
WIC 21	Critical information for Strategic Review of Charges – request for information on WIC 1, inter authority trading, value chain analysis retail and capital investment.
WIC 22	Request for full response to WIC 1 request for full financial year 2000-01 and six months to 30 September 2001. Also request for information about number of meters, meter sizes and any special arrangements. A format was attached for this information.
WIC 23	Notification to Scottish Water of the post-efficiency profile of capital investment for each authority contained in the Review. Monitoring of capital investment programmes for 2002-06 Quality and Standards.
WIC 24	Request for a submission of the authority's strategy for tackling leakage.

WIC 25	Requirement for Scottish Water to provide monthly resource accounting and budgeting tables (RAB tables). These financial performance tables allow us to monitor financial trends and performance against targets.
WIC 26	Request for current status report on work undertaken by the Scottish Water Transition Team and revised Action Plans to be submitted to this Office.
WIC 27	Dates for submission of information to us – clarification on timing and content of our information requirements for the year 2002-03.
WIC 28	Procedure of information returns between this Office and Scottish Water: establishment of formal criteria to be followed for the submission of information requested by us, including sign-off procedures to be followed.
WIC 29	Annual Return submissions (2001-02) – sign off data accuracy – required signatories for signing off Annual Return tables submitted to us.
WIC 30	Accounting separation: following on from the Strategic Review of Charges and the Minister's acceptance of the Commissioner's advice that accounting separation be implemented into certain elements of Scottish Water's business, this letter outlines the Commissioner's initial thoughts on taking this forward; including first thoughts on the elements that constitute core, non-core, retail, and non-retail activities.
WIC 31	Dates for submission of information to us for the year 2003-04 – clarification on timing and content.
WIC 32	Quality and Standards I project list. In order to identify the Quality & Standards I projects that were not completed prior to the creation of Scottish Water, we request information on status of projects. This is important for establishing the baseline for Quality and Standards II.
WIC 33	Annual Return submissions (2002-03) – sign off data accuracy – required signatories for signing off Annual Return tables submitted to us.
WIC 34	Strategic Business Plan submission – detailed income and expenditure projections 2003-04 to 2005-06. This information submission, referred to as 'T tables' is required to support the analysis of the Business Plan submission.
WIC 35	Not used.
WIC 36	Communication and progress monitoring: suggested framework for meetings between this Office and Scottish Water to deal with regulatory issues.
WIC 37	Request from this Office to Scottish Water seeking to establish the extent to which data exists to populate a capital maintenance serviceability model. Request in two parts: 1) provide information on the availability of the data; and 2) provision of the available data.
WIC 38	Publication of Annual Return: following on from numerous requests from customers for the publication of Annual Return data, this letter to Scottish Water outlines our intention to place all Annual Return 2002-03 information in the public domain.
WIC 39	Finalisation of the Quality & Standards II capital investment programme: letter summarises the current definition of the Q&S II capital investment programme and the development of the WIC 18 list – this letter reviews progress and agrees steps forward on both matters.
WIC 40	Strategic Review of Charges 2006: draft timeline for the next Strategic Review of Charges period issued to Scottish Water, outlining key information requirements and dates.
WIC 41	Reconciliation of WIC 18 with Finance Committee submission of 23/02/04: request to Scottish Water to provide a reconciliation of the current (at date of the letter) WIC 18 list (version 2.1) to the table in Alan Alexander's (Chairman, Scottish Water) letter of 23/02/04 to the Finance Committee of the Scottish Parliament headed 'Scottish Water Capital Investment Programme'.
WIC 42	Dates for submission of information to us – clarification on timing and content of our information requirements for the year 2004-05.
WIC 43	Annual Return submissions (2003-04) – sign off data accuracy – required signatories for signing off Annual Return tables submitted to this Office.
WIC 44	Finalisation of the WIC 18 baseline for Quality and Standards II: confirmation provided as to the sequence of events for finalising the WIC 18 process.
WIC 45	Draft accounting separation tables: following on from WIC 30, this letter provides a set of first draft tables for the collection of information on Scottish Water's operating costs. A timeline for submission, refinement and dialogue exchange within the Strategic Review of Charges process is supplied, and formal feedback is invited from Scottish Water.

27 April 2000

**To Chief Executive of: East of Scotland Water Authority
North of Scotland Water Authority
West of Scotland Water Authority**

**WIC 1: COMMERCIALLY SENSITIVE CUSTOMER REVENUE
INFORMATION AND DATA REQUEST**

1. Commercially sensitive information

In carrying out our functions as regulators we may request information from your organisation which is commercially sensitive, particularly in light of the Competition Act 1998. Any information marked 'Commercial in Confidence' will be restricted in its distribution within this office and will not be disclosed to any third parties without your express permission. The information will be securely filed in the office.

2. Customer data request

I would be grateful if you would provide the information detailed below relating to non-household customers. The data should relate to actual figures for the year 1999-2000 and budgeted figures for the year 2000-01. We would like to receive more detail for larger users and our request is detailed below.

a. For customers with water volumes > 100,000m³

- Customer name
- Volume of water
- Water bill
- Rateable value
- Sewerage bill
- Trade effluent bill
- Number of customer sites
- Site locations
- Customer business sector

I am aware that information on the above was supplied previously but using 1998-99 data and part 1999-2000 data.

b. For customers with water volumes < 100,000m³

- Total number of non-household customers by customer business sector
- Total volume of water by customer business sector
- Total water bill by customer business sector
- Total rateable value by customer business sector
- Total sewerage bill by customer business sector
- Total trade effluent bill by customer business sector
- Number of customer sites by customer business sector

This information for customers with water volumes < 100,000m³ should be split using the following bandings:

- 50,000-100,000m³
- 25,000-50,000m³
- 10,000-25,000m³
- 1,000-10,000m³
- <1,000m³

c. For customers who have unmeasured water volumes > £250,000 rateable value

- Customer name
- Water bill
- Rateable value
- Sewerage bill
- Trade effluent bill
- Number of customer sites
- Site locations
- Customer business sector

d. For customers who have unmeasured water volumes < £250,000 rateable value

- Total number of non-household customers by customer business sector
- Total water bill by customer business sector
- Total rateable value by customer business sector
- Total sewerage bill by customer business sector
- Total trade effluent bill by customer business sector
- Number of customer sites by customer business sector

This information for customers with rateable values < £250,000 should be split using the following bandings:

- £100,000-£250,000
- £50,000-£100,000
- £25,000-£50,000
- £10,000-£25,000
- < £10,000

I intend to use this information to establish a base for expected non-household revenue streams, and to monitor any material movements from this base.

I would require actual information on a quarterly basis together with an analysis of any material variations against budget and previous quarter. Materiality is set at a movement of 10% or greater on individual 'large user' balances (ie consumption > 100,000m³ or rateable value > £250,000). Materiality for small and medium users is also 10%, calculated on the total balances within the defined bandings.

If the customer information is available across different systems you should try where possible to match specific customer information in your analysis without losing visibility of the detail required above.

I understand that it may be difficult to collate with current system limitations. However I feel it is essential for the monitoring of the non-household customer base. I would be willing to provide limited resource to assist in the preparation of this information should it be required. Please contact XXXX or XXXX if you need further clarification on the information requirements.

You should aim to provide a first cut of this information by Friday 19 May 2000.

Please find attached appendices detailing our required layout and business sector split. For your information find enclosed the large user analysis completed by my finance team using the information provided by your team.

Yours sincerely

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

WIC 2: INVESTMENT PROGRAMME MONITORING

In my letter of 6 March I advised the expected level of investment in 2000-01 by XXXX of Scotland Water Authority. This letter advises my requirements for the monitoring of delivery of this investment, by means of two returns, the Water Industry Commissioner's Planned Investment Return and the Investment Quarterly Return. This latter return, as outlined below, is designed not to revisit each investment project each quarter but rather to highlight material changes.

Ongoing independent monitoring of investment progress – both as regards value for money and achieved quality outputs – will be critical as public scrutiny of the industry increases. The attached returns are likely to be integral both to the Quality and Standards and asset management initiatives. To that end, quality drivers have been added to the attached Planned Investment Return.

Investment and the price cap

In the Strategic Review of Charges 2000-01 and 2001-02 I agreed with your requirement for a total investment spend by XXXX of Scotland Authority in 2000-01 of [East: £180 million, North: £156 million, West: £198 million]. This was divided into three categories: Backlog, Infrastructure Replacement and Other Investment as outlined below:

	East	North	West
➤ Backlog	£53million	£27million	£60million
➤ Infrastructure Replacement	£30million	£40million	£42million
➤ Other Investment	<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 2000-03, as approved by the authority Board. The total of investment for 2000-01 reported in the return is expected to be [East: £147.5 million, North: £128 million, West: £152 million], as discussed above. New or amended project information to that shown on the enclosed return copy should be highlighted as stated in the notes on reporting requirements.

The Planned Investment Return will be shared with the quality regulators, the Scottish Environmental Protection Agency and the Water Quality team in the Scottish Executive, in order to ensure that it picks up all their best expectations of necessary investment in the period covered by this return.

The WIC Investment Quarterly Return

The purpose of the WIC Investment Quarterly Return (IQR) is to monitor progress, at project level on a quarterly basis, the investment programme reported in the PIR return. Sample copies, together with the related guidance, are attached. This will provide – for the first time – operational certainty for the water authority and for customers as to where charges levied will be spent.

You will notice that this return is very straightforward and need only be completed for projects where actual or forecast expenditure has materially changed. It is, therefore, a mechanism by which the planned investment return can be updated at minimum cost (in time and money) to the authority, whilst ensuring that all regulators know the latest status of all agreed projects.

The IQR Return will inform progress towards delivery of the expected investment level. Further, the project level information gathered will in due course inform my views on the cost effectiveness of the authority's investment expenditure.

I would take this opportunity of emphasising that the quarterly return is not expected to be onerous. The aim is to identify and highlight (both for the economic and quality regulators) material changes from the planned investment programme. Changes per se may be a cause for concern (project delays or cost overruns) but can equally be good news (efficiencies or earlier delivery of the desired outcome). The aim of the return is not to revisit each project during each quarter, but rather to focus only on the material changes from the expected plan.

The frequency and content of this return will be reviewed after three to four quarters. This review will ensure that I am collecting the information, which I require, in a manner which minimises the workload for the water authority. I will, of course, be open to suggestions which allow my goals to be met in terms of monitoring and project effectiveness assessment, but could reduce the workload for the water authority.

Programme of Returns

Completed returns are required no later than the dates shown below:

PIR Return	Friday 9 June 2000
WIQ Return Quarter 1	Friday 11 August 2000
WIQ Return Quarter 2	Friday 10 November 2000
WIQ Return Quarter 3	Friday 19 January 2001
WIQ Return Quarter 4	Friday 20 April 2001.

Consultation on the Returns

The format and content of the returns have been developed in consultation with your officials. For the IQR Return the consultation established that all the data points required are, or shortly will be, collected within the authorities' management information systems on a monthly basis and can be readily consolidated into quarterly returns.

In setting the dates for the returns I have responded to views put forward by authorities on the time required to provide accurate returns.

XXXX will provide directly to XXXX electronic copies of PIR and IQR Returns and guidance notes in the course of this week. XXXX will also provide any further information required.

Yours sincerely

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**

WIC 3: REVIEW OF INFRASTRUCTURE RENEWAL AND MAINTENANCE

The Scottish Executive has forwarded to all of us a timetable for the Quality and Standards Process. It is clearly in the interests of all of the authorities and in the interests of customers that investment be planned and costed in as rigorous a fashion as possible. You will note from the timetable that my Office has to review maintenance and infrastructure renewal options on a preliminary basis as an input to Phase One of the Quality and Standards process. We certainly appreciate that each of the water authorities is continuing to develop their understanding of the condition and performance of their above and below ground assets. However, we would appreciate receiving your current best estimates of asset condition and replacement cost as soon as practical. These cost estimates should not include any allowance for an incremental performance improvement.

I attach a matrix, which I would be grateful if you could complete. I also attach a copy of the Ofwat definitions of condition, to which I would be grateful if you could adhere as far as possible. If there is any doubt (other than that resulting from the level of statistical sampling which has been completed) in how an asset has been categorised, please reference this in a footnote. The expected life of each category of asset should also be entered. If an asset is costing more than 1/expected asset life, even if its performance is rated higher than 5, then that asset should be rated as a category 5 asset. In all such circumstances, please indicate by means of a further footnote, what the actual current performance of the asset is; and the estimated annual spend on maintenance.

I recognise that the data which you provide at this time will be provisional. Not only are the authorities all working to improve their understanding of their assets, but the asset management initiative will define in detail the definitions and procedures, which each of the authorities and this Office will use in order to ensure comparability. The information which you will provide will, however, be an important input to the costs of maintaining the existing infrastructure and dealing with past under-investment.

I will require this information by 30 May 2000. If I can provide any further information, please do not hesitate to contact me.

Yours sincerely

ALAN D A SUTHERLAND
Commissioner

08 Aug 2000

**To Chief Executive of: East of Scotland Water Authority
North of Scotland Water Authority
West of Scotland Water Authority**

WIC 4: HOUSEHOLD CUSTOMER REVENUE INFORMATION AND DATA REQUEST

I wrote to Finance Directors on 14 July 2000 requesting data on the number of households, billing and collection levels on a council tax banding and local authority area basis. I understand from the Finance Directors that such data needs to be collected from the local authorities, which will require negotiations with and computer programming by the local authorities to ensure delivery.

Given that this is the situation, I would take the opportunity to go further in my request and obtain data that will be useful in not only monitoring revenue from households but also understanding the issues of affordability and collectability backed up by data.

The information on households, along with the analysis of secondary income included in my request of 14 July, will complete the revenue picture of the authorities. As you know, I have already received customer and revenue data on non-households and discussions are on-going with your staff on how the data submitted can be improved. The Strategic Review of Charges recommended the revenue level required for the two-year period to March 2002. The data I have requested will allow us both to monitor revenue on an on-going basis and to ensure that those levels endorsed by the Minister are achieved.

Attached is a schedule summarising the data request and I would be pleased if this is completed for the year ending 31 March 2000 for each local authority area. The data provided should be reconciled to the figures that are included in your final accounts for 1999-2000. You will note that Rating Disabled Properties have to be reported on at their adjusted Council Tax Band. There is a further schedule relating to households that are metered, albeit there are few, and I would expect that this return would be able to be completed from data already held within your own database. I require both the returns to be made on a quarterly basis.

Please advise me as soon as possible of when you will be in a position to provide data for the year to 31 March 2000 and for the current year.

Please contact me if you need further clarification on the above information requirement.

Yours sincerely

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		1999-2000		Debt Outstanding 2000-01				
	Outstanding debt at 31/3/00 attributable to 1996-97	Properties in Debt	Outstanding debt at 31/3/00 attributable to 1997-98	Properties in Debt	Outstanding debt at 31/3/00 attributable to 1998-99	Properties in Debt	Outstanding debt at 31/3/00 attributable to 1999-2000	Properties in Debt	Up to 30 days (attributable to billing year)	Between 30 and 60 days (attributable to billing year)	Between 60 & 120 days (attributable to billing year)	Between 120 & 180 days (attributable to billing year)	Above 180 days (attributable to billing year)
Council Tax Benefit	£	Nr	£	Nr	£	Nr	£	Nr	£	£	£	£	£
No Benefit													
Band A Partial Benefit													
Full Benefit													
No Benefit													
Band B Partial Benefit													
Full Benefit													
No Benefit													
Band C Partial Benefit													
Full Benefit													
No Benefit													
Band D Partial Benefit													
Full Benefit													
No Benefit													
Band E Partial Benefit													
Full Benefit													
No Benefit													
Band F Partial Benefit													
Full Benefit													
No Benefit													
Band G Partial Benefit													
Full Benefit													
No Benefit													
Band H Partial Benefit													
Full Benefit													

WIC 4: HOUSEHOLD DATA REQUEST

Date Produced

Debt	1996-97		1997-98		1998-99		1999-2000		Debt Outstanding 2000-01				
	Outstanding debt at 31/3/00 attributable to 1996-97	Properties in Debt	Outstanding debt at 31/3/00 attributable to 1997-98	Properties in Debt	Outstanding debt at 31/3/00 attributable to 1998-99	Properties in Debt	Outstanding debt at 31/3/00 attributable to 1999-2000	Properties in Debt	Up to 30 days (attributable to billing year)	Between 30 and 60 days (attributable to billing year)	Between 60 & 120 days (attributable to billing year)	Between 120 & 180 days (attributable to billing year)	Above 180 days (attributable to billing year)
Council Tax Benefit	£	Nr	£	Nr	£	Nr	£	Nr	£	£	£	£	£

21 June 2000

**To Chief Executive of: East of Scotland Water Authority
North of Scotland Water Authority
West of Scotland Water Authority**

WIC 5: CUSTOMER SERVICE PERFORMANCE REPORTING

This letter is to advise of my expected requirements for the monitoring of the provision of customer service in general and Guaranteed Minimum Standards in particular, by way of three reports discussed below. It will, of course, not be possible to define final monitoring requirements until the results of the current consultation exercise are available.

Ongoing independent measurement and monitoring of customer service provision is crucial in ensuring that customers receive a consistent and quality service, providing value for money. Customer service provision is equally critical in customer perception of the industry and so accountability must be demonstrable.

Performance reporting

Any reporting mechanism developed must gather fair, useful and relevant information. The purpose is to ensure that service is delivered to an acceptable and improving standard and to inform other areas of activity within this Office and, if required, initiatives launched by the Scottish Executive.

To facilitate this process a reporting format has been developed where the water authorities are required simply to complete a pro forma which will allow consistent measures and charts to be generated.

Glossary of definitions

A glossary of definitions to be used when completing these reports has been developed from the Ofwat definitions used in their June Return and information provided by all three Scottish water authorities. A copy of this glossary is attached for your information. All responses given should be based on these definitions. Should further clarification be required please contact this office.

Guaranteed Minimum Standards Performance Report

This report will be required quarterly. This report is intended to be a top-line summary of each water authority's performance against the Guaranteed Minimum Standards likely to be introduced following the current consultation process and Ministerial approval. Information provided should relate to these specific standards. Any water authority operating tighter or additional standards will have the opportunity to report on these elsewhere. Results will be considered in terms of the scale of improvements required and achieved.

Customer Service Performance Report

This report will also be required quarterly. The customer service performance report is a more detailed report intended to cover the major areas of customer service. This report will be used to monitor trends and highlight whether particular water authorities or their divisions are doing very well or badly in specific areas. This report monitors historical performance over five quarters to show trends, and comparisons with previous quarters and the same quarter in the previous year to account for seasonal influences. Again this allows scrutiny of improvement rather than absolute performance. Categories covered in this report are listed at Appendix 1 and are not materially different to those in the previously collected quarterly performance reports.

The format of this report also provides an opportunity for water authority comment in order that attention can be drawn to any particular influences on the performance achieved and any fluctuations observed.

The end of this report includes a section where the water authority should report information on incidents which were either notifiable or of particular interest. The last section provides an opportunity for the water authority to share the results of any surveys carried out and customer satisfaction established in the 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)
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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**

WIC 6: QUALITY PERFORMANCE ASSESSMENTS

This letter is to advise of my intention to introduce Quality Performance Assessments of written complaints received by the water authorities, a development of previous audit arrangements. Ongoing independent measurement and monitoring of customer service provision is crucial in ensuring that customers receive a consistent and quality service, providing value for money.

It is intended to introduce Quality Performance Assessments as an independent monitor of the service actually received by customers. At this stage these Assessments will be of written complaints and telephone complaints where a written response has been requested.

Any measurement and monitoring system must be fair and transparent. The veracity of the information gathered and conclusions drawn must be as far as possible unquestionable. With this in mind a pro forma and a set of definitions has been developed to ensure objectivity in assessment. This system will be more rigorous, and I believe more defensible, than the previous, more subjective measurements.

As I have stated, at this stage the Quality Performance Assessments will only cover written complaints and telephone complaints where a written response is requested. However, it is clear that with the majority of contacts being by telephone a mechanism must be introduced to ensure quality service is provided in this medium also. I am therefore keen that we work together to develop such a system, perhaps by way of independent monitoring by an outside agency of call handling. I am considering the issue of 'spot-check' Assessments and will come back to you on this when the methodology is more developed.

I am keen that these Quality Performance Assessments get underway as soon as possible and would propose the first round take place towards the end of September. I envisage that Assessments will take place quarterly, in line with Customer Service Performance Reporting. Having considered the number of complaints I am proposing that 40 cases be considered during each quarterly assessment.

This process will be reviewed after three to four quarters to ensure that the system is as useful as it can be. Input from the water authorities on these matters will also be welcomed to facilitate greater efficiency and effectiveness on both sides.

I would appreciate your views, comments or suggestions as soon as practicable as you will note from the attached timetable that we would be asking for complaint information on 11 September 2000. We would expect a list of all written complaints and telephone complaints where a written response was requested relating to the quarter, 1 April 2000 to 30 June 2000, on that date from which our random selection would be made.

I attach a pro forma, criteria definitions and draft timetable for your information. XXXX will forward copies of these formats to XXXX in the next few days. XXXX will also be able to address any questions you may have in this regard.

Yours sincerely

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**

**WIC 7: SCHEME OF CHARGES 2001-02
(1.0 – Request for submission of charging scheme, timetable and guidance)**

I am writing to request your Scheme of Charges for next year. I see the Scheme of Charges as an integral part of the regulatory process and I have therefore requested the appropriate supporting data, drawing on previous requests contained in my letters WIC 1, WIC 4 and the Regulatory Annual Return. The appendices and the guidance notes attached detail the format of the supporting data to be submitted.

In order to assist with the preparation of the charges scheme, I have identified the following key policy issues, which I believe ought to be addressed:

- income levels and compliance with the Ministers' decision in January 2000
- consistency of charging methodology
- re-balancing of household and non-household charges
- affordability

Income levels and compliance with the Ministers' decision in January 2000

In complying with Ministers' decision, I would expect to see a nominal charges cap of 12%. This was intended to generate an income level of [East: £280.6 million, North: £231.8 million, West: £367.3 million], as envisaged in the Strategic Review of Charges. If there is any movement from this figure then a full reconciliation of what has changed, and why, should be provided on an item by item basis. If revenue levels for 1999-2000 and 2000-01 will fall short of the level of income required by the Strategic Review, I would ask that you seek the view of the Scottish Executive, before submitting your Scheme of Charges.

I would expect any difference from the expected 12%, for any customer category, to be quantified and explained with supporting data. Any variance from the income agreed at the Strategic Review should be quantified and explained in the format of the tables attached.

Consistency of charging methodology

I have received a number of representations, which suggest that there would be great benefit to all stakeholders from consistency of charging methodology. I plan to consult on consistency of charging methodology in the next year and if, as expected, there were a requirement for water authorities to employ a consistent approach, Scotland wide, then I would welcome your views on how this could be achieved. As an interim step I would like to see full details of any consultation you may have carried out on this matter. Your views on consistency on the following areas would be appreciated:

- charging for surface water drainage
- charging for network and customer service
- treatment of highway drainage
- use, or otherwise, of the year 2000 rateable values
- return to sewer policy
- agreement on the customer categories where charges are to apply, for example, charges for empty properties, halls of residence
- relief of charges
- building water charges.

Re-balancing of household and non-household charges

I suggest that no further re-balancing be made until there is robust data on household and non-household revenue and costs. This would be collected on a consistent basis through the Asset Management and Information Project

and the submission of proper data through the WIC 1 and WIC 4 requests.

Affordability

Although the Scottish Executive will be consulting on the affordability of charges, I believe that authorities could do more, outwith the requirement for legislation, to improve the affordability and collection of charges levied on vulnerable households. I would be pleased to receive ideas as to how water charges can be made more affordable.

The following implementation issues need to be addressed, and I have given more detail below.

Metering and levels of metered charges

I would encourage all authorities to include the option for customers to have a water meter installed free of charge. Charging customers for the option of a measured supply in Scotland cannot be sustained when customers in England and Wales have a statutory right to opt for such a supply, free of charge. I would also encourage authorities to be more explicit about their metering policy. The cost of installing a meter may be covered by a change of tariff for the first few cubic metres.

Relief of charges

I am aware that you have consulted on the issue of relief of charges to churches, nursing and care homes etc. I look forward to receiving an analysis and the conclusions from that consultation before the end of October. I plan to obtain opinion on the matter through the use of the domestic consumer panel, which has been established to ascertain the views of households.

Level of income and impact of competitive deals

I am keen to restrict the influence of special agreements that are outwith the charging scheme in order to limit to an agreed level the impact that such agreements will have on the remaining customer base. I suggest that the aggregate cost of special agreements should not exceed 2.5% of authority turnover for 1999-2000. Any increase in special agreements beyond this should be advised to me with a full business case.

Rateable values as a basis for non-household unmeasured charges

I would like to see also a consistent approach across Scotland on the use of rateable values for calculating bills, including whether or not to use the year 2000 valuations. Where up to date values are used, please provide the necessary evidence and supporting calculations on the revised charge base. It may be that rateable value is going to become a decreasingly relevant means of charging and I would welcome your views.

Rebates for non-connection for surface water

Customers should not be charged for services that they do not receive. I therefore suggest that customers be offered a lower charge, or rebate, where the surface area of their property does not drain to the public sewer. I welcome your proposals (again preferably common across Scotland) on this issue.

Timetable

I would ask that you provide the proposed Scheme of Charges and the supporting documentation and commentary to me no later than Friday 15 December 2000. I would hope to reach agreement quickly thereafter. I would be happy, however, to discuss your proposals and the charging issues in more detail, before 15 December 2000.

I am copying this letter, plus the tables, appendices and guidance by e-mail to XXXX. Please contact me if you wish to discuss any of the points above.

Yours sincerely

ALAN D A SUTHERLAND
Commissioner

10 November 2000

**To Chief Executive of: East of Scotland Water Authority
North of Scotland Water Authority
West of Scotland Water Authority**

WIC 8: DATES FOR SUBMISSION OF INFORMATION TO THE WIC

Subsequent to the recent meetings between yourselves and this office regarding the information project, I would like to clarify the timing and content of further information requirements of this office following on from the project. Please ensure that all the relevant staff are informed of dates that affect them. Accurate communication is important for the success of the data gathering exercise. We have had some experience of people being unaware of important deadlines despite having communicated them to you. I hope that the following information will be helpful:

- 10/11/00 – QIR
- 15/12/00 – Submission of information required for approval of the **schemes of charges**, including tables A1-4, E1&2, F1-10 from the return.
- 31/01/01 – Submission of an updated version of the **1999-00 annual return** in the new format including any improvements, and an initial submission of any new information. Focus should be directed towards the new information in tables H-K and the key benchmarking parameters:
- Population – all definitions
- Properties – connected and billed
- Sewage treatment loads
- Volumes put into supply
- 31/01/01 – **Action plans** to overcome the gaps in what the authority is able to submit, including best estimates of any required resources and milestone dates.
- February 01 – We will review the information provided in **tables H, J, and K** with a view to identify any important revisions to be done in March or April 2001.
- 01/04/00 – Submission of **table S**, the strategic plan.
- 01/07/01 – **Full return for 00-01**.

Provided that table K is fully completed by 01/07/00 this will replace the PIR.

Issuing of new versions of the return

As you are aware we will periodically be reissuing updated versions of the tables. It is assumed that the regulatory contact will have ownership and control of all copies of the tables throughout the authority and will recall these in order to issue new versions. It is extremely important that confusion cannot arise, and that consistency of the timing and content of revisions is maintained.

When a new version is issued, copies of our change control sheets will also be made available. These will contain lists of added or deleted lines or columns and other changes.

I trust that this system will ensure the effective communication of revisions.

Yours sincerely

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**

WIC 9: NON DOMESTIC DEBT ANALYSIS

In the WIC 1 request, I sought detailed revenue information on non-domestic customers. I stressed that the understanding of customers, and what income they generate for the business, is a core operation of the water authority.

I would now like to take this request a stage further by seeking an analysis of non-domestic customer levels of debt. I consider that this is an essential ingredient in developing your understanding of customers. In addition, given the material levels of non-domestic bad debt in recent years, this analysis would enable this office to monitor the financial impact of the debt levels and assess the efficiency of the authority's collection systems. The data requested will allow us both to monitor revenue on an on-going basis and to ensure that those levels endorsed by the Minister are achieved.

I envisage that this information will be submitted as additional columns to the WIC 1 request on a quarterly basis. Therefore, the debt levels across water, wastewater and trade effluent should be completed for individual customers where revenue is <£100,000 and by business sector for medium sized and small customers. The first submission should relate to the balances as at 31 March 2000 and 31 December 2000 and is required by 2 March 2001.

I have attached the column headings to be appended to the WIC 1 submission. These column headings are similar to both the WIC 4 return, which requires summary total information for households, and the non-domestic debt summary required for the annual Charges Review. Two additional columns have been added for Bad Debt Provision and Bad Debt Write-offs.

I appreciate that you will encounter difficulties in completing this information and in particular analysing that part of the debtor balance which relates to previous years, however I trust you will apply best endeavours.

If you have any queries regarding this request please do not hesitate to contact me.

Yours sincerely

ALAN D A SUTHERLAND
Commissioner

WIC 9: NON-DOMESTIC DEBT REQUEST

[illegible]

28 February 2001

**To Chief Executive of: East of Scotland Water Authority
North of Scotland Water Authority
West of Scotland Water Authority**

WIC 10: INFORMATION PROJECT ACTION PLAN

Thank you for the recent submission of your proposed action plan, which I received on XX February, with further information on XX February 2001. I have undertaken an initial review of the action plan and am extremely disappointed with the quality of the actions included, despite the additional time given to complete this exercise. Moreover, Cap Gemini conducted an independent review of the action plan and reached similar conclusions re the inadequacy of the details provided.

The main weaknesses identified in the action plan are as follows:

- Lack of attention to strategic information shortcomings
- Failure to address high level information gaps
- Asset management requirements inconsistently addressed
- Milestones, cost and resource requirements have not been adequately defined
- Timescales to provide information are unrealistic
- No firm determination of overall goals and objectives

Specific examples of inadequate actions include:

- One plan failed to mention the development of a risk-based measure for monitoring WTW's and STW's asset performance, identified as a gap in Phase 2 Report
- Of the 52 plans submitted only 23 contained any milestone dates
- Two of the authorities' action plans re asset information go as far as developing 'methodologies' for reporting changes to asset stock. None of the plans appears to address the issue of actually maintaining up-to-date asset data.

The review of the authorities' existing data systems undertaken by Cap Gemini identified common information gaps across all three authorities and recommend a common approach to their solution. The findings of the NEW Project underline the need to address any information gaps in a collaborative fashion. This would suggest that a 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 £8 million and £10 million. However, your organisation will benefit in terms of the quality of the information compiled by expert consultants and also in terms of resources freed up to concentrate on other areas of the action plan.

I would like to discuss this proposal and ways of taking it forward at the Steering Group meeting this Friday. If you have any questions, please do not hesitate to contact me or XXXX at the number below.

Yours sincerely

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

WIC 12: NEW OPEX AND SPEND TO SAVE

At the meeting on 16 February, the three Chief Executives asked me to set out the criteria on which I would assess each authority's case for additional expenditure on new opex and 'Spend to Save' initiatives.

New opex

The efficiency target for base opex is calculated from benchmarking on companies' opex, as reported in 1998-99. Companies' benchmarked opex includes the full costs of operating new plant, or providing additional staff, to meet the reported level of service for that year. For the sewerage service, where levels of service are improving rapidly, the benchmarking takes account of the extra costs of specific treatment processes.

Given the nature of the benchmarking, it would, therefore, be inappropriate to allow your Authority new opex, unless the reported levels of service in England and Wales were surpassed, or significant additional sewage treatment processes were required.

From our discussions on the 16th February, it would appear that the only area likely to qualify for additional opex will be for sewage treatment and sludge disposal, in the period up to 2005-06. Commitments on drinking water compliance and Guaranteed Minimum Standards would appear unlikely to qualify, unless a step change were needed, over and above the reported levels of compliance and service standards in England and Wales in 1998-99.

The criteria I intend to adopt in assessing new opex are, therefore, as follows:

- Does the expenditure result in a level of service that exceeds the reported norms for England and Wales, or enable significant additional sewage treatment?
- Is the authority required to provide this additional level of service, and for what reason?
- Has the authority carried out a proper assessment of the proposed new opex spend, rather than rely on contractors'/manufacturers' estimates or on an arbitrary percent of the capex cost?
- Has the authority demonstrated management challenge and control over the proposed costs?
- Has the authority compared alternative options on a whole life cost basis, within a project appraisal?
- Have full net present value calculations been provided?
- Do the alternative options include different mixes of opex and capex?
- Where appropriate, have single authority solutions been investigated?
- Has the authority quantified potential savings to base opex arising from upgrading works or systems, and offset the new opex accordingly?

Proposals for new opex would need to have satisfactory responses to each of these questions to be acceptable.

Once accepted, the assessed amount of new opex would be subject to an efficiency target.

Spend to save

Spend to save covers those projects whose principal purpose is to reduce total whole life cost, as expressed by net present value. I expect each authority to determine and set out the appropriate financial criteria on which to judge the merits of individual projects, especially where they are competing for a limited budget resource. That said, I intend to judge proposals on the following criteria:

- Has the authority carried out a proper assessment of the proposed costs and benefits, rather than rely on contractors'/manufacturers' estimates or on arbitrary estimates?
- Has the authority demonstrated management challenge and control over the proposed costs?
- Has the authority compared alternative options on a whole life cost basis, within a project appraisal?
- Have full net present value calculations been provided?

- Do the alternative options include different mixes of opex and capex?
- Have payback periods been calculated, with sensitivity analyses to take risk into account?
- Where appropriate, have single authority solutions been considered?
- Has the source of funds to carry out the project been identified?
- Have additional 'knock-on' benefits (eg reduced risk of non-compliance) been quantified?

Proposals would need to have satisfactory responses to each of these questions to be acceptable. Those that are approved will need to identify appropriate outputs, deliverables and milestones, and I shall wish to monitor progress closely to ensure value for money.

Clearly, it is important to deal with both new opex and spend to save within the Quality and Standards process. I therefore expect to see these issues addressed in your Strategic Business Plan. I would also expect you to prepare detailed justifications for proposed expenditure in these categories by early May, so that I can review them before incorporation in the final Quality and Standards document.

Yours sincerely

ALAN D A SUTHERLAND
Commissioner

7 May 2001

**To Chief Executive of: East of Scotland Water Authority
North of Scotland Water Authority
West of Scotland Water Authority**

WIC 13: EFFICIENCY ANALYSIS – IMPACT OF PPP SCHEMES

At the Strategic Review, I will need to identify future PPP costs, so that they can be properly allowed for in prices. However, it will undoubtedly be the case that, in the future, some PPP schemes will impact upon 1998-99 controllable OPEX. This could be the case, for example, where primary sewage treatment facilities existing in 1998-99 are replaced and extended through a PPP scheme. In addition, were assets transferred from the Authority to a PPP, then this could reduce the asset base on which maintenance by the Authority is required.

Given these possibilities, I need to understand the potential impact of PPP schemes in reducing controllable OPEX and CAPEX over the period to 2005-06. I envisage that the outcome of this exercise would be an efficiency target to be netted out of the expected spend on PPP. There may also be an impact on the capital efficiency targets, where it can be shown that the Authority's internal costs will be reduced through PPP schemes.

In the interests of customers, I also need to be confident that variable or volume related costs included in PPP contractual arrangements would, where appropriate, be optimised by the Authority to the extent that such costs can be controlled.

Please find enclosed three tables which will give me the information I require to gain a full understanding of the current and future PPP impact. Please complete this information by Thursday 31 May 2001.

Table A:

This table requires details of the number of the sewer network or other assets made redundant or transferred to the contractor as a consequence of PPP. This will give me an understanding of the number of assets and hence the associated costs of running and maintaining these assets no longer required due to PPP.

Table B:

This table requires details of how much OPEX relates to operating facilities that will be replaced by PPP schemes. I also need to know in what year each scheme becomes fully operational.

Table C:

This table requires details of the ranges of volumetric/load parameters which the water authority's PPP charges will be based on. I also require details of the volumes/loads that the water authority currently generates within the area to be covered by PPP schemes. I have assumed that charges are influenced by the level of volume/loads used by the authority. If this is not the case, please indicate the basis of charging within the PPP schemes.

It is not currently my intention to include the PPP efficiency targets within the revenue caps proposed in my advice to Scottish Ministers. I believe that the operating cost and capital efficiency targets are appropriately and sufficiently demanding. This position assumes a capital efficiency target is set within the 30-40% range that has been indicated to you.

If you require any further clarification to this request, please do not hesitate to contact either XXXX or XXXX.

Yours sincerely

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	Medium Diameter (>150<600mm)	Small Diameter	Other
	(>600mm)		(<=150mm)	
NSW				
Highland				
Tay				
Aberdeen				
Moray				
WSW				
Daldowie/ Shieldhall				
Dalmuir				
Meadowhead, Stevenson and Inverclyde				
ESW				
Almond Valley, Seafield and Esk Valley				
Levenmouth				

Table B:
OPEX (1999-2000) relating to activities which are now or will be incorporated in PPP schemes

PPP scheme £'000	CSOs	Sewerage Network	Pumping Station	Treatment Plant	Other	Fully Operational Date
NSW						
Highland						
Tay						
Aberdeen						
Moray						
WSW						
Daldowie/ Shieldhall						
Dalmuir						
Meadowhead, Stevenson and Inverclyde						
ESW						
Almond Valley, Seafield and Esk Valley						
Levenmouth						

Table C:
Volumetric/load parameters for PPP schemes

PPP scheme	Parameters range per contract	Current volume/load (1999-00)
NSW		
Highland		
Tay		
Aberdeen		
Moray		
WSW		
Daldowie/ Shieldhall		
Dalmuir		
Meadowhead, Stevenson and Inverclyde		
ESW		
Almond Valley, Seafield and Esk Valley		
Levenmouth		

18 May 2001

**To Chief Executive of: East of Scotland Water Authority
North of Scotland Water Authority
West of Scotland Water Authority**

WIC 14: SPECIAL AGREEMENTS FOR LARGE CUSTOMERS

I brought to your attention the need for transparency of Large User Tariffs during the 2001-02 Scheme of Charges consultation. The special agreements available for large users should, in my opinion, be published in your scheme of charges. It is important in terms of non-discrimination that all customer groups should have tariffs, which are available to all customers, communicated to them.

Further to this I would like to bring in measures, which will monitor the special agreements that are being created throughout the year and the financial impact they will have on future charging schemes.

Attached is a pro-forma table, which I require to be completed for the financial impact of the agreements, and a questionnaire to explain the other details of the special agreements entered into.

Please advise me as soon as possible of when you will be in a position to provide data for this request.

Please contact me if you need further clarification on the above information requirement.

Yours sincerely

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**

WIC 15: CAPITAL INVESTMENT & EFFICIENCIES

Following today's meetings with the Water Authorities I now summarise below the investment profiling after efficiencies, which I propose to incorporate in my Strategic Charges Review for the four years to 2005-06. The Capex amount available is [East: £459.8 million, North: £595.3 million, West: £697.8 million], before the addition of a Spend to Save allowance of [East: £65.9 million, North: £43.2 million, West: £95.5 million]. The same efficiency percentages of 34% by 2005-06 apply to each Authority, representing 26.6% across the currently profiled programme. The context and computation of these are set out in the Executive Summary of the Capital Efficiencies 2002-06 presentation, an electronic copy of which is appended. The figures are rounded and include inflation.

East	2002-03	2003-04	2004-05	2005-06	Total
Allowable Capital	98.4	101.8	112.4	110.6	423.2
Allowable Capital Opex	8.8	8.9	9.6	9.4	36.7
	107.0	110.7	121.0	120.0	459.9

North	2002-03	2003-04	2004-05	2005-06	Total
Allowable Capital	132.8	140.5	143.7	131.2	548.2
Allowable Capital Opex	11.5	12.2	12.3	11.1	47.1
	144.3	152.7	156.0	142.3	595.3

West	2002-03	2003-04	2004-05	2005-06	Total
Allowable Capital	159.2	162.9	165.6	154.8	642.5
Allowable Capital Opex	13.8	14.2	14.2	13.1	55.3
	174.0	177.1	179.8	167.9	697.8

As you may know from today's meeting at Woodlands House attended by the Authorities and XXXX for the Integration Team there was a broad consensus on the methodology adopted and the minimum efficiencies required. You will note that Spend to Save amounts are provisionally indicated, being subject to further national consideration, and that these include IT. Regarding the introduction of a 'High Priority' allowance of £5m pa for each Authority for first-time connections I require a detailed justification from the Authority that £20m in four years can be invested for customer benefit, and achieved in the timescales envisaged.

I shall be obliged to receive your agreement by Monday 28 May to the net profiling before efficiencies, and the phasing of these efficiencies. If in order to plan and achieve the delivery of maximum efficiency compatible with meeting optimum outputs you consider that the annualised profiling should change please advise me at the same time.

XXXX and XXXX are available to assist your management team on any aspect arising from today's presentation.

Yours sincerely

ALAN D A SUTHERLAND
Commissioner

Attachment: Electronic copy of 18 May presentation

28 May 2001

**To Chief Executive of: East of Scotland Water Authority
North of Scotland Water Authority
West of Scotland Water Authority**

**WIC 16: DEVELOPMENT CONSTRAINTS AND RURAL SEWERAGE
CONNECTIONS**

As you will be aware, the Minister has indicated that he would like to be able to consider whether the central option in the Quality and Standards Paper should be marginally enhanced to cover high priority issues, particularly programmes to ease development constraints, and some extension of rural sewerage connections. In addition, the Authorities should put forward any other high priorities falling outwith these two categories.

I have attached a framework table for setting out the costs and outputs from these high priority issues, and I would request that you complete this and return to me by Friday 29 June 2001. This should allow sufficient time for you to liaise with SEPA in order to complete the column on the environmental impact of the proposed scheme. This analysis will enable a consistent assessment across the Authorities.

Please do not hesitate to contact XXXX or XXXX if you have any queries on this request.

Yours sincerely

ALAN D A SUTHERLAND
Commissioner

Attachment: High Priorities Table for completion

TABLE 1: DEVELOPMENT CONSTRAINTS AND FIRST TIME SEWERAGE

No	Scheme/ Project Description	Category (A) Insert priority level	Category (B) Insert priority level	Category (C) Insert priority level	Cost Currently Included in Central (£000)	Cost Not Currently Included (£000)	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**

**WIC 17: ANNUAL RETURN SUBMISSIONS – SIGN OFF FOR DATA
ACCURACY**

Good quality and reliable information is critical to the regulatory process and management of the authority. One of the signs of good quality information is that its accuracy is attested to by an authoritative source. You will remember that the annual return requires directors to sign off the data provided in each individual table. This ensures that directors remain accountable for the data submitted to my office.

In order to maintain the integrity of the return, I intend to discuss the data only with the author of the tables and those responsible for quality control. If you have any queries relating to this, please do not hesitate to contact me.

Yours sincerely

**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**

WIC 18: QUALITY AND STANDARDS FINAL OUTPUT

In order that I can formally sign-off on the Quality and Standards base line numbers as required by the Scottish Executive, I request that you complete the attached table.

You will note that the information required is at a project level. The detail required however is not in any way as onerous as the completion of Table K (Investment Plan), and should simply be a small sub-set of the data required for the completion of Table K.

Please note that whilst the 2002-06 expenditure total should equal [East: £514m, North: £719m, West: £984m], the figure stated in your Strategic Business Plan, I appreciate that the splits between infrastructure and non-infrastructure, and rural/non rural may in many cases be estimates only. I also realise that the definition of rural or non-rural is subjective, and ask that you apply a common sense approach. As part of the Quality and Standards process, we simply wish to give the Scottish Executive a rough indication of the amount of money to be spent on rural areas.

Please prioritise this piece of work over both the completion of Section K for the annual returns and over the work you are doing to agree the bottom line post efficiency numbers. If necessary, the Section K deadline can be extended a little to accommodate this request. I would ask that you submit the table to me on Friday 1 June 2001.

The completion of the tables will enable the Scottish Executive to roll forward the summary numbers reported in their Consultation Paper on Quality and Standards, and will provide me with the necessary assurance as to the make-up of these numbers.

Yours sincerely

ALAN D A SUTHERLAND
Commissioner

Quality and Standards Sign Off Table

Reference	Project Title	2002-06 Expenditure £000	Investment Base (%)	Purpose Quality (%)	Growth (%)	Water infra (%)	Non infra (%)	Wastewater Infra (%)	Non infra (%)	Other %	Rural/ Non Rural %
(As per Table K)											
TOTAL											

1 June 2001

**To Chief Executive of: East of Scotland Water Authority
North of Scotland Water Authority
West of Scotland Water Authority**

WIC 19: INVESTMENT APPRAISAL PROJECT

I am writing to discuss your involvement in the next phase of the 'Investment Appraisal Project' that is currently being undertaken by Yorkshire Electricity and WS Atkins. This project has now progressed through its first stage.

The first stage of the project has been to document an investment appraisal process consistent with best practice, and to develop pre and post investment appraisal audit procedures. It is my intention to use these audits to judge the effectiveness of investment decision-making in each of the Authorities. The documentation and audit procedures are now complete and currently being independently validated by a leading academic and firm of financiers.

I have enclosed a copy of the investment appraisal documentation, as it is currently being validated, for your reference.

In line with the scope of the project I will shortly be ready to introduce the audit procedures and the investment appraisal process upon which they are based to each Authority.

This introduction will take the form of an audit carried out by Yorkshire Electricity and WS Atkins on each Authority to examine the investment appraisal processes currently used to construct capital investment plans. Each audit will take three days to carry out at your offices and will examine the spectrum of large and small capital projects. Yorkshire Electricity would like to run the three audits concurrently across the Authorities between the dates of the 3rd – 5th July 2001.

Yorkshire Electricity would like to choose their sample from the investment appraisals signed off in the last six months. Ahead of the audits we would ask that you submit to them a list of these appraisals, with the project values, by Wednesday 20th June. Prior to the audit, Yorkshire Electricity will inform you of the selection of schemes they have chosen to audit. Throughout the three-day audit, the audit team will need access to all documentation appertaining to the chosen schemes and to your key personnel who are involved in the investment decision-making processes.

It is then planned that we will follow up the completion of the audits with a two-day workshop with each Authority run by Yorkshire Electricity. The purpose of these workshops is: to describe in detail the investment appraisal process and the audit procedures going forward; to feedback the results of the audits carried out; and to work with the Water Authority teams to understand any major gaps and issues that exist between current processes and those of the recognised best practice approach. It is anticipated that these workshops will take place at a time convenient to your teams starting week commencing the 16th July.

The estimated total cost to each Authority of this work is £35,000 excluding VAT. The benefits to each Authority could be substantial. The contribution from my office will be around £50,000, as we agreed at the outset of the project. Yorkshire Electricity will directly invoice the Authority in due course.

I trust these arrangements meet with your satisfaction. I advise that Yorkshire Electricity will contact you shortly to follow-up on these plans.

Yours sincerely

ALAN D A SUTHERLAND
Commissioner

6 June 2001

**To Chief Executive of: East of Scotland Water Authority
North of Scotland Water Authority
West of Scotland Water Authority**

**WIC 20: REQUEST FOR DATA RELATING TO DEPOTS,
LABORATORIES AND OFFICE BUILDINGS**

In light of the proposed set up of Scottish Water, I would like to understand the current structure of depots, laboratories and office buildings within the authority. It is important for me to assess any possible impact of changes in this structure due to the inception of Scottish Water. I would expect that there may be some consolidation of these buildings under Scottish Water and would like to assess the OPEX impact of this for consideration as part of the Strategic Review.

I am interested in obtaining details of the number of depots, laboratories and office buildings each water authority owns or rents and the purpose of these buildings. In the context of this request, depots, laboratories and office buildings also include any parts of operational buildings used by employees for non-operational purposes. The type of data I would like to understand includes:

- Location
- Number of employees who consider the building to be their main place of employment
- The main work activity which takes at the buildings
- For depots, the number of customers served
- Market value of the building, or annual rental, as appropriate
- Average OPEX incurred as a result of operating the building

In order to simplify the information, it may be appropriate to group depots by activity. In this instance, please indicate the number of depots grouped together. I would be grateful if you could submit this data in the format detailed in Appendix 1 by Friday 29th June 2001. If you have any questions relating to this information request, please do not hesitate to contact XXXX at my office.

Yours sincerely

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

WIC 21: CRITICAL INFORMATION FOR STRATEGIC REVIEW

As you will appreciate, time is beginning to press in the preparation of the Strategic Review. I would like to take this opportunity to thank you for your teams' efforts to date in the completion of the June Return and other WIC data requests. However, in order to carry out the comprehensive data analysis required for the forthcoming strategic review of charges, I still urgently require the following critical information to be received by my office no later than Friday 13th July 2001. Please understand that this date does not include any allowance for slippage on our part and we really must receive the data requested on or before that date.

WIC 1

I would like to reiterate that the WIC 1 request must be completed to the exact specifications set out by this office. I must stress that every heading is essential to the analysis of the information provided and as such omissions would limit the value of the analysis undertaken.

Understanding the supply/retail business will require me to look at the balance between fixed and variable elements of customer charges. I will therefore require the following additional information:

Customers >£100,000

- Numbers of meters and their sizes used by each customer.

For example:

Customer A	# of Meters	Meter Size
	3	25mm
	1	40mm

Customers <£100,000

- Number of meters and their sizes by revenue bandings within business sectors.

For example:

Business Sector	Revenue banding	# of meters	Meter size
Petrochemicals	>£50k<£100k	20	25mm
		15	40mm
		5	80mm

Inter authority trading

Please provide details of all income and expenditure arising from inter authority trading, broken down in to bulk water revenues/costs and all other revenues/costs. This is to enable me to produce consolidated financials for Scotland.

Value chain analysis – retail

I need to understand the relative costs of the retail component of your business. This is particularly important in the

context of potential entry of competitors. We have to be able to make a reasoned assessment of potential revenue loss from competition. This requires detailed information on the costs of billing, customer call centres, meter reading and debt recovery, etc. If there are any other costs, which you believe it appropriate to allocate to the retail business, please detail these and the rationale for their allocation to that business. I attach spreadsheet templates for completion.

Capital investment

A section of the forthcoming Review will be dedicated to the outlook for the 2006-10 Strategic Review period. I understand that there are a number of uncertainties around capital investment requirements during this period. However, please submit your current estimates for each year between 2006-2010, split between water/sewerage and infrastructure/non-infrastructure. It would be helpful if you could also highlight and quantify the main sensitivities around this data. For the avoidance of doubt, can this information please be supplied in year 2000 prices and at today's level of procurement and asset management efficiency.

Finally, can I emphasise the importance to the Strategic Review of Charges that this office receives complete responses to all WIC letters. This particularly refers to WIC 20, which governs the potential for asset disposals/rationalisation, and to my letter on new business. Accordingly, please ensure that all outstanding information requests have been dealt with in full by the above date. It is essential that these submissions be received within the given timescale, to ensure that the Strategic Review can effectively reflect the true circumstances of the Water Authority. The information must be complete and accurate in order that the guidance provided to the Minister is based on a full up-to-date appraisal of the Water Authorities' position.

I appreciate that there is a short turn-round on this information, but would be most grateful for your continued assistance.

Yours sincerely

ALAN D A SUTHERLAND
Commissioner

PS A more detailed definition of each parameter requested will be forwarded to you on Monday.

19 October 2001

**To Chief Executive of: East of Scotland Water Authority
North of Scotland Water Authority
West of Scotland Water Authority**

WIC 22: CUSTOMER REVENUE INFORMATION AND DATA REQUEST

In order to consider charges schemes for your authority for the next financial year I will require a complete response to my WIC 1 request both for the last financial year and for the six months to the 30th September 2001.

In addition to the information requested in WIC 1, I will also require information on numbers of meters, sizes of metres and any special arrangements. I have attached a format for this information.

For your convenience I attach a copy of my original WIC 1 letter.

If you require any further clarification on the information requirements, please contact XXXX.

Yours sincerely

ALAN D A SUTHERLAND
Commissioner

Encs

Example WIC 1/22 return

Customers reference	Cust Name	Prop Desc Section	Location	No of Sites	Meter Count	Meter Sizes	Rateable Value (£)	UW Net RV (£)	Mw Cons Actual (m³)	% of Total Non-domestic Volume	Mw Actual (£)	Mw Std Chrg Actual (£)	Uw Actual (£)	Total Water Bill (£)	% of Total Non-domestic water revenue

Total Annual Charge £	Mw Cons Accrual	Mw Accrual	Mw Std Chrg Accrual	Uw Accrual	Total Water Accrual £	Ms Cons Accrual	Ms Accrual	Swd Accrual	Us Accrual	Total Waste Water Accrual £	Total Accrual £	Special Agre gross discount (£)	Total Bill Actual & Accrual

	% of Total water revenue	Ms Cons Actual m³	% of Total Non-domestic ww Volume	Ms Actual (£)	SWD Ner RV (£)	Swd Actual (£)	Us Net Rv (£)	Us Actual (£)	Total Sewage Bill £	Trade Effluent Volume (m³)	Trade Effluent Load	Trade Effluent Strength	Trade Effluent Total (£)	% of Non-domestic sewage revenue	% of Total sewage revenue

	Mw Cons Forecast	Mw Forecast	Mw Std Chrg Forecast	Uw Forecast	Total Water Forecast £	Ms Cons Forecast	Ms Forecast	Swd Forecast	Us Forecast	Total Waste Water Forecast £	Total Forecast £	Reduction Due To User High Tariffs

21 November 2001

**To Chief Executive of: East of Scotland Water Authority
North of Scotland Water Authority
West of Scotland Water Authority**

**WIC 23: Monitoring of Capital Investment Programmes for 2002-06
Quality and Standards**

As you will be aware, Ross Finnie has accepted my advice on revenue caps in the Strategic Review of Charges. The revenue caps are developed from a series of inputs, primary among which are the requirements of the Quality and Standards Programme for 2002-06. I would like to draw your attention to the assumed post-efficiency profile of capital investment for each Authority contained in the Review:

		£m				
		2002-03	2003-04	2004-05	2005-06 Total	Review
ESWA	Assets	88.3	93.8	80.7	77.1	339.9
	IRE	24.7	21.3	35.0	40.0	121.0
	Total	113.0	115.1	115.7	117.1	460.9
NOSWA	Assets	123.8	96.1	121.8	93.1	434.8
	IRE	34.5	32.6	47.3	49.3	163.7
	Total	158.3	128.7	169.1	142.4	598.5
WOSWA	Assets	139.2	141.4	157.4	144.6	582.6
	IRE	25.1	26.0	58.4	58.9	168.4
	Total	164.3	167.4	215.8	203.5	751.0
'Scottish Water'	Assets	351.3	331.3	359.9	314.8	1357.3
	IRE	84.3	79.9	140.7	148.2	453.1
	Total	435.6	411.2	500.6	463.0	1,810.4

I recognise that the primary concern of the management of the three authorities or the proposed Scottish Water has to be to live within their respective revenue caps. Equally, however, it is critical that the outputs agreed as a result of the Quality and Standards process are achieved on time and within the revenue cap.

I attach the detailed list of investment projects provided by each of the three authorities in the Quality and Standards process, together with a one page summary reconciliation to the Annual Return tables and to my Review. My expectation is that the expected outputs of these projects will be met within the agreed revenue cap. I will therefore look to monitor the progress towards delivery of the capital projects with reference to this list of projects. Obviously, it would be helpful if detailed changes to the capital investment plan could be detailed to us pro-actively, but the quarterly updates during the period and each new Annual Return should signal any material change to these plans. My Office will look at all variances and discuss these with the Quality regulators.

One of the further recommendations of my Review was that a joint project between my office, SEPA and the proposed Drinking Water Quality Regulator be implemented to ensure that consistent output measures are collected and monitored. Upon completion of this project (which I would expect to include significant input from the water authorities), I would anticipate that the current financial monitoring of the investment programme would switch to focus primarily on the delivery of outputs. I hope that terms of reference for this project will have been drafted by the end of January 2002.

In the interim, I would like to reiterate my definition of an "efficiency". My expectation is that the outputs of the 'Quality and Standards' programme will be delivered more cheaply, either through better programme management, better procurement or the use of innovative solutions.

There are other means by which the capital investment programme could be reduced, which would not be acceptable. These would include:

- Deferment of a project, which has been included in the Quality and Standards investment programme, even if a new derogation has been negotiated (in this instance, no further funding will be allocated in future revenue caps to allow for completion of a deferred scheme).
- The “do nothing” option, where this is taken to cut costs without reference to outputs or business objectives.

I am concerned by some comments from capital investment managers in each of the authorities that deferment of projects is viewed as the key to meeting my efficiency targets. This is not consistent with my frequent definitions of efficiency in the Review and the clear statement that the majority of the target can be met by closing the gap in procurement efficiency with England and Wales.

I look forward to the next submission of the Capital Investment Return. This is due on 1 February 2002. I would be grateful if you could also forward under separate cover any changes to the agreed Quality and Standards list of projects, of which you are currently aware, by this date.

Thank you for your assistance.

Yours sincerely

ALAN D A SUTHERLAND
Commissioner

21 December 2001

**To Chief Executive of: East of Scotland Water Authority
North of Scotland Water Authority
West of Scotland Water Authority**

WIC 24: Asset Maintenance – Leakage

Leakage takes a high profile role in the regulatory environment in England and Wales, where Ofwat and the companies work together to reduce leakage to an economically sustainable level. I appreciate that in some areas significant progress is beginning to be made as a result of the agreed Action Plans to collate asset information. However, these plans have not included leakage. There are two reasons why I believe that I will begin to need to understand in some detail leakage from water mains and service reservoirs in Scotland. I now believe the industry in Scotland should be in a position to begin to address the issue of leakage.

The monitoring of capital outputs will require me to be confident that leakage will be reduced considerably. For example, the Katrine/Balmore development will require there to be a significant reduction in leakage if the needs of the city of Glasgow are to be met. Leakage will also impinge upon unit supply costs and the rationale for special agreements with larger customers. It is also likely that the proposed Water Services Bill will establish a licensing regime that will require me to ensure that the incumbent water services provider(s) give(s) fair terms to a new entrant. I will only be able robustly to assess a network access price with a sound understanding of leakage levels, built up over a proper and realistic timescale. In order to begin this process, I would ask that you submit your current leakage strategy, by Friday 22nd February 2002. This strategy should include any current measures (and their cost) to address leakage.

I would anticipate that your leakage strategy should include the following factors:

- **Economic level of leakage** – the strategy should reference and be consistent with the Authority's action plans to install meters, assess night-time demand for industrial users and assess domestic consumption. It is likely that different levels of leakage are right and proper in different areas, but this will need to be empirically justifiable.
- **Metering of source output** – an assessment of leakage levels will require the Authority to establish not only where losses are occurring but also how much water is being produced. It is clear from the WIC Return submissions for this year that considerable effort is required to understand the levels of water production and loss at all stages of the value chain.
- **Competition** – there could be major implications if the Authorities or Scottish Water do not have robust data around leakage issues in general, as it would be difficult for them to have a defensible, fair access price to the network.
- **Technology** – the cost-effectiveness of the technology employed, firstly for the detection of leakage and subsequently for the remedial work, should be assessed.
- **Capital programme** – leakage in the network has clear implications on the sizing of water treatment works and other assets in the capital programme.
- **Cost transparency** – it was a consistent theme in my Review that the industry in Scotland has to identify the costs of activities to increase the levels of efficiency and to ensure broadly cost-reflective pricing. Leakage has an obvious impact on the split between fixed and variable costs in running the network.
- **Water Framework Directive** – the assessment of leakage will have an important input into the River Management Plans in Scotland.

I look forward to receiving your strategy by 22 February 2002. In the meantime, if you have any queries please contact XXXX or XXXX.

Yours sincerely

ALAN D A SUTHERLAND
Commissioner

11 January 2002

**To Chief Executive of: East of Scotland Water Authority
North of Scotland Water Authority
West of Scotland Water Authority**

WIC 25: Monthly Submission of Resource Accounting and Budgeting (RAB) Tables

It is certainly encouraging to note the quality of recent appointments to the Board of the proposed Scottish Water. My expectation is that this will lead to a more efficient and more effective level of service to customers. This does not, however, remove the need for robust regulation, as Scottish Water will remain a monopoly across most of the value chain for the foreseeable future.

There are four principal differences that will require a different type and periodicity of monitoring in Scotland in comparison to England and Wales. These are:

- the level of incentives to Executive and non-Executive Directors: while these are much stronger than in the current authority structure, they are neither as attractive nor are the sanctions as serious, when compared to the private sector and the criminal sanctions of the Companies Act.
- the lack of a comparator at a similar stage of development: while good comparators exist to assess the scope for potential improvement, there is no way to analyse through comparative benchmarking whether progress at an organisational level is "reasonable".
- the relatively poor quality of data: the more frequently a data set is produced, which is internally consistent and consistent with previous data submissions, the sooner that data is likely to be fit for purpose. I recognise that no data set is ever perfect, and my interest is only in the most material variances.
- the absence of a system of independent Reporters: the system of Reporters, as you know, has benefited both the regulated companies and the regulator in England and Wales. It is, however, expensive and is required because of an understandable increase in the level of gaming in a private sector context. More regular reporting will lead to greater confidence and trust, without the need for third party audits.

I therefore regard monthly financial monitoring as entirely appropriate, given the anticipated large benefits that should accrue to customers if Spend to Save is used wisely, and, particularly, given the pace of cost reduction required. Indeed, the targets for merger and operating cost efficiency will require underlying base operating costs to be reduced at an average rate of around 2% per month during 2002-03 and 2003-04. It would not be possible to track progress trends adequately on a quarterly or annual basis.

For the past seven months, the water authorities have submitted financial RAB tables to the Executive. These tables have been forwarded to my office to allow me to monitor the financial position of the authorities throughout the year. As you will appreciate, it is critical to the regulatory process that the information received by my office through the RAB tables is of good quality. The information currently received from the monthly RAB returns is in some cases incomplete and of poor quality. This makes it difficult for me to carry out my monitoring role.

As you will understand, there is a need to extend the current RAB tables to report base operating costs, Spend to Save, depreciation and RAB tracking totals. I recognise that you will need flexibility to run the business within the formal revenue caps, but clearly we are entering a period of major change, and I will need to have visibility on key trends and movements in operating costs. I attach copies of the required tables.

I have discussed this issue in detail with XXXX at the Scottish Executive. As a result, I have reduced my original scope and now propose to ask for some elements of these tables only on quarterly as opposed to monthly basis. I can assure you that I am requesting the minimum information required to perform my statutory functions. In view of the likely scrutiny and importance of this information, it would be appropriate that directors sign off each table before submission.

I appreciate that the revised RAB tables may appear more complicated, but I believe that the information required is entirely consistent with business needs, and therefore that it will not impose any real additional burden on water authority staff. My purpose in collecting this information is to monitor trends in base cost reduction and to report

periodically on those trends. I would emphasise that there is no intention to interfere with the management of the business or the workings of the Board. I would therefore not propose to discuss the implications of each month's figures after their presentation. My intentions would be to discuss progress quarterly unless there was a major cause for concern.

In order to give you adequate time to prepare for the additional information requirement, I propose that the first revised tables, covering period 12, 2001-02 and period 1, 2002-03, be submitted by 22 May 2002. Thereafter, I would need the returns within 15 working days of the close of each accounting period, as follows:

Monthly:

- L1 : Summary information
- L2 : Income and expenditure
- L3 : Balance sheet
- L4 : Changes in working capital
- L5 : Cash flow
- L6 : Reconciliation of operating surplus to net cash flow
- L7 : Summary analysis of fixed assets
- L11 : Income analysis – water
- L12 : Income analysis – waste water
- L15 (part) : Analysis of operating costs
- L16 : Audit trail of revisions to forecasts

Quarterly:

- L8 : Analysis of above ground fixed asset cost and depreciation
- L9 : Analysis of infrastructure asset cost and depreciation
- L10 : Analysis of total assets
- L13 : Cost of capital
- L15 (part) : Analysis of exceptional items and asset disposals

At start of year:

- L14 : Budget forecasts

Clearly, it may become necessary to modify the RAB tables in the future, given the current uncertainties around the status of resource accounting going forward, and the possible impact of any requirements for accounting separation.

Once again I would like to assure you that every effort has been made to keep this information requirement to the minimum consistent with effective regulation. I intend to review the frequency of the return in the light of future progress against efficiency targets, and in improved accuracy of the information provided.

XXXX has suggested that it would be appropriate to meet to discuss these requirements with you and XXXX. I believe XXXX will arrange an appropriate date.

Yours sincerely

ALAN D A SUTHERLAND
Commissioner

CC
XXXX
XXXX

15 January 2002

To XXXX, Scottish Water Integration Team**WIC 26: Revised Action Plans:**

Thank you for your letter dated 20 December 2001, where you explain the work being undertaken by the Scottish Water Transition Team to progress action plans.

I appreciate that the merger to form Scottish Water has implications for action plans. I agree that it may be more appropriate to take forward some actions on a Scotland-wide basis. However, it is critical that work continues on taking actions forward quickly and that the transition to Scottish Water does not slow this process down.

I am pleased that you recognise in your letter the importance of progressing these action plans on an urgent basis. It is essential for me, as regulator, to be confident that actions are progressing at an expedient rate to ensure that quality data is available to inform decisions on a timely basis. For example, adequate asset returns and risk assessments need to be made by summer 2003 to form the basis of the next Quality and Standards Report.

From your letter, I am encouraged to see that an initiative is underway to revise action plans on the basis of business critical data categories. It is important that this new action plan covers all the main issues detailed in my original letter of the 2 April 2001, including the areas identified as needing 'urgent improvement'. I would also expect that this new action plan would be prepared on a best practice basis. To date, I have not received any revised submission of action plans, excluding updates on short-term actions, which improve the quality of the original submissions which were received in February 2002.

I appreciate your offer to organise a meeting to discuss the work currently being undertaken by the transition team. However, I feel that this meeting would be more beneficial if we were able to discuss the revised action plans in detail. To this end, I would be grateful if you could submit a current status report and revised copy of the action plans to my office by 1 February 2002.

If you have any questions, please do not hesitate to contact XXXX at my office. I look forward to hearing from you soon.

Yours sincerely**ALAN D A SUTHERLAND**
Commissioner*cc XXXX*
XXXX

8 February 2002

**To Chief Executive of: East of Scotland Water Authority
North of Scotland Water Authority
West of Scotland Water Authority**

WIC 27: Dates for submission of information to the WIC

The purpose of this letter is to outline the process to be followed for the submission of the 2001-02 WIC Annual Return, and to highlight the deadlines for WIC letter information requests for the year ahead.

I am sure that you understand the importance of accurate and clear communication to the success of the collation, and monitoring, of regulatory information. It is therefore vital that all the relevant water authority staff are informed of those dates which apply to them. Unfortunately, in the past, some deadlines have been missed and it is important that we ensure proper and timely submissions of all regulatory information. I will regard late or (unexplained) incomplete returns as an indication of a problem and that further regulatory scrutiny is required.

Annual Return

The procedure for the submission of the WIC Annual Return will be much the same as last year, except that I will expect a fourth consolidated submission from Scottish Water. The Annual Return format will be distributed to each authority and Scottish Water in early April, with completed Returns and Commentaries due on 16 June 2002. The template will include the following elements:

- Sets of tables in Excel spreadsheet format, for data capture.
- Detailed, up-dated guidance and definitions to assist completion of the tables.
- Separate guidance to Scottish Water covering those tables where consolidated data is required.
- Copies of change controls identifying changes carried out between 2000-01 and 2001-02 Return.

Please note that the following tables will not be required for submission:

- Tables E3 (PFI), E5 (Large water treatment works) and E9 (Large sewage treatment works) will not be required in the Scottish Water submission.
- Tables G7 and G8.
- Section K: Investment Plan (all tables).
- Section S: Strategic Business Plan will be required for Scottish Water only.

Again, as with last year, I would like to emphasise the importance of the quality, accuracy and completeness of the information, which you will provide in the tables and Commentary documents. These must be completed in line with the guidance, but are your opportunity to draw my attention to any other issues, which you feel that I should take into account.

I would also draw your attention to the importance of providing data in the correct format (e.g. using the appropriate combination of upper and lower case letters for codes in section G, as defined in the Definitions). Last year, many tables could not be uploaded into the database due to incorrect formatting, which we and Cap Gemini had to correct. This exercise was quite expensive and was a direct result of a lack of due care and attention. This year, we intend to ask for resubmissions where data does not follow the prescribed format given in the definitions. The costs of any failed uploads will be separately billed to you. Meetings are planned to take place in February to discuss this issue further, and XXXX will be contacting XXXX shortly to arrange this.

It remains a basic requirement that the tables be signed off to confirm that the information provided is accurate and complete, thus allowing my staff to raise any queries with the relevant individuals. Any unsigned tables will be returned.

Charges Scheme

I will expect your draft Charges Scheme submission on 15 November 2002, together with full WIC 1, WIC 4 and WIC 9 analysis (see below).

WIC Letter Information Requests

CUSTOMER SERVICE AND REVENUE:

- **WIC 1/22** Revenue from Non-Domestic Customers - due on 15 May and 15 November 2002.
- **WIC 4** Domestic Revenue – due on 15 May and 15 November 2002.
- **WIC 9** Non-Domestic Debt Analysis – due on 15 May and 15 November 2002.
- **WIC 5** Customer Service Performance Reports due:
 - Q3 Friday 15 February 2002
 - Q4 Friday 10 May 2002
 - Q1 Friday 9 August 2002
 - Q2 Friday 8 November 2002
 - Q3 Friday 14 February 2003
 - Q4 Friday 9 May 2003
- **WIC 6** Written QPA - Written complaints and telephone complaints where a written response is requested (provisional dates).

WA provide list	Advised of selection	QPA
Q3 28/01/02	4/02/02	20/02/02
Q4 29/04/02	6/05/02	22/05/02
Q1 29/07/02	5/08/02	20/08/02
Q2 28/10/02	4/11/02	20/11/02
Q3 27/01/03	3/02/03	19/02/03
Q4 28/04/03	5/05/03	21/05/03

- Specialised QPA - Written complaints and telephone complaints where a written response is requested (provisional dates), will be carried out on the following dates. I will advise you of the subject of the audit 3 weeks prior to the date in the first column below.

WA provide list	Advised of selection	QPA
Q3 11/02/02	15/02/02	6/03/02
Q4 13/02/02	17/05/02	5/06/02
Q1 12/08/02	19/08/02	4/09/02
Q2 28/10/02	17/11/02	4/12/02
Q3 10/02/03	17/02/03	5/03/03
Q4 22/05/03	19/05/03	4/06/03

- Telephone QPA (assesses 'current' position rather than retrospective analysis of other QPA). Any change in the format will be advised in due course.

QPA

Q4	27/03/02
Q1	19/06/02
Q2	18/09/02
Q3	11/12/02
Q4	19/03/03
Q1	18/06/03

CAPITAL INVESTMENT:

- **WIC 23** Monitoring of Capital Investment Programmes for 2002-06 Quality and Standards. Changes and reconciliation to agreed Q & S list of projects and their phasing due on 15 February 2002 (previously 1 February). The agreed Q & S broken down as follows:

Per Q&S Publication August 2001				4 Years
	North	East	West	TOTAL
<i>Water</i>	£m	£m	£m	£m
Distribution infrastructure	180	130	150	460
Treatment assets	170	112	318	600
	350	242	468	1060
<i>Wastewater</i>				
Distribution infrastructure	118	138	184	440
Treatment assets	190	68	252	510
	308	206	436	950
Miscellaneous support assets	134	66	80	280
WA own Spend to Save				0
Additional new development and first time rural sewerage	18	16	16	50
TOTAL	810	530	1000	2340
* includes slippage, site servicing				

This compares with the table K totals:

	Per Annual Return Tables K			4 Years
	North	East	West	TOTAL
<i>Water</i>	£m	£m	£m	£m
Distribution infrastructure	141	91	155	387
Treatment assets	216	42	319	577
	357	133	474	964
<i>Wastewater</i>				
Distribution infrastructure	72	152	67	291
Treatment assets	241	163	392	796
	313	315	459	1087
Miscellaneous support assets	84	28	24	136
WA own Spend to Save	38	38	27	103
Additional new development and first time rural sewerage	18	16	16	50
TOTAL	810	530	1000	2340

This clearly suggests some very material changes in the programme which need, as a matter of urgency, to be explained. Additionally, the detail of projects within ESWA is not sufficient and needs disaggregation. The attached example from NoSWA would be appropriate.

- **WIC 24** Leakage Strategy – due on 22 February 2002.
- **Capital Investment Appraisal Audits** – due in September/ October 2002.
- **Capital Investment Return (4th quarter)** – due on 10 May and subsequent returns due one month after the quarter end.
- **Named Projects Completed in 2001-02** – due on 10 May 2002.

COSTS AND PERFORMANCE:

I have also requested the following information from Scottish Water:

- **WIC 25** Monthly Submission of Resource Accounting and Budgeting (RAB Tables) – due on 22 May, and then 15 working days after the end of each accounting period thereafter.
- **WIC 26** Revised Action Plans – Completion of top down plans and identification of Scotland-wide initiatives: due 1 May, with an up-date on 1 November 2002.

These requests are essential to effective and transparent regulation. I am still waiting for confirmation from you that these requests will be met in full on the suggested timescales.

I hope you find the above information both informative and useful, and I am looking forward to receiving your submissions in due course.

Yours sincerely

ALAN D A SUTHERLAND
Commissioner

cc XXXX

2 April 2002

To Chief Executive of Scottish Water

WIC 28: Procedure for Information Returns between the WIC Office and Scottish Water

I found our recent discussion of the management of information flow between Scottish Water and my Office to be very constructive. I believe that it is important to ensure that the day-to-day information requests are accurate and timely. This will avoid unnecessary tensions on either side. It is also important that there are clear channels of communication so that more strategic or ad hoc issues can be dealt with effectively. At our meeting, I outlined the new organisational structure of my Office and I am pleased to attach an organisational structure with contact telephone numbers. Please feel free to address specific strategic or ad hoc issues to me and/or to the responsible Director. As you know, XXXX and XXXX are currently leading our efforts in the investment and revenue areas.

With regard to day-to-day information requests, I have set up an e-mail address for the receipt of regulatory information from Scottish Water. This address is monitoring@watercommissioner.co.uk. This mirrors the regulation mailbox, which was established by East of Scotland Water. I confirm that this Office will not use any Scottish Water management or regulatory information, which has not been sent via Regulation@Scottishwater.co.uk to the 'monitoring' address. I would also confirm that any further correspondence on the status of any return should only be communicated via this same routing. I would also request that hard copies of all cover letters sent to the 'monitoring' address be forwarded to this Office in the mail.

In order to ensure that the information supplied to this Office is as robust as circumstances allow, I have asked the Monitoring team to accept information only with appropriate sign-off from the responsible Director. In a hard copy this would be clear from a signature, in an electronic format, it should be clear from the routing of the e-mail that the data has passed through the mail box of the responsible Director.

I would also like to take this opportunity to confirm the sign off which I believe to be appropriate for the information requests, which I outlined in my WIC 27 letter. These are as follows:

CURRENT INFORMATION REQUESTS

Annual Return

Requirements: Completed returns and commentaries.

Submission Date: 17 June 2002.

Required Sign-off: Relevant Director and Regulation quality control sign-off.

Draft Charges Scheme

Requirements: Draft Charges Scheme together with full WIC 1, WIC 4 and WIC 9.

Submission Date: 15 November 2002.

Required Sign-off: Relevant Director and Regulation quality control sign-off.

Customer Revenue and Debt

Requirements: Completed returns for WIC 1 (Revenue from Non-domestic Customers), WIC 4 (Domestic Revenue) and WIC 9 (Non-domestic Debt Analysis).

Submission Date: 15 May 2002 and 15 November 2002.

Required Sign-off: Relevant Director and Regulation quality control sign-off.

WIC23: Monitoring of Capital Investment Programme

Requirements: Submissions were due on 15 February 2002. To date, full information has been received from NSW and WSW. Discussions are ongoing to establish a way forward for the submission of this data by ESW.

Required Sign-off: Relevant Director and Regulation quality control sign-off.

WIC 24: Asset Maintenance – Leakage Strategy

Requirements: The original submission date for this return was 22 February 2002 which was missed. The information is still required and the revised deadline is noted below.

Submission Date: 19 April 2002.

Required Sign-off: Relevant Director and Regulation quality control sign-off.

Capital Investment Appraisal Audits

Submission Date: September/ October 2002.

Required Sign-off: Relevant Director and Regulation quality control sign-off.

Capital Investment Return (4th Quarter)

Submission Date: Due 10 May 2002 and subsequent returns due one month after quarter end.

Required Sign-off: Relevant Director and Regulation quality control sign-off.

Named Projects Completed in 2001-02

Submission Date: 10 May 2002.

Required Sign-off: Relevant Director and Regulation quality control sign-off.

WIC 25: Resource Accounting and Budgeting

Requirements: First submission should cover RAB Tables for Period 12, 2001-02 and Period 1, 2002-03. Subsequent submissions should be made for each period.

Submission Date: First return due on 22 May 2002 and then 15 working days after period end for each subsequent submission thereafter.

Required Sign-off: Relevant Director and Regulation quality control sign-off.

WIC 26: Revised Action Plans

Requirements: Completion of top down plans and identification of Scotland-wide initiatives.

Submission Date: 1 May 2002 and 1 November 2002.

Required Sign-off: Relevant Director and Regulation quality control sign-off.

I hope that you find the above information useful. If you have any comments on either the outline of the process for the information flows between our offices or on the submissions due, please do not hesitate to contact me. I look forward to receiving your submissions in due course.

Yours sincerely

ALAN D A SUTHERLAND
Commissioner

12 April 2002

To Chief Executive of Scottish Water

WIC 29: Annual Return Submissions

This letter is my formal request for Annual Return information. In WIC 27 I set out a timetable for information requirements, including the Annual Return. As indicated in that letter, today I am issuing the Guidance Notes and table templates for the 2002 WIC Annual Return. The procedure for the submission of the Annual Return will be the same as that outlined in WIC 27. The main points to note are attached (Annex 1).

I trust that the Returns will build on the improvements seen in last year's final Return, both in terms of the completeness and quality of the information supplied. I would however, like to take this opportunity to emphasise the importance of the quality, accuracy and completeness of the information, which you will provide in the tables and Commentary documents. These must be completed in line with the guidance given in the Definitions and in accordance with the prescribed formats. This information does materially affect our ability to benchmark accurately and it is therefore in your interests to submit as complete and accurate a Return as possible. I should also warn you that, as stated in WIC 27, any costs incurred arising from incorrectly formatted data would have to be separately billed.

The Annual Return tables should be signed off by the relevant Director. I require 2 paper copies and an electronic version of each submission of the Return tables to be delivered to the monitoring team at the WIC office by the 17 June 2002.

If your staff have any further questions or queries relating to the Annual Return, they should not hesitate to contact XXXX or XXXX.

Yours sincerely

ALAN D A SUTHERLAND
Commissioner

Annex 1

The Return will consist of:

- Sets of Excel tables.
- Definitions.
- Separate guidance to Scottish Water covering those tables where consolidated data is required.
- Copies of the Change controls carried out between 2000-01 and 2001-02 Return.

Tables that will not be required for submission:

ESWA, NOSWA and WOSWA	Scottish Water
G7 and G8	E3, E5 and E9
K1, K2, K3, K4 and K5	G7 and G8
S1, S2, S3, S4, S5, S6 and S7	K1, K2, K3, K4 and K5

Changes to the Annual Return tables.

Change control numbers V5065, V5066, V5067, V5068 and V5069 are material, and comprise:

- Additional columns in Section G to record project expenditure prior to report year.
- Additional column inserted into the output measures block in G5 and G6, to record percentage output.
- New quality codes QW1 and QW2.
- New output code EC8, how it affects Section G.
- New output code EC8, how it affects Section C.

The Annual Returns are to be submitted by 17 June 2002.

4 October 2002

To Chief Executive of Scottish Water

WIC 30: ACCOUNTING SEPARATION

As part of the *Strategic Review of Charges*, I set out my initial thoughts on the necessity of implementing an accounting separation of certain elements of Scottish Water's business. The Minister accepted my recommendation regarding accounting separation and recently I have held meetings with your staff to discuss my initial thoughts on this issue. I am taking this opportunity to inform you that I am minded to consult on the issue of accounting separation in the second half of November 2002.

Non-core business

You will already be aware that my statutory duty has been revised such that I am now bound to promote the interests of core customers. In the *Strategic Review of Charges*, I made clear that I am not against Scottish Water pursuing commercial opportunities, however, I would be concerned if this impinged upon the risks borne by customers of the core business.

The water and sewerage companies in England and Wales are already required to produce separate Regulatory Accounts for the appointed business. I believe that it would be beneficial for both customers and Scottish Water to produce such accounts for the core business in Scotland. In the longer term, this may actually improve the relative performance of Scottish Water in its core activities. I am also keen to ensure that our benchmarking is conducted on a totally like for like basis and such accounting separation would increase the comparability of the reported financial statements.

Retail/non-retail activities

Given the possible development of a framework for competition in Scotland and given the requirements placed on Scottish Water by the Competition Act (1998), I intend to require Scottish Water to separate the retail cost elements of the business from the non-retail elements. I am aware that Scottish Water is working hard to gain a thorough understanding of its costs and I believe that such transparency in the costs of the different elements of the value chain would be beneficial to customers and ultimately to Scottish Water. Scottish Water is likely, if it has not already been asked, to receive requests for a wholesale price. Only a clearly defined separation of retail activities would be likely to withstand the likely independent scrutiny.

Initial thoughts

I attach some initial thoughts on the possible elements that constitute core, non-core, retail and non-retail activities. I would stress that these are preliminary and would welcome your views. These views will inform my drafting of the consultation.

I look forward to hearing from you.

Yours sincerely

ALAN D A SUTHERLAND
Commissioner

cc XXXX, Scottish Executive

Accounting Separation – Preliminary Ideas

	Retail	Non-retail
Core	<ul style="list-style-type: none"> • Retail contract management & systems • Customer information systems • Customer account management (key account management) • Customer meter reading • Customer billing • Customer revenue collection • Customer debt collection • Customer debt write-off • GMS appropriate to billing, complaints etc. • Metering • Disconnection notification 	<ul style="list-style-type: none"> • Abstraction, treatment, storage, conveyance & distribution of potable water • Conveyance, treatment & disposal of sewage including public septic tanks • Quality control • Call centre for interruptions, quality problems, flooding • Customer information systems • GMS appropriate to interruptions, flooding, and infrastructure etc. • Supply pipe repair • Supply installation • Physical disconnection • Communication/education of flush/don't flush, reservoir safety
Non-core	<ul style="list-style-type: none"> • Added value services – insurance, bottled water etc. • Private septic tank emptying • Communication/education – customer satisfaction e.g. water conservation, septic tank care • Tailored service consultancy • Grey water • New connections • General engineering consultancy • Laboratory services • Special Agreements 	

17 March 2003

To Chief Executive of Scottish Water

WIC 31: Dates for submission of information to the WIC 2003-04

The purpose of this letter is to outline the process to be followed for the submission of the 2002-03 WIC Annual Return, and to highlight the deadlines for WIC letter information requests for the year ahead. During the year, I will also begin preparing for the next Strategic Charges Review, and will write to you separately regarding the timetable for key stages in that process.

As with last year, I am sure that you understand the importance of accurate and clear communication to the success of the collation, and monitoring, of regulatory information. It is therefore vital that all staff are informed of those dates which apply to them. Last year some deadlines were still missed and it is important that we ensure proper and timely submissions of all regulatory information. I will again regard late or (unexplained) incomplete returns as an indication of a problem and that further regulatory scrutiny is required.

Annual Return

The procedure for the submission of the WIC Annual Return will be much the same as previous years, however this year I will expect only a submission for the merged entity of Scottish Water. The Annual Return format will be distributed in early April, with completed Returns and Commentaries due on 16 June 2003. The template will include the following elements:

- Sets of tables in Excel spreadsheet format, for data capture.
- Detailed, up-dated guidance and definitions to assist completion of the tables.
- Copies of change controls identifying changes carried out between 2001-02 and 2002-03 Return.
- Template for Commentary document.

Please note that Section K: Investment Plan tables will not be issued or required for submission this year.

I would like to reassure you that there will be very few material changes to the layout or content of the Annual Return Tables.

I continue to draw your attention to the importance of providing data in the correct format. I am pleased to report that there was a marked improvement in the format of the data submitted last year thereby allowing a smoother upload process into the database. I am keen that this progress continues and look forward to a similar standard being submitted this year. Where data is not in the prescribed format and fails to upload, we will, as with last year, ask for resubmissions with the costs of any failed uploads being billed separately to you.

It remains a basic requirement that the tables be signed off to confirm that the information provided is accurate and complete, thus allowing my staff to raise any queries with the relevant individuals. Any unsigned tables will be returned.

Again, as with last year, I would like to emphasise the importance of the quality, accuracy and completeness of the information, which you will provide in the tables and Commentary documents. With regards to the supporting Commentary document, I require the content and quality of this to be of a high standard. As I state in our 2001-02 Costs and Performance Report, the information contained in the Commentary "is fundamental to ensuring proper, fair and objective comparisons can be made". I therefore need year on year changes in data to be explained and, where appropriate, justified. I also need to know what material assumptions and adjustments have been made to derive reported numbers. I would expect at least as much relevant detail as that provided by West of Scotland Water Authority in their 2002 Annual Return. To help facilitate this, I have included a standard format for the Commentary document, which should aid completion. This standard template will be sent out to you along with the Annual Return tables.

Charges Scheme (WIC 7)

Following the 2002 submission process, we tentatively agreed to review the process for future submissions. We will aim to agree a process over the next few months.

WIC Letter & Team Information Requests

REVENUE & TARIFFS:

- **WIC 1/9/14/22** Revenue from Non-Domestic Customers/Non-Domestic Debt/Special Agreements for Large Customers – due on 02 May and 07 November 2003.
- **WIC 4** Domestic Revenue – due on 16 May and 14 November 2003.

The above are all requested in Excel spreadsheet format.

COMPETITION & CUSTOMER SERVICES:

- **WIC 5** Customer Service Performance Excel based Reports due:

Qtr	Due Date
Q4	09/05/03
Q1	08/08/03
Q2	07/11/03
Q3	13/02/04
Q4	07/05/04

- **WIC 6** Written Quality Performance Assessments (QPA) – Written complaints and telephone complaints where a written response is requested.

The following are a set of provisional dates and XXXX will be in touch with your staff to discuss the WIC 6 data request further.

Qtr	WA provide Excel list	WA advised of selection	QPA
Q4	28/04/03	05/05/03	23/05/03
Q1	28/07/03	04/08/03	22/08/03
Q2	27/10/03	03/11/03	21/11/03
Q3	26/01/04	02/02/04	20/02/04
Q4	26/04/04	03/05/04	21/05/03

- Specialised QPA – Written complaints and telephone complaints where a written response is requested, will be carried out on the following provisional dates. We will confirm the audit and advise you of the subject of the audit 3 weeks prior to the provisional date in the first column below.

Qtr	WA provide Excel list	WA advised of selection	QPA
Q4	12/05/03	19/05/03	06/06/03
Q1	11/08/03	18/08/03	05/09/03
Q2	27/10/03	17/11/03	05/12/03
Q3	09/02/04	16/02/04	05/03/04
Q4	17/05/04	24/05/04	04/06/04

- Telephone QPA (assesses 'current' position rather than retrospective analysis of other QPA). Any change in the format will be advised in due course.

Qtr	Due Date
Q4	28/03/03
Q1	20/06/03
Q2	19/09/03
Q3	12/12/03
Q4	19/03/04
Q1	18/06/04

INVESTMENT & ASSET MANAGEMENT:

- Ongoing joint work to establish Q&S 2 baseline (**WIC 18**), in Excel format.
- Reconciliation of Base-Line to Current SW Capital Investment Plan (**WIC23**), Excel based format with estimated completion by 30 May 2003.
- Updated Leakage Strategy (**WIC 24**) – Word document, requested for 31 December 2003.
- **Capital Investment Appraisal Audits**, in Access database format – due in April 2003 and the Investment Team will contact Scottish Water in the near future to finalise a programme.
- **Capital Investment Return**, Excel and Word based documents – due one month after each quarter end.

COSTS AND PERFORMANCE:

- **WIC 25** Monthly Submission of Resource Accounting and Budgeting (RAB Excel Tables & Word document) – due 20 working days after the end of each accounting period.
- **WIC 26** Revised Action Plans – Completion of top down plans and identification of Scotland-wide initiatives in Word format: due 31 March 2003 (deferred from the original submission date of 30 November 2002).

All of the above requests are essential to effective and transparent regulation and I await confirmation from you that these requests will be met in full on the suggested timescales.

I hope you find the above information both informative and useful, and I am looking forward to receiving your submissions in due course.

Yours sincerely

ALAN D A SUTHERLAND
Commissioner

cc *XXXX, Scottish Executive*

11 February 2003

To Chief Executive of Scottish Water

WIC 32 – Delivery of Quality & Standards 1

As you will know, my office is currently working with your staff to establish the projects that comprise the original Quality and Standards II programme. In completing this work, as you have highlighted, it is important to understand those Q&S I projects that were not completed prior to the creation of Scottish Water. I would therefore be grateful if you could provide me with the following information:

- The projects associated with Q&S 1 which are underway but have not yet completed, showing the spend to date and remaining spend forecast.
- Projects which are identified as required under the Q&S 1 investment programme but have not yet commenced, including forecast spend.

Less urgently, it would also be useful to receive:

- The projects which have been delivered to date under the Q&S 1 programme, including the capital spend on these projects over the Q&S 1 period.

Obviously we are all working to tight timescales and I would be grateful for the above information at the earliest opportunity. I share your view that significant change is required in the management of the delivery of capital projects and I am keen to ensure that your efforts are not unduly delayed.

Yours sincerely

ALAN D A SUTHERLAND
Water Industry Commissioner

11 April 2003

To Chief Executive of Scottish Water

WIC 33: Annual Return 2002-03 Submission

This letter is my formal request for Annual Return information. In WIC 31 I set out a timetable for information requirements, including the Annual Return. As indicated in that letter, today I am issuing the Guidance Notes and table templates for the 2003 WIC Annual Return. The procedure for the submission of the Annual Return will be the same as that outlined in WIC 31.

I would like to take this opportunity to again emphasise the importance of the quality, accuracy and completeness of the information, which you will provide in the tables and Commentary documents. These must be completed in line with the guidance given in the Definitions and fully in accordance with the prescribed formats. Please ensure that no changes are made that have not been agreed with me in writing in advance.

This information does materially affect our ability to benchmark accurately and it is therefore in your interests to submit as complete and accurate a Return as possible. All Commentary documents especially should be as complete, accurate, relevant and authoritative as possible. I also stated in WIC 31 that there would be a template provided this year for the Commentary document; however, it is unlikely that this will be available at this time and as such the format of the Commentary documents should be completed as previous years.

I understand that Scottish Water has requested two copies of the Excel spreadsheet Annual Return tables, one password protected and one not. I am happy to supply this provided that only the password-protected tables are submitted back to WIC. Any tables submitted not in the prescribed protected format will be returned to Scottish Water and resubmissions requested.

I understand that Scottish Water has also requested version numbers to be inserted on the tables and definitions and again I am happy to include this to aid completion.

The Annual Return tables must be signed off by the relevant Director and any unsigned tables will be returned. I require 2 paper copies and an electronic version of each submission of the Return tables to be delivered to the Monitoring team at WIC. I can confirm that a submission date of 20 June 2003 following sign off by the Regulatory Management Group at Scottish Water is acceptable.

If your staff have any further questions or queries relating to the Annual Return, they should not hesitate to contact XXXX or XXXX.

Yours sincerely

ALAN D A SUTHERLAND
Commissioner

1 April 2003

To Chief Executive of Scottish Water**WIC 34: Strategic Business Plan Submission – Table T1: Detailed Income and Expenditure Projections 2003-04 to 2005-06**

In order to focus our discussion regarding the prospects for Scottish Water for the remainder of the regulatory period, I would be grateful if you could complete the attached Excel table and return it to me by Monday 7 April 2003.

The format of the above request is similar in style to the Annual Return and RAB tables and to aid completion I have also included a set of definitions.

I would like to take this opportunity to emphasise the importance of the quality, accuracy and completeness of the information, which you will provide in the table and Commentary documents. These must be completed in line with the guidance given in the Definitions and in accordance with the prescribed formats. This information does materially affect our ability to benchmark accurately and it is therefore in your interests to submit as complete and accurate a Return as possible.

If you have any query regarding the above then please do not hesitate to contact XXXX on XXXX.

Yours sincerely

ALAN D A SUTHERLAND
Commissioner

cc XXXX, Scottish Executive

WIC 35: Not used

28 August 2003

To Chief Executive of Scottish Water

WIC 36: Communication and progress monitoring

The purpose of this letter is to suggest a framework for meetings between this office and Scottish Water to deal with regulatory issues, and to propose arrangements to allow greater clarity and predictability in progress monitoring, particularly on operating expenditure.

Regulatory dialogue

Whilst we and Scottish Water are continuing to deal effectively with regulatory matters, I feel that it would be beneficial to both parties to put in place a more formal framework for dialogue and review. I believe that this would help avoid surprises on either side, and would reassure the Scottish Executive that issues are being addressed and resolved on an ongoing basis.

My suggestions would be as follows:

1. Quarterly meetings between the Chief Executive and the Water Industry Commissioner, to identify issues to be resolved, to ensure open dialogue on these issues, and to signal changes (for example in accounting policy or capital outputs) likely to affect progress monitoring.
2. Meetings approximately every six weeks at a senior working level, generally between directors, to cover in detail and report progress on issues identified under 1.
3. Presentation by the Water Industry Commissioner to the Board of Scottish Water approximately every six months, to review progress towards regulatory targets by Scottish Water.
4. Minutes to be taken and agreed at all meetings under 1. and 2., and copied to the Water Services Unit of the Scottish Executive.

Progress monitoring

I believe that we share a common view that clarity and predictability of Scottish Water's progress towards efficiency targets is vital, especially given the expected sustained pace and scale of progress. In view of this, I wish to propose arrangements that should improve the effectiveness and clarity of progress monitoring. The main elements of my proposal are:

1. Scottish Water would use the RAB Returns to report changes in accounting standards, policy, or practice that affect reported cost allocations, and their impact on reported numbers.
2. We would work with Scottish Water to ensure that the RAB Returns collect all the necessary information to calculate underlying costs on a like for like basis (for example new opex, appropriate core and non-core breakdown, etc).
3. We would work with Scottish Water and the Scottish Executive to ensure that the RAB Return definitions are consistent with or can be reconciled with the Statutory Accounts.
4. We would determine adjustments to reported costs in the current financial year, to bring them into line with accounting standards, policies and practices prevailing in 2000-01, the base year for the Strategic Review of Charges.
5. We would feed back to Scottish Water and the Scottish Executive updates of our regulatory adjustments at regular meetings (as outlined earlier in this letter), so that our assumptions and calculations can be understood and, if necessary, challenged.
6. We would provide the Board of Scottish Water with a six-monthly assessment of progress against regulatory targets, taking account of these calculations.

7. We would ask the Auditor General for Scotland to audit the process behind our regulatory adjustments and their communication to Scottish Water.

8. We would ask a Reporter to give an opinion on the information provided by Scottish Water regarding the allocation of operating expenditure and impact of accounting changes.

9. The adjustments would be noted in Scottish Water's Annual Report and Accounts and in our annual Costs and Performance Report.

My purpose in suggesting these arrangements is to ensure that regulatory comment is fair and that Scottish Water and the Scottish Executive have the means to track the Authority's progress as viewed by the regulator. This should allow Scottish Water to plan improvements in operating efficiency with greater confidence, and provide customers with an objective and accurate view of performance.

I am aware that regulatory adjustments to current year (and ultimately audited) costs may give rise to misgivings on the part of Scottish Water, and therefore I believe it very important to set out the logic for making them. The starting point for analyses of progress by Scottish Water on operating expenditure is the Strategic Review of Charges 2002-06. The targets set out in the Review are based on fair like for like benchmarking of costs with companies in England and Wales, having first verified that accounting treatments were comparable, or where necessary, that cost allocations could be aligned for comparison purposes. In the Annual Return for Scottish Water, I have adopted the Ofwat cost breakdown and definitions. This has ensured a high degree of consistency with England and Wales.

In continuing to compare performance with England and Wales, and in tracking progress by Scottish Water year on year, I need to exclude as far as practicable material influences that are not part of the underlying economic picture but are artificial effects brought about by changes in the way costs are accounted for. The principle of assessing the underlying economics has been a cornerstone of financial analysis for over 60 years. It was introduced by Graham and Dodd, who are regarded by financial analysts as having written the founding and seminal work for their profession¹.

The same principle is vital to effective and fair regulation, where targets are set based on economic principles, and inevitably without the benefit of future knowledge on the regulator's part of changes in accounting treatment, non-recurring costs, etc. The adjustment of reported accounting numbers for consistency with regulatory assumptions is accepted practice. For example, Ofwat makes adjustments to operating expenditure every year and publishes them. It asks Reporters to provide an opinion on companies' requests for adjustments, and these opinions are also published. The published adjustments are not necessarily those requested by the company. At price reviews, there is a fuller analysis to take account of changes in accounting policy over time, and differences between companies' policies.

It is important to note that Ofwat's adjustments are in the context of regulatory accounting issues that are considerably simpler as regards operating expenditure than those in Scotland. For example, core business is ring fenced, there are no PPP schemes, bad debt is low, capitalisation policies are reasonably stable and customers are not funding spend to save initiatives.

In the case of the electricity industry, Ofgem requires all licensed companies to obtain its approval before changing an accounting policy used in the preparation of regulatory accounts. Further, Ofgem adjusts the results of the statutory accounts of licensed companies to the basis used in the price review². This is the approach recommended by Deloitte and Touche in their review of regulatory accounting guidelines for the electricity distribution industry. They stated "The need to reconcile data back to the price control must be a key driver in the relationship between Ofgem's RAGs and the output from distribution businesses"³.

¹ Graham and Dodd's Security Analysis, first published in 1934. The 5th edition, 1988, which contains no revisions of principles (p xi) lays out seven steps for analysts dealing with income statements. The first is (p 156) "1. Deal properly with non-recurring items. The analyst must eliminate nonrecurring items from a single year analysis, but include them in most long term analyses." It discusses examples of non-recurring items and states (p 157) "Another non-recurring item is the cumulative effect of an accounting change or a change in an estimate." In dealing with non-recurring items, it says that analysts should ask (p 159) "What pattern of spreading the gain or loss best describes the economics of the situation? ... The analyst must remember that the pattern of gains or losses that was recorded – all in one period – is the least appropriate one, because it is almost certainly the wrong pattern."

² See for example Ofgem The National Grid Company plc – Regulatory Accounting Guidelines, August 2002, paragraphs 2.8 and 2.9. It lists 12 adjustments, including capitalisation. Similar guidelines exist for distribution companies.

³ Deloitte & Touche Regulatory Accounting Guidelines – Report to Ofgem, March 2001.

The Office of the Rail Regulator specifies that regulatory financial statements “shall be prepared such that, insofar as reasonably practicable, ...the definition of items in primary statements; the valuation of assets and liabilities; the treatment of income and expenditure as capital or revenue; adjustments in respect of the provision, utilisation, depreciation and amortisation of assets and liabilities; and any other relevant accounting policies shall be consistent with...the Determination Assumptions for the corresponding period”⁴.

In excluding artificial effects, it would in theory be possible (although not accepted regulatory practice) to take the current year as the baseline for comparison. This would have the advantage of building in current accounting standards and treatments, and of consistency with the latest audited accounts. There are three reasons why this option is not practicable other than over the very short term. First, it would require access to historic account details in order to assess what the impact of say, 2003-04 accounting policy would be on each of 2000-01, 2001-02 and 2002-03 detailed cost allocations. I do not think it likely that Scottish Water would have such information. Second, benchmarking the current year's costs with companies in England and Wales could well require adjustments to their reported costs to align them with Scottish Water. Thirdly, it would inevitably be necessary for me to adjust and restate the targets set out in the Strategic Review of Charges every year, which I believe would lead to confusion for all stakeholders. I am therefore left with the alternative option of determining regulatory adjustments for the latest or current year.

In making adjustments to costs reported in the audited accounts, I am in no way questioning either the veracity of the accounts nor their compliance with standard accounting treatments and with UK GAAP accounting standards. Scottish Water is best placed to determine how it should represent its business. Indeed, it is entirely to be expected that a newly merged entity undergoing fundamental change would need to reappraise its accounting policies.

It is vital that Scottish Water should be able to track and forecast its performance as measured from a regulatory perspective. It is in the interests of customers for the Board and senior management of Scottish Water to monitor not only the progress of the business as viewed through management and statutory accounts, but also the underlying economic picture as viewed by the regulator. This should include forecast costs. In December 2002 I offered to provide the Board of Scottish Water with a six-monthly update on progress against regulatory targets, but the offer was not taken up. I now feel that this offer should be widened, to enable senior managers and the Scottish Executive to have access to the detail behind my adjustments on an ongoing basis.

Currently, the key material areas likely to be subject to review would appear to include the following:

- New accounting standards not in force in 2000-01
- Changes in accounting policy by Scottish Water, relative to 2000-01
- Consolidation effects on costs arising from the merger (mainly inter-authority bulk supply costs)
- Accounting treatment and allocation of Spend to Save
- Accounting for bad debt
- Differentiation of provisions and spend against provisions
- Treatment and allocation to PPP, relative to 2000-01 forecast costs
- Identification and separation of core and non-core activities, costs and revenues
- Capitalisation of employment costs, materials and other costs
- Net new operating expenditure arising from growth, compliance and enhanced levels of service
- Identification and treatment of non-recurring costs

In examining these areas, I would apply the following principles, which were originally discussed with Scottish Water in May 2002 and were published in the Costs and Performance Report in February 2003:

- Do forecast outturns of all components show consistency with the reported year to date figures and trends?
- Can movements in the provision for bad debt be fully explained (since a reduction in the provision could artificially reduce costs)?
- Is new operating expenditure consistent with measures taken to improve service, and additions/enhancements to the authorities' operational assets?
- Are PPP costs correctly allocated, and within the limits agreed in the Strategic Review?
- Is the declared level of own work capitalised consistent with changes in the amount of capital investment?
- Is Spend to Save expenditure within the limits set by the Scottish Executive, and properly justified?
- Are accounting items, exceptionals and non-recurring costs correctly allocated and explained?
- Do any changes in the allocation of core and non-core business costs affect the interpretation of trends in base operating cost?
- Do any other relevant changes in accounting policy affect the interpretation of trends in base operating cost?

⁴ Office of the Rail Regulator, Regulatory Accounting Guidelines, July 2003, para 1.7.

In the event that a reported cost component appears to be inconsistent or anomalous according to these principles, it may be necessary to adjust the calculation of base operating expenditure, unless the item can be justified.

In reporting my conclusions on the pace and scale of efficiency improvements by Scottish Water, I will need to take into account overall performance. There are five critical factors that have an impact on customers' interests:

1. Are levels of service improving in line with expectations?

Efficiency improvements require levels of service to remain stable or improve, while reducing costs.

2. Are investment plan outputs being delivered, sustainably, to time and within budget?

Future progress on efficiency is likely to depend on investment outputs being achieved.

3. Is depreciation being charged at a sustainable level, taking prudent account of asset lives?

Underprovision for depreciation could jeopardise the sustainability of Scottish Water.

4. Are other cost movements (new business, asset disposals, new debt, interest payments) in line with expectations?

A shortfall against expectations could offset financially some of the gains achieved in efficiency.

5. Is Scottish Water on track to narrow the efficiency gap with companies in England and Wales?

The more the gap is narrowed, the better the value for money for customers.

The monitoring of efficiency improvements by Scottish Water will therefore be assessed in the light of these five critical factors. From a regulatory standpoint, conclusions of analyses will recognise that underperformance in one area may well be compensated by overperformance in another.

Way forward

I believe that the proposals contained in this letter build on the ten principles that were endorsed by the Minister for Environment and Rural Development and agreed by Scottish Water and the Water Industry Commissioner. I would welcome your suggestions as to how they might be strengthened. Subject to your agreement, I would propose that our first meeting under these arrangements should take place in early September.

I am copying this letter to the Water Services Unit.

Yours sincerely

ALAN D A SUTHERLAND
Commissioner

cc XXXX, *Scottish Executive*

30 September 2003

To Chief Executive of Scottish Water**WIC 37: Data for Serviceability Model**

As part of my preparations for the next Strategic Review, I am seeking to establish the extent to which data currently exists to populate a capital maintenance serviceability model. This will also assist with the work of workpackage 2 (assets) in Quality & Standards III.

I attach a summary of the serviceability indicators currently used by OFWAT. More detail on these items is available, if required, in the OFWAT document Maintaining serviceability to customers: an update on serviceability indicators and measures (30 April 2002). For each of the items listed can you add columns to indicate both the current and historical availability of the data items. We also wish to know whether this data is available on a regional basis.

As you will know, the principle of serviceability modelling is predicated on the availability of long term trend data.

I would ask that you provide information on the availability of this data by 10 October 2003. I would further ask that you provide the available data itself by 10 November 2003.

Please contact me if you require clarification on the information required.

Yours sincerely

ALAN D A SUTHERLAND
Commissioner

cc XXXX, Scottish Executive

22 October 2003

To Chief Executive of Scottish Water

WIC 38: Publication of Annual Return and Investment Programme Information

I have received a number of requests in recent months for the publication of annual return information. As you will know, OFWAT publish this information for companies in England and Wales and this is now firmly established as a customer and stakeholder expectation.

To date, I have considered the Scottish annual return information to be insufficiently robust to allow publication. However, on reviewing the June 2003 dataset, I am now content that the customer benefits of publication outweigh any risks associated with data quality.

I therefore propose to make this year's annual return data available as of 1st December 2003. This would include all data tables and commentary, including Scottish Water's Overview.

The published information will also include the "Table G" list of investment projects. This is consistent with your recent announcement that Scottish Water can provide Q&S II investment project information to customers and I welcome this increased level of clarity of investment output. It will be important to ensure that the information published is as accurate as possible and consistent with the recent "WIC 18" work. We may therefore need to discuss whether a revised Table G submission is required prior to publication.

I also propose to publish, with suitable caveats, the investment programme as an appendix to the next Investment and Asset Management report which is due early next year.

I would welcome your comments on this proposal.

Yours sincerely

ALAN D A SUTHERLAND
Commissioner

cc XXXX, WSU, Scottish Executive

22 October 2003

To Chief Executive of Scottish Water

WIC 39: Finalisation of the Q&S II Capital Investment Programme

With regard to the ongoing work associated with the Q&S II capital investment plan and the development of the WIC 18 list, it would appear helpful at this point to review progress and agree the key steps moving forward.

Progress update

Version 2.0 of WIC 18 was issued on the 23rd of September 2003. The latest version includes the agreed reallocation of IT expenditure.

The red quality projects (£47M) have been reviewed and agreed by the quality regulators. The environmental and drinking water quality "parking lot" projects are being evaluated and prioritised by the appropriate regulator. It is expected that substitution project proposals in these areas will come forward before the end of the year.

The project categories included in the WIC 16 "high priority" funding (£50M) have been agreed with the stakeholders and specific projects are currently being identified, prioritised and costed. It is expected that substitution proposals in this category will be ready by the end of November.

The "north slippage" (£11.5M) programme line has been disaggregated and an initial list is available. Further work is currently underway by Scottish Water to provide additional information for WIC. It is expected that the defined set of project outputs associated with this investment will be available by end November.

The "Spend to Save" programme lines (£103M) have not yet been reallocated to project outputs. Under the agreed "ten principles", access to borrowing will be restricted if clear project outputs for this funding are not agreed. Scottish Water should now bring forward a set of proposed project outputs associated with this investment for review.

The definition of the capital maintenance elements of the programme has been significantly increased but relatively high "unallocated" expenditure, which is identified by investment category but not project output, remain. Work has to continue to reduce these unallocated elements.

A broad methodology for project substitution has been agreed. The associated mechanisms for approval of substitutions, involving equivalence of cost and project output, are under consideration by Scottish Water and WIC. These mechanisms require to be agreed before the substitution of the "red" quality projects can be completed.

Next steps

I am sure you will agree that it is essential that we maintain progress towards a resolution of the remaining items as quickly as possible. With this in mind, I list below my assessment of the key steps for moving forward.

1. Finalisation of the mechanisms for substitution. To provide consistency of approach and the appropriate degree of engineering knowledge, I intend to use the services of the proposed Reporter to verify the cost equivalence of substitutions, prior to granting my approval. For your information, the criteria the Reporter will be asked to examine will include, but not be restricted to:

- a) The equivalence of risk and serviceability
- b) Whether appropriate engineering solutions are being employed
- c) Does the proposed solution comprise best practice
- d) Whether costs are being properly derived

I expect to appoint a Reporter early in the New Year. For the initial tranche of substitutions associated with the Quality programme I estimate that a period of 8 weeks will be required for the Reporter to carry out the necessary assessment. It should therefore be possible to complete the Quality substitutions by the 31st of March 2004 provided I receive the proposed substitutions before Christmas.

2. A date needs to be established at which the remaining "unallocated" elements of the Capital Maintenance elements of the programme are fixed and any further changes are subject to the substitution mechanism. I will therefore expect, by the 31st of January 2004, a full list of Capital Maintenance project outputs, including any necessary residual unallocated elements which have not been assigned to project outputs. Movements beyond that

time will then be subject to the substitution mechanism, specifically including transfers from the unallocated elements into defined project outputs.

3. The other outstanding items in the definition of the programme are WIC 16, "north slippage" and, particularly, the "spend to save" items. We are in agreement that these need to be resolved as soon as possible if customer interests are to be protected and in line with the recent agreement on the restriction of borrowing for undefined outputs in the "ten point principles".

With regard to the "Spend to Save" item, in line with the agreed way forward I would ask that you now provide me with a list of project outputs associated with this expenditure for our review. For your information, I see it as essential that this matter is resolved by 31st March 2004, prior to the commencement of the final two years of the Q&S II programme. If a resolution is not reached by that date then the borrowing restriction agreed in the ten point principles will apply.

To maintain momentum with this process we have agreed a series of meetings going forward. To ensure clarity of process and efficient use of staff time, it is essential that we pre-define clear objectives and deliverables for these meetings. I would ask that these meeting dates, objectives, deliverables and milestones are agreed at the next meeting of the WIC 18 stakeholder group planned for early November.

I would welcome your comments on these proposals for moving forward but I am of the view that they represent the minimum acceptable timescales and most efficient process for final resolution of the Q & S II investment programme.

Yours sincerely

ALAN D A SUTHERLAND
Commissioner

cc *XXXX, Scottish Executive*
XXXX, SEPA
XXXX, DWQR

12 December 2003

To Chief Executive of Scottish Water

WIC 40: Strategic Review of Charges 2006

Please find below a draft timeline for the next Strategic Review of Charges commencing in 2006.

We will seek to diarise with you three monthly update meetings where we can advise you on the progress of the Review process. In addition, we would be happy to update the Scottish Water Board on a six monthly basis or more frequently as required.

Draft timeline

ORIGINATOR	DOCUMENT	PURPOSE	DATE
1. Ministers	SRC Timeline	Announcement	Jan/Feb 2004
2. WIC	Annual Return 2004	Data request	April 2004
3. WCCP/WIC	Principles of Charging	Draft consultation	April 2004
4. WCCP/WIC	Principles of Charging	Publication of consultation	May 2004
5. WCCP/WIC	Principles of Charging	Consultation period	May 2004 – Sep 2004
6. SW	Annual Return 2004	Data Submission	June 2004
7. WIC	Methodology	Publication of consultation	July 2004
8. WIC	Methodology	Consultation period	July 2004 – Sep 2004
9. Scottish Executive	Q&S III	Final reports from work packages	July 2004 (beginning)
10. Scottish Executive	Q & S III	Publication of Consultation	July 2004
11. Scottish Executive	Q&S III	Consultation period	July 2004 – Sep 2004
12. SW	SW Strategic Business Plan	1st draft to inform 13 below	Oct 2004
13. Scottish Executive	SW Outputs & WIC's SRC remit	In light of 5, 11 & 12 officials advise Ministers	Oct 2004 – Dec 2004
14. WIC	Methodology	Response to consultation	Dec 2004
15. WIC	SW Strategic Business Plan	Comments	Dec 2004
16. WCCP/WIC	Principles of charging	Consultation feedback	Dec 2004
17. Ministers	SW Outputs & WIC's SRC remit	Ministers set WIC's remit & SW's output	Jan 2005
18. WIC	Opex Efficiency Targets	Publish draft targets	Jan 2005 (beginning)
19. Scottish Executive	Q&S III	Public announcement of outcome	Jan 2005 (mid)
20. WIC	Capex Efficiency Targets	Publish draft targets	Jan 2005 (end)
21. SW	SW Strategic Business Plan	2nd draft to inform SRC	Apr 2005
22. WIC	Annual Return 2005	Data request	Apr 2005
23. SW	Annual Return 2005	Data Submission	June 2005
24. WIC	Charge/Revenue caps	Publish draft caps	June 2005 (end)
25. Ministers	WIC remit	Ministers publish any changes arising from 24	Aug 2005 (mid)
26. WIC	Strategic Review of Charges	WIC finalises SRC in light of 25 (and any SW representations arising from 24)	Aug 2005 – Nov 2005
27. WIC	Charge/Revenue caps	Final caps announced	Nov 2005 (Mid)

I hope that you will find this timeline useful.

Yours sincerely

ALAN D A SUTHERLAND
Commissioner

2 March 2004

To Chief Executive of Scottish Water**WIC 41: Reconciliation of WIC 18 with Finance Committee submission of 23/2/04**

I refer to XXXX's letter of 23 February 2004 to the Finance Committee of the Scottish Parliament headed "Scottish Water Capital Investment Programme".

Can you please provide me with a reconciliation of the Investment table on Page 2 of this letter to the current version of the WIC 18 list (version 2.1). I would like to clarify that information being provided in the public domain is consistent and that there is clarity on the extent of delivery of Quality and Standards II.

I would ask you to provide this reconciliation by Friday the 12th of March.

Yours sincerely**ALAN D A SUTHERLAND**
Commissioner

cc *XXXX, Scottish Executive*
XXXX, Scottish Executive

8 April 2004

To Chief Executive of Scottish Water

WIC 42: Dates for submission of information to WIC 2004-05

The purpose of this letter is to outline the process to be followed for the submission of the 2003-04 WIC Annual Return, and to highlight the deadlines for WIC letter information requests for the year ahead. In the event that the Scottish Executive agrees to proceed with the introduction of regulatory accounting, I will write separately to you on the proposed way forward.

Annual Return

Firstly, I would like to take this opportunity to draw your attention to the fact that all information contained within the submitted Return will be published unless it can be demonstrated that the exclusion of certain information is necessary. I must emphasise that this should not affect the quality and quantity of the Tables, Commentary and Overview provided to WICS. I would therefore expect to see at least the same level of information in these documents as in previous years. Any text that Scottish Water feels should not be public information should be clearly highlighted as private and confidential. We can then discuss whether it is appropriate not to publish this information.

The procedure for the submission of the WIC Annual Return will be similar to that of last year. The format will be distributed by 23 April 2004, with completed Return, Commentary and Overview documents due on 18 June 2004. The template will include the following elements:

- 2 Sets of tables in Excel spreadsheet format, for data capture (1 set protected, 1 set unprotected).
- Detailed, up-dated guidance and definitions to assist completion of the tables.
- Edition Sheet, identifying changes carried out between 2002-03 and 2003-04 Return (detailed Change Controls will be available on request).

In my WIC 40: Strategic Review of Charges 2006 letter of 12 December 2003, a 1st draft of your Strategic Business Plan to inform the Strategic Review of Charges 2006 is due in October 2004 and therefore, Section S: Strategic Business Plan will not be issued or required for submission this year. Additionally, Section K: Investment Plan tables will not be issued or required for submission this year.

A small number of material changes have been made to the layout and content of the Annual Return Tables. These have already been communicated to Scottish Water and a dialogue is continuing. I am prepared to set up a workshop at Ochil House on Monday 26 April 2004 at 2.30pm and will be available to take you through the rationale and implication of these changes.

The query process introduced during the 2002-03 Annual Return process appeared to work well and I plan to build upon this for the coming year. I would note however, in last year's Return there were occasions where there were inconsistencies between the Commentary and the data tables, and also instances where the Commentary itself was internally inconsistent. Issues such as these should be checked and rectified by Scottish Water prior to submission, thereby reducing the time spent on the query process. The introduction of the Reporters Black and Veatch should help to ensure that Scottish Water is employing sound methods in recording, storing, retrieving and reporting the appropriate information to WICS in a form that meets our requirements. Text has therefore been added to each Section's definitions to indicate the focus of the work being carried out by Reporters.

The timescales for the investigation of WICS queries are as follows:

Item	Date Issued to SW	Date Due back from SW
Annual Return Queries	02/07/04	16/07/04
2nd round of Queries (if necessary)	30/07/04	13/08/04

I continue to draw your attention to the importance of providing data in the correct format. I am pleased to report that there was a marked improvement in the format of the data submitted last year thereby allowing a smoother upload process into the database. I am keen that this progress continues and look forward to a similar standard being submitted this year. Where data is not in the prescribed format and fails to upload, we will, as with last year, ask for resubmissions with the costs of any failed uploads being billed separately to you.

It remains a basic requirement that the tables be signed off in line with the guidelines to confirm that the information provided is accurate and complete, thus allowing my staff to raise any queries with the relevant individuals. Any unsigned tables will be returned.

Again, as with last year, I would like to emphasise the importance of the quality, accuracy and completeness of the information that you provide in the tables and Commentary documents. I still require year on year changes in data to be explained and, where appropriate, justified. I also need to know what material assumptions and adjustments have been made to derive reported numbers. In the interests of quality and comparability, it is essential that any changes made to data are declared as and when they are uncovered and not reserved for comment in the following submission of the Annual Return Commentary. Any alterations during the year to data in the Return should be sent to Monitoring with the appropriate signatures and reasons given for the change.

WIC Letter & Team Information Requests

REVENUE & TARIFFS:

- **WIC 1/9/14/22** Revenue from Non-Domestic Customers/Non-Domestic Debt/Special Agreements for Large Customers – due on 14 May and 12 November 2004.
- **WIC 4** Domestic Revenue – due on 14 May and 12 November 2004.
- **Scheme of Charges** Submission – due on 10 September 2004

WIC 22 and WIC 4 should be submitted in Excel spreadsheet format. The Revenue and Tariffs team will provide details of our specific requirements for the Scheme of Charges submission (including Excel Spreadsheets for completion) during the summer of 2004.

COMPETITION & CUSTOMER SERVICES:

- **WIC 5** Customer Service Performance Excel based Reports due:

Qtr	Due Date
Q4	07/05/04
Q1	13/08/04
Q2	12/11/04
Q3	11/02/05
Q4	13/05/05

- **WIC 6** Written Quality Performance Assessments (QPA) – Written complaints and telephone complaints where a written response is requested.

The following are a set of provisional dates and XXXX will be in touch with your staff to discuss WIC 6 data requests further.

	SW provide Excel list of complaints	SW advised of selection	SW provide complaints files	QPA
Q4 2003/04	26/04/04	3/05/04	10/04/04	31/05/04
Q1 2004/05	26/07/04	2/08/04	9/08/04	30/08/04
Q2 2004/05	25/10/04	1/11/04	8/11/04	29/11/04
Q3 2004/05	24/01/05	31/01/05	7/02/05	28/02/05
Q4 2004/05	25/04/05	2/05/05	9/05/05	30/05/05

- **WIC 6** Specialised QPA and Telephone QPA – These audits are being reviewed currently and we will write to Scottish Water in the future to discuss how to take them forward.

INVESTMENT & ASSET MANAGEMENT:

- **Ongoing work on WIC 18 Substitution process for Q & S II.** The initial base-line substitution process should be completed by early April 2004. However we anticipate some minor ongoing work in this area to allow small changes to the established base line. This work will be conducted through the WIC18 stakeholder group.
- **Base-Line Investment programme for Q & S III (equivalent of WIC 18 for Q&S II).** The format and timing of this is currently under discussion in the Q & S III project group. However, early in the 2004-05 financial year, and by end May 2004 at the latest, we will require a formal submission of the full Q & S III programme with project level definition and properly defined outputs. This will form an essential pre-requisite to the capital investment element of the Strategic Review of Charges. In the absence of full definition of the programme, we will base our assumptions of capital investment requirements in the Strategic Review of Charges on standard industry models.
- **Updated Leakage Strategy (WIC 24)** – Word document, requested for 31 December 2004.
- **Capital Investment Appraisal Audits (WIC 19).** As last year, we anticipate this work being carried out in November/December 2004. The Investment Team will contact Scottish Water in the near future to finalise a programme.
- **Capital Investment Return,** Excel and Word based documents – due one month after each quarter end.

COSTS AND PERFORMANCE:

- **WIC 25** Monthly Submission of Resource Accounting and Budgeting (RAB Excel Tables & Word document) – due on a monthly basis with dates being agreed separately with Scottish Water.
- **WIC 30** Accounting Separation – As you are aware, for the 2005 Strategic Review we will require properly separated cost allocations between core and non core costs and between wholesale and retail costs. We are working on tables, definitions and guidance notes for this as a separate exercise from the Annual Return.

All of the above requests are essential to effective and transparent regulation and I wait for confirmation from you that these requests will be met in full on the suggested timescales.

I hope you find the above information both informative and useful, and I am looking forward to receiving your submissions in due course.

Yours sincerely

ALAN D A SUTHERLAND
Commissioner

cc XXXX, Scottish Executive

23 April 2004

To Chief Executive of Scottish Water

WIC 43: Annual Return 2003-04 Submission

This letter is my formal request for Annual Return information. In WIC 42 I set out a timetable for information requirements and as indicated in that letter, I am issuing today the Guidance notes and Table templates for the 2003-04 WIC Annual Return. The procedure for the submission of the Annual Return will be as outlined in WIC 42. I particularly draw your attention to the query process timetable that was discussed in WIC 42 as I hope that this will ensure a smooth query process takes place this year, building upon the progress made last year.

For the first time the Definitions include text on Guidance for Reporters. The introduction of the Reporters Black and Veatch should help to ensure that Scottish Water is employing sound methods in recording, storing, retrieving and reporting the appropriate information to WICS in a form that meets our requirements. Text has therefore been added to each section's Definitions to indicate the focus of the work being carried out by Reporters.

As the information provided materially affects our ability to benchmark accurately, it is therefore in your interests to submit as complete and accurate a Return as possible. All Commentary documents especially should be as complete, accurate, relevant and authoritative as possible and particular attention should be made to ensure that there are no inconsistencies either between Commentary and Tables or internally with the Commentary document itself.

Where modifications have been made to either Tables or Definitions, the edition number relevant to that document has been updated and Edition summary sheets have been inserted into the definitions.

As last year, I am happy to supply two copies of the Excel spreadsheet Annual Return tables, one password protected and one not, provided that only the password-protected tables are submitted back to WICS. Any tables submitted not in the prescribed protected format will be returned to Scottish Water and resubmissions requested.

The Annual Return tables must be signed off by the relevant Director and any unsigned tables will be returned. I require 2 paper copies and an electronic version of each submission of the Return tables to be delivered to the Monitoring team at WICS. I can confirm that the submission date following sign off by the Regulatory Management Group at Scottish Water is 18 June 2004.

If your staff have any further questions or queries relating to the Annual Return, they should not hesitate to contact XXXX or XXXX.

Yours sincerely

ALAN D A SUTHERLAND
Commissioner

12 May 2004

To Chief Executive of Scottish Water

WIC 44: Finalisation of the WIC 18 Base-line for Quality and Standards II

With regard to the work associated with the Q & S II capital investment plan and the finalisation of the WIC 18 list, it would appear helpful at this point to be clear about the sequence of events for finalising this process.

As agreed at the WIC 18 stakeholder meetings, the WIC 18 programme will be finalised by the end of May 2004. At this time, Scottish Water will issue a final version of the programme for agreement by the regulators. Following this agreement, any subsequent changes to the programme will require to go through the agreed substitution process.

This final version of the programme will include:

- Substitution of the "red" quality projects (£47M) as agreed with SEPA and DWQR and validated by the Reporter.
- Identification of the WIC 16 "high priority" projects (£50M).
- The agreed allocation of the "north slippage" expenditure (£11.5M).
- Definition of the projects that comprise the Capital Maintenance element of the programme.
- A resolution of the "additional outputs" (£103M) element of the capital programme. I have met recently with your staff and agreed the components of a solution acceptable to both parties. This now requires agreement from the WIC 18 stakeholder group. Failing this, the resolution will be in accordance with point 2 of the ten principles as outlined in the letter of 31 July 2004 from Ross Finnie MSP.

I would ask for your assistance with ensuring that this important work is given a high priority over the weeks ahead.

Yours sincerely

ALAN D A SUTHERLAND
Commissioner

cc *XXXX, Scottish Executive*
XXXX, SEPA
XXXX, DWQ

27 May 2004

To Chief Executive of Scottish Water

WIC 45: Draft accounting separation tables

My office has recently held meetings with your staff to discuss the issue of the accounting separation within Scottish Water of the core/non-core and retail/wholesale elements of the business.

As explained at those meetings, we have asked Strategic Management Consultants and Deloitte to develop a set of draft regulatory tables to collect information on Scottish Water's operating costs. We are now ready to share the first draft of those tables with you and an electronic copy is being provided, along with the accompanying definitions. The deadline for completing and returning the tables was recently communicated to you as part of the list of key dates in the regulatory calendar. The following dates specifically relate to the draft regulatory tables:

27 May 2004	Deadline for issue of draft tables to Scottish Water
15 June 2004	Q&A on draft tables
18 August 2004	Scottish Water submits completed draft tables to WICS for the year 2003-04
9 September 2004	WICS writes to Scottish Water with views on the draft regulatory tables
16 September 2004	Workshop on completion of the regulatory accounting tables
29 October 2004	Resubmission of regulatory accounting tables as part of the business plan
16 November 2004	WICS issues revised regulatory accounting tables
22 December 2004	Scottish Water resubmits regulatory accounting tables for the year 2003-04
20 January 2005	WICS writes to Scottish Water regarding the regulatory accounting tables
27 January 2005	Workshop on regulatory accounts

Although these dates may be subject to minor changes, my office is committed to the development of robust regulatory accounting tables and guidelines for the Scottish water industry. I believe it is important that Scottish Water engages in the development process and I would encourage you to provide us with feedback. With regard to the draft tables that accompany this letter, the date of 15 June for a Q&A is for indicative purposes only and we would be happy to agree an alternative date that is suitable for all parties. I would also welcome formal written feedback on the draft tables, which you can provide prior to 18 August if you wish.

In the meantime, we will shortly be commencing a tender process to further develop regulatory tables and definitions and Regulatory Accounting Guidelines for the Scottish water industry. My office will arrange regular updates and discussions with your staff.

I look forward to hearing from you.

Yours sincerely

ALAN D A SUTHERLAND
Commissioner

cc XXXX, Water Service Unit

Appendix 3

Commissioning letter from Ross Finnie MSP Minister for Environment & Rural Development



SCOTTISH EXECUTIVE

Minister for Environment & Rural Development
Ross Finnie MSP

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26 May 2004

Dear Alan,

STRATEGIC REVIEW OF WATER CHARGES: 2006-10

27 MAY 2004

Introduction

1. I am writing to inform you of:
 - 1.1. the broad arrangements that the Executive wishes to be followed in the next Strategic Review of Water Charges (SRC); and
 - 1.2. the Executive's initial views on the public policy considerations that it requires to be taken into account in the SRC.

SRC arrangements: background

2. The Executive announced on 23 April that the forthcoming Water Services (Scotland) Bill will include provisions to improve the transparency, accountability and robustness of the economic regulation to which Scottish Water is subject. As these provisions will be directly relevant to the SRC, I summarise them below.
3. The main features of the provisions on the economic regulation of Scottish Water to be included in the Bill are:
 - 3.1. The repeal of the provisions at sections 29 to 34 of the Water Industry (Scotland) Act, under which Scottish Water's charges for providing core services to its customers are set, and their replacement by new provisions on setting such charges, including charges for trade effluent services.

- 3.2. A Water Industry Commission for Scotland to take over all of the functions of the Commissioner (whose office will be dissolved). The Commission will comprise a non-executive Chairman, a Chief Executive and between 2 and 4 other non-executive members.
- 3.3. A duty on Ministers to specify the period of time to be covered by each SRC.
- 3.4. A duty on Ministers to set the standards and objectives to be achieved by Scottish Water in the provision of core services during the period to be covered by a SRC.
- 3.5. A duty on Ministers to set out the principles to be applied by the Commission in setting charge limits for different customer groups at the conclusion of a SRC and to be applied by Scottish Water and the Commission respectively in making and approving charges schemes consistent with the charge limits.
- 3.6. A duty on the Commission to determine the limits on what Scottish Water can charge different customer groups for the provision to them of core services, including trade effluent services. These limits will be set for each of the years covered by a review period and must be consistent with whatever principles on charging Ministers set. (The Commission will be under a duty to publish and consult on its proposals for the limits in advance of determining what they are to be.)
- 3.7. A duty on the Commission to undertake interim reviews of charge limits within a SRC period, where there has been a material change in any of the factors taken into account by the Commission in a SRC, and for the Commission to consult publicly on the procedure that it will adopt, and the criteria that it will apply, in establishing the circumstances in which it will conduct an interim review.
- 3.8. A duty on the Commission, in determining charge limits, to ensure that the revenue from the limits, when taken with all borrowing authorised by the Executive, is sufficient to allow Scottish Water to perform its core functions and meet stated Ministerial objectives at the lowest reasonable overall cost.
- 3.9. A duty on the Commission to consider proposals for annual charges schemes (based on Ministers' statement on the principles of charging and the Commission's charge limits) from Scottish Water. If the Commission does not approve the scheme as proposed, it is to put in place one of its own devising and to publish its reasons for having taken this course.
4. Also, the Executive has agreed with the UK Government that these provisions will be supplemented by powers taken at Westminster under the Scotland Act 1998 that will enable Scottish Water to appeal to the Competition Commission against charge determinations made by the Water Industry Commission.
5. The statutory framework created by these provisions will establish a transparent and robust process for setting charges in which the Executive, the Water Industry Commission, Scottish Water and the Competition Commission each have clear and well-defined functions to perform. This will serve the customer interest by identifying the lowest cost at which Scottish Water can deliver the improvements in quality and standards to which we are all committed.



6. Subject to the Parliament approving the Water Services Bill, and to it securing Royal Assent, the Bill's provisions on charges and on the creation of the Water Industry Commission will be commenced by June of next year. The powers enabling the Competition Commission to consider appeals from Scottish Water will be commenced in the autumn of that year. The closing stages of the SRC will be conducted under these new statutory arrangements. The intention is that the Water Industry Commission will be in place by August 2005 at the latest, enabling it to make the final decisions on charge limits in light of representations from the Executive, Scottish Water and others, between September and November 2005. Scottish Water will be able to appeal the Commission's decisions to the Competition Commission.
7. If for any reason it does not prove possible to put the new arrangements in place, Ministers will take decisions on charge limits in light of advice from the Commissioner at the conclusion of the SRC. Such advice should describe any changes made by the Commissioner to his proposed charge limits as a consequence of representations made by Ministers, Scottish Water and any others in respect of the proposals, the reasons for making those changes and the reasons for resisting any changes sought in the representations. However, even in these circumstances it will be in the customer interest for the clearer and more transparent process envisaged by the Bill to have been followed as far as is possible. Therefore the arrangements for the SRC that I outline below reflect that approach and for the most part will apply whether or not the relevant provisions in the Bill are in force. (Paragraph 9 comments further on this point.)

SRC: process

8. Responsibility for taking forward the SRC and for bringing it to a timely conclusion rests with the Commissioner, until such time as the Water Industry Commission is established to replace his office. Subject to consultation, it will be for the Commissioner to determine the methodology to be used in the review and to manage the detailed process by which he gathers and tests information from Scottish Water and produces proposed and then final charge limits. The Executive expects the Commissioner and Scottish Water to take forward this work having regard to the following points:
 - 8.1. **The evidence on Scottish Water's investment priorities that is emerging from the Quality and Standards III process:** The Executive, Scottish Water, the Commissioner, SEPA, the Drinking Water Quality Regulator, CoSLA and other stakeholders are working, through the Quality and Standards III process (Q&SIII), to identify Scottish Water's investment priorities for the period 2006-14. Q&SIII will be the subject of public consultation later this year and the outcome of the consultation will be a major factor for the Executive in setting the objectives that Scottish Water is to be required to achieve in its core business during the Q&S period as a whole. As work on Q&S progresses, it will provide increasingly robust information about the investment programme that Scottish Water should be delivering between 2006 and 2014. Scottish Water and the Commissioner should use this information to inform their work on the SRC.
 - 8.2. **The SRC period to be 2006 to 2010:** The Commissioner is to proceed on the basis that the SRC will determine charge limits for the first four years of the eight-year period covered by Q&SIII. This determination is to be based on an assessment of the cost of delivering the full Q&S programme over eight years and, in addition to the charge limits for 2006-10, should provide an indication of likely charge limits for the following four years. The indicative limits are required so as to illustrate the estimated cost of the full Q&S programme. They will not be binding. A further SRC for the period 2010-14 will

determine charge limits for that period and will do so in light of the Q&S investment programme for that period having been reviewed in 2008-09.

- 8.3. **Borrowing and the SRC:** The SRC charge limits should reflect decisions on borrowing levels for 2006-08, and assumptions on borrowing levels for 2008-10, that the Executive will notify to Scottish Water and the Commission in January 2005. At that date, the Executive will also state what assumptions should be made about borrowing for the purposes of the indicative charge limits required for 2010-14. The borrowing assumptions that the Executive will notify for the period beyond 31 March 2008 will be provided for illustrative purposes and should not be taken as implying a commitment by the Executive. The Executive will announce firm borrowing levels for 2008-10 in late 2006.
- 8.4. **Initial views from the Executive on the public policy considerations that it requires to be taken into account in the SRC:** these are set out in the next section of this letter.
- 8.5. **A first draft business plan from Scottish Water:** This should be submitted to the Executive and the Commissioner by **31 October 2004**. In light of the evidence emerging from Q&SIII, the first draft should provide an assessment by Scottish Water of the objectives for its core business for the period 2006-10, and how these should be delivered, in light of the Executive's initial views on public policy considerations. It should set out separate proposals for the management and the funding of the retail entity as required at paragraph 21 below. This version of the plan will have two purposes. The material on the core business will inform the early stages of the Commissioner's work on the SRC. (For that reason its format and the information that it contains must be consistent with whatever the Commissioner specifies to Scottish Water as being required for this work. He will set out his requirements to Scottish Water in writing not later than **25 June 2004**.) And, along with the outcome of the consultation on Q&SIII, it will inform the Executive's decisions on the objectives that Scottish Water is to deliver during the SRC period.
- 8.6. **Detail of the public policy considerations that the Executive requires to be taken into account in the SRC:** In light of conclusions arising from, and the outcome of the consultation on, Q&SIII and of Scottish Water's first draft business plan, the Executive will set out its detailed objectives for Scottish Water during the SRC period. It will also set out the public expenditure assumptions that the Commissioner and Scottish Water should take into account in taking forward the SRC and – in the case of Scottish Water – in developing a second draft business plan. The Executive will provide this information by **end-January 2005**. In light of this information Scottish Water should prepare by **20 April 2005** a second draft business plan, whose main purpose will be to inform the Commissioner's detailed analysis of how much it should cost Scottish Water to deliver the Executive's objectives.
- 8.7. **The principles that the Executive requires the Commissioner to apply in setting charge limits:** In light of responses to the consultation on the principles of charging that the Executive will undertake this year, the Executive will set out the principles that the Commissioner must apply in setting charge limits for different customer groups. This information, which the Executive will provide by **end-January 2005**, will provide the Commissioner with the basis upon which he should share out Scottish Water revenue requirements among different customer groups.



- 8.8. **The proposed charge limits for the period 2006-10:** The Commissioner must publish proposed charge limits by the **end-June 2005**, with a view to the Executive, Scottish Water and others commenting on them by **end-August**. In working between September and November to determine final charge limits, the Commission might have to re-work the Commissioner's proposals if, in light of the implications of the proposals for customer charges, the Executive decides that there should be any adjustment to its objectives for Scottish Water during the review period.
- 8.9. **The final charge limits:** These should take account of any change in the Executive's objectives for Scottish Water and of any comments on the analysis underpinning them from Scottish Water or others. The Commission must publish them by **end-November 2005**. They will apply to the scheme of charges that is to come into effect on **1 April 2006**. In the event that Scottish Water decides to appeal to the Competition Commission against the limits, the limits will continue in effect until the Competition Commission comes to a decision on the appeal.
- 8.10. **The scheme of charges for 2006-07:** Scottish Water will propose to the Commission a scheme of charges for 2006-07 and the Commission will either approve it or replace it with one of its own devising in time for 1 April 2006.
9. If the provisions on charge setting by the Water Industry Commission proposed for the Water Services (Scotland) Bill, and on appeal powers for the Competition Commission, are not commenced in time for them to apply to the final charge limits, the intention is that the process as described at sub-paragraphs 8.1 to 8.8 above will apply. Thereafter, instead of determining final charge limits, the Commissioner would submit his proposed charge limits to Ministers in the form of advice under the provisions at section 33 of the Water Industry (Scotland) Act 2002. Once Ministers had come to a decision on the advice and this had been published, the provisions for making a scheme of charges under sections 31, 32 and 34 of the 2002 Act would have effect.
10. The Commissioner and Scottish Water should be mindful throughout the SRC of the possibility of the Competition Commission considering an appeal by Scottish Water against charge limits set by the Commission. Accordingly, both parties should maintain full and accessible records of their respective actions during the course of the SRC. These should include a record of all exchanges between the two parties and of all analysis undertaken by them in support of the SRC. The Executive expects Scottish Water to provide the Commissioner with whatever information he requires to conduct the SRC. If Scottish Water is unable to comply with any such requirement, it should advise the Commissioner in writing of the reasons for this.

Initial views from the Executive on the public policy considerations that it requires to be taken into account in the SRC

11. I set out below the Executive's initial view on the public policy considerations that Scottish Water and the Commissioner must take into account in taking forward work on the SRC. These relate mainly to the Executive's objectives for Scottish Water and they should be addressed in Scottish Water's first draft business plan. The Executive will provide a fuller description of its objectives for Scottish Water at the conclusion of Q&SIII and in light of Scottish Water's first draft business plan.

RF

The Executive's objectives for Scottish Water

12. The Executive's broad objectives for Scottish Water for 2006-14 are that it should:
 - 12.1. Ensure, as a minimum, that the levels of the core services provided to customers through Scottish Water's assets do not deteriorate during the period.
 - 12.2. Plan to comply with the full range of statutory obligations that it expects its regulators to place on it during the period.
13. Q&SIII will consider in detail the manner in which these objectives should be secured in the period 2006-14 as a whole. The Commissioner and Scottish Water should take forward work on the SRC on the basis that the Executive will not require Scottish Water to deliver any objectives in the 2006-10 period that have not been considered in Q&S discussions. Meantime, in its first draft business plan Scottish Water should set out a programme of work for the period 2006-10 that it judges to be a practical and achievable means of addressing the two broad objectives described above. In doing so it should identify those areas where it considers that its regulators have discretion in placing or enforcing statutory obligations on Scottish Water and what it considers to be the appropriate standards to be set in such cases. It should identify too the arrangements that it will need to make to enable it to provide water and sewerage services to licensed providers of these services as described at paragraphs 16 to 21 below. On these bases, it should set out the levels of borrowing from the Executive that it considers would be appropriate to support the programme; and the impact on the level of current charges of implementing such a programme at the level of borrowing envisaged by Scottish Water.
14. In addition, the first draft business plan should set out any other objectives that Scottish Water judges it appropriate for it to be pursuing during the 2006-10 period. In doing so, it should set out the levels of borrowing from the Executive that it considers would be appropriate to support the achievement of such additional objectives, and the impact on future charge levels of meeting such objectives, at the level of borrowing that it envisages. (For both illustrations the impact on charge level should be expressed in terms of the current tariff structure and should not make any assumptions about changes in the structure that might be required once the Executive has set out its principles on charging.) In the second draft business plan Scottish Water should set out the programme of work necessary for it to deliver the outputs specified by the Executive in January 2005 (paragraph 8.6 refers).

Scottish Water's core functions

15. In preparing its first draft business plan, Scottish Water should take account of the changes to its core business that will be a consequence of the Water Services (Scotland) Bill.
16. Scottish Water's core functions are defined at subsection 70(2) of the Water Industry (Scotland) Act 2002. As matters stand, these functions include the provision of retail water and sewerage services to non-household customers. In light of provisions to be included in the Water Services (Scotland) Bill, these services will cease to be core functions with effect from 1 April 2006.

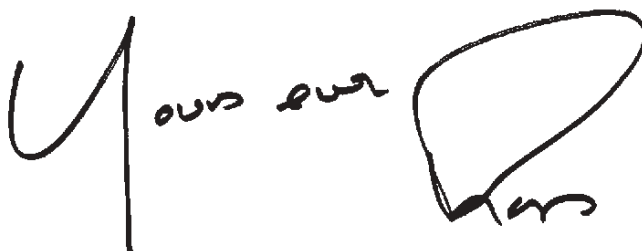


17. The Bill will prohibit both common carriage on the infrastructure vested in Scottish Water and the provision by anyone other than Scottish Water of retail water and sewerage services to households; and it will enable third parties under licence to provide retail services to non-household premises. It will confer powers on Ministers to direct Scottish Water to establish a separate legal entity for the purposes of acquiring a licence to provide all retail water and sewerage services, including trade effluent services, to non-household premises and subsequently of performing the functions of a licensed provider to non-household premises.
18. As foreshadowed in its consultation paper on the draft Bill, the Executive intends to exercise these powers of direction so as to require Scottish Water to establish a retail entity, licensed under the provisions of the Bill, which will come into existence on 1 April 2006. As a consequence of this, Scottish Water will cease to provide water and sewerage services, including trade effluent services, to non-household premises from that date. Instead it will sell such services to the retail entity, which in turn will sell the services to non-household customers. Limits on the amounts that Scottish Water can charge for selling such services to licensed retailers, including the retail entity, will be covered in the SRC and will form part of the charge limits that the Commission will set for Scottish Water.
19. In the first instance the retail entity will provide all such services to all non-household customers served by Scottish Water's infrastructure. During that time, the retail entity's licence will regulate the relationships between the entity and Scottish Water and between the entity and its customers. The licence will extend to the amounts that the entity can charge its customers. These charges will not form part of the charges scheme in respect of core services.
20. The intention is that this state of affairs should continue for two years (i.e. until 1 April 2008), so that the Commission can develop plans for licensing third parties, while avoiding disruption in the retail market, which could undermine the Executive's wider policy objectives for Scottish Water. During this interim period, the Commission will put in place preparations to license other providers to compete with the retail entity in providing retail services to non-household customers. When these arrangements become operative on 1 April 2008, the charges levied by Scottish Water to the retail entity and all other providers will continue to be regulated within the SRC and by the charges scheme. However, subject to the Commission judging that the retail market is being contested, the charges levied by providers, including the retail entity, will be unregulated and will be a matter of contract between the provider and its customers. (In the event that the Commission concludes that the market is not contested, it will continue to regulate the charge to customers beyond April 2008.)
21. Scottish Water's first draft business plan should take account of these planned changes and should distinguish between those of its functions that will continue to be core and those that will cease to be so after 1 April 2006. The plan should set out Scottish Water's proposals for the objectives that the re-defined core business should be delivering in the period 2006-10. It should also identify those functions that Scottish Water considers should become part of the retail entity and should contain separate proposals for their management and funding after 1 April 2006. It should do so on the basis that the Executive will wish any borrowing by the entity, including working capital, to be kept to a minimum, and to be clearly justified in terms of the effective performance by Scottish Water of its core functions.



Conclusion

22. I will write to you again in January 2005 with detailed information on the objectives and standards that the Executive requires SW to achieve during the review period, on the Executive's assumptions about Scottish Water's borrowing limits in the period, and about the principles that the Executive will require the Commission to apply in setting charge limits at the conclusion of the review.
23. I am sending copies of this letter to the Chairman of the Competition Commission, the Chairman of SEPA, the Drinking Water Quality Regulator for Scotland and the Convener of the Water Customer Consultation Panels.

A handwritten signature in black ink, appearing to read 'Yours ever' followed by a large, stylized loop and a small flourish.

ROSS FINNIE

Appendix 4

Annual Return Confidence Grades

The confidence grading system was established to provide a reasoned basis to qualify information in terms of its reliability and accuracy. It is essential that proper care and a high level of application is given to the assignment of confidence grades to information. A quality-assured approach should be employed in the methodology used to assign confidence grades, particularly if sampling techniques are in place.

Reliability and accuracy bands

Reliability and accuracy bands are shown in the tables below,

Reliability Band	Description
A	Sound textual records, procedures, investigations or analysis properly documented and recognised as the best method of assessment.
B	As Band 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 Band A or B data is available.
D	Unconfirmed verbal reports, cursory inspections or analysis.
M	Missing information.
NA	Not applicable information.

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 (see table below).	

The X grade is generally only likely to be appropriate where a zero has been entered.

Confidence grade definition

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

A2 Information based on sound records etc. (A, highly reliable) and estimated to be within +/- 5% (accuracy band 2);

C4 Information based on extrapolation from a limited sample (C, unreliable) and estimated to be within +/- 25% (accuracy band 4); and

AX Information based on sound records etc. (A, highly reliable) but value too small to calculate meaningful accuracy percentage.

Certain reliability and accuracy band combinations are considered to be incompatible and these are blocked out in the table below.

Compatible confidence grades				
Accuracy Band	Reliability Band			
	A	B	C	D
1	A1			
2	A2	B2	C2	
3	A3	B3	C3	D3
4	A4	B4	C4	D4
5			C5	D5
6				D6
X	AX	BX	CX	DX

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July 2004

Our work in regulating the Scottish water industry:
Background to and framework for the
Strategic Review of Charges 2006-10

volume **2**

**WATER INDUSTRY
COMMISSIONER
FOR SCOTLAND**

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Foreword

My role is to promote the interests of customers. In my first full Strategic Review of Charges in 2001 I outlined a number of challenges that faced the water industry in Scotland. Meeting these challenges required difficult decisions.

The creation of Scottish Water has brought benefits to customers throughout Scotland. Customers in all parts of Scotland are now paying less than they would have paid if Scottish Water had not been established. Years of worsening efficiency in the Scottish water industry have been halted, and the rate at which efficiencies are being made is beginning to improve significantly.

In 2001, I said that if the industry meets the challenges it faced, then by 2006 customers could expect that their bills would not have to increase in real terms in order for them to enjoy an environmentally and financially sustainable service. Scottish Water has made a good start in meeting the challenges that I set in my Strategic Review. I am therefore optimistic about the prospects for tariffs, although it is still too early to say what individual customers may have to pay. This will become clearer after the Minister provides me with guidance on investment priorities and the principles of charging. This guidance will reflect the response to the Scottish Executive's two consultations: '*Paying for water services 2006-10*' and '*Investing in water services 2006-10*'.

Notwithstanding its progress to date, Scottish Water has more to do if it is to meet the service and cost levels of the industry in England and Wales. I therefore intend to set further operating and capital efficiency targets for Scottish Water. These will be challenging but achievable and could further limit the prices faced by customers. Customers will expect to see similar progress in the level of customer service.

I will shortly be publishing a detailed description of the methodology that I propose to adopt for the *Strategic Review of Charges 2006-10*. This methodology will explain the factors that I will take into account in determining efficiency targets, investment levels and customer service standards for the next regulatory period. I will be particularly interested in whether

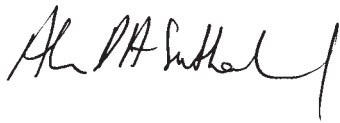
stakeholders believe that we should set targets for improvements in customer service. I would also welcome comments from stakeholders both about those elements of the methodology where I propose to use current regulatory best practice and those areas where there are a number of potential approaches.

This is the second publication about our work in regulating the Scottish water industry. It covers the background to and the framework for the *Strategic Review of Charges 2006-10*. It is important to understand the background to the last Review, in order to clarify both the changes to the process that we are introducing and the initiatives to strengthen the regulatory framework that are proposed by Scottish Ministers.

I welcome the Minister's proposals that the current regulatory regime should be strengthened. These proposals are consistent with normal regulatory practice in other utilities and in the water industry south of the border. In particular, I believe that the introduction of a Commission will help to depersonalise regulation. I also believe that giving the Commission the power to decide, rather than to advise, on prices should improve the transparency of the role of regulation. The proposed rights of appeal that will be available for Scottish Water should also improve transparency.

A strengthened regulatory regime brings increased responsibility. Scottish Ministers have asked me to prepare this second full Strategic Review of Charges on the basis that the final outcome could be the first determination of prices for the water industry in Scotland by the new Water Industry Commission for Scotland. In order to ensure that the outcome is consistent with regulatory best practice, I will prepare this Review according to the Better Regulation Task Force Principles of accountability, transparency, proportionality, consistency and targeting. As such I intend to publish the key information submissions that I receive from Scottish Water, as well as the tools that I will use to complete my analysis, including my financial and tariff basket models.

I am keen to facilitate debate about the challenges that still face the water industry in Scotland. My office has planned a number of stakeholder information days over the next 18 months. I encourage stakeholders to come and to express their views. These views will help to inform the Strategic Review of Charges.

A handwritten signature in black ink, appearing to read 'Alan D A Sutherland'.

Alan D A Sutherland

Water Industry Commissioner for Scotland

August 2004

Executive summary

Introduction

The principal statutory duty of the Water Industry Commissioner for Scotland (WICS) is to promote the interests of customers. We promote the interests of customers primarily by encouraging Scottish Water to become more efficient. Cost cutting is not efficiency. Efficiency is about reducing costs and maintaining or improving the levels of service to customers. Scottish Water can therefore become more efficient by reducing its cost to deliver an acceptable level of service or by improving its service to customers without increasing its costs.

The last Strategic Review of Charges covered the period 2002-06. In November 2005 we shall publish our second full Strategic Review of the Scottish water industry. The Review will outline the price and revenue implications for customers of Scottish Water for the period 2006-10.

This is the second of a series of five information and consultation documents which we are publishing between July and September this year, and which will set out our proposed methodology and approach for the Review. All of the documents that we have published, and will publish over the coming months concerning the Review, reflect our intention to provide an open and transparent process. This is in accordance with our commitment to the Better Regulation Task Force principles of proportionality, accountability, consistency, transparency, and targeting¹.

In this document we outline the background to our work in assessing the appropriate level of prices. It divides into two parts;

Section 1 sets out and explains the background of the Review and the current regulatory framework; and

Section 2 discusses the changes to the regulatory framework that are anticipated in the near future and the impacts that these changes might have both for regulation and for customers.

We are also planning to hold a series of workshops and stakeholder information days where interested parties may express their views in person. Details of these events were contained in *Our work in regulating the Scottish water industry: Setting out a clear framework for the Strategic Review of Charges*, which was published in July 2004 and is available on our website.

Economic regulation

Prior to setting out the framework for the next Strategic Review of Charges, it is important to explain the role of regulation within the water industry in Scotland.

The purpose of regulation is to seek to ensure that monopoly businesses act in the customer interest. Customers should not have to pay higher prices or accept lower levels of service because they are unable to choose their supplier.

Network utility industries tend to be monopolies because the cost of replicating the network is excessive. Economists describe them as involving a significant 'natural monopoly' element. A 'natural monopoly' refers to the situation where there is only one firm supplying a product in the market, but this is not the result of the behaviour of the firm. Instead, it arises because it is the sensible way to organise the industry and it is in the best interests of customers.

However, the behaviour even of natural monopolies may work against the customer interest if unchecked. There are two ways in which this might happen.

First, if the service is essential and the customer has no choice about where to purchase it, the monopoly has an incentive to charge an excessive price and to make excessive profits.

Second, in the absence of competition the monopoly faces no incentive to innovate and improve its efficiency over time.

Economic regulators² seek to establish a tight budgetary constraint on the regulated body. In other words, clear

¹ The Better Regulation Task Force was established in September 1997. It is an independent body that advises Government on action to ensure that regulation and its enforcement accord with the five Principles of Good Regulation. For further information see <http://www.brtf.gov.uk>.

² Regulation of a public sector corporation is not unique. Postcom fulfils a similar role to WICS in its regulation of the Royal Mail. The Civil Aviation Authority (CAA) also has economic regulation responsibilities for the locally owned Manchester Airport.

statements are made about the outcomes for customers that the body must deliver and about the amount of money that can be spent. This can be achieved by fixing the maximum return available (unless targets are beaten) or by limiting the total cash funds that may be consumed.

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

In a competitive market, companies face similar tight budgetary constraints in that they have to match their costs to the revenue they can win from customers. Regulation consequently provides a proxy for the discipline of competition.

The creation of Scottish Water

The *Strategic Review of Charges 2006-10*, unlike its predecessor, will focus solely on the activities of Scottish Water. In the last Strategic Review of Charges (2002-06), the creation of Scottish Water from the three previous water authorities was still subject to ministerial approval.

The three separate authorities remained in existence until the formation of Scottish Water under the Water Industry (Scotland) Act 2002 on 1 April 2002. Under sections 21-23 of the Act the functions, property, liabilities, and staff of the water and sewerage authorities were transferred to Scottish Water.

Scottish Water remains in the public sector, and is owned by and accountable to the Scottish Executive and Ministers. However, the structure and management of Scottish Water draws on the private company model. The combination of public sector ownership and private sector organisational structure is intended to ensure that the business is run in the public interest as efficiently as possible.

Scottish Water has completed two years in its new form and has made good progress in reducing its operating costs. To date, progress in the delivery of the capital programme is less encouraging. Customer benefits will only fully be realised when progress in improving the efficiency and delivery of the capital programme accelerates.

If a public sector organisation can match the level of efficiency of investment and service delivery that is achieved by the private sector, customers of that public sector supplier could expect sustainably lower prices than could ever be achieved by the private sector. This is because the public sector is consistently able to access a lower cost of capital. There can be no doubt that customers of Scottish Water benefit significantly from access to attractive terms for public government loans that are much cheaper than the private sector's cost of capital³.

It is important to note that this cost benefit will only truly be realised by customers if they are not exposed to operational risks and if the service is delivered efficiently. However, as regulator we must take into account that customers of Scottish Water are more immediately exposed than customers in England and Wales to the financial risks of the business. This is because there are no private equity shareholders.

The Strategic Review of Charges 2002-06

Our analysis showed that a sustainable water industry in the public sector would require action to be taken in the following areas:

- increased revenue to the minimum level consistent with meeting ongoing maintenance and environmental/public health compliance;
- challenging but achievable efficiency targets;
- further improvement in customer service;
- harmonised and broadly cost-reflective tariffs;

³ We estimate that customers of Scottish Water probably benefit by around £44 million per year, because of a 2% saving on the annual cost of capital (about 4.5% on the average bill). We have calculated this on the basis of current total borrowing of approximately £2.2 billion.

- improved regulation and financial control;
- improved performance monitoring; and
- better governance.

The level of revenue

We showed that the Scottish industry had spent considerably more, in the past several years, than it received in customer charges. We explained that this was a problem because there was a likelihood that sustained investment at current levels will be required for the foreseeable future.

Continuing to increase net borrowing significantly to eliminate the gap between revenue and expenditure will only make matters worse. Borrowing may delay a price increase, but it will increase future bills by the interest payable on any additional borrowing. In providing our advice on the level of revenue, we took into account a clear customer concern that the industry had “to get its house in order” and that, as a commodity business, “it should learn to live sustainably without real increases in price”. We believe that the revenue increases that were implemented will ensure that we have a more sustainable industry in the future and that customers will see the benefits in steady prices. If Scottish Water continues to make progress in reducing its costs, it is possible that prices will not need to increase in real terms.

Challenging but achievable efficiency targets

The charges paid by customers in the public sector model are a direct function of the efficiency of the water industry in Scotland. Unlike in the private sector, 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.

We set three separate efficiency targets to cover operating costs, capital expenditure, and the potential

savings resulting from the merger of the three authorities. These efficiency targets were challenging but achievable. After two years, we can see real progress in reducing operating costs. Scottish Water is also confident that the creation of Scottish Water Solutions will improve both the timeliness and the efficiency of the delivery of capital investment.

The total annual value to customers if Scottish Water achieves the efficiency targets is in excess of £400 million a year by the end of the current regulatory period in 2005-06. Such an achievement would result in customers' bills being some 40% lower than would otherwise have been the case⁴. These efficiencies are important because a sustainable water industry needs to be affordable both now and in the future.

Harmonised and broadly cost-reflective tariffs

When the Minister for the Environment, Sport and Culture, Sam Galbraith, MSP announced his intention to merge the three water authorities, he highlighted the harmonisation of charges as an important benefit. There were clearly significant anomalies in the charges that resulted from the three-authority model. It is, for example, much cheaper to supply Dundee than North Fife, yet charges were much higher in Dundee. It was more expensive to serve south Ayrshire than the western Central Belt, yet charges would be the same. We considered that a harmonised charge across Scotland was equitable for all customers. To do otherwise would have been to sanction a postcode lottery in charges for water. It would also break with normal practice in the pricing of utility services – ie to harmonise prices across the whole of a company's area.

There has been some comment about our recommendation that charges for businesses should also be harmonised across Scotland. There were three reasons why we considered that this was important.

- The merger of the three authorities only made sense if cost savings, investment prioritisation and a single management structure were to be introduced. This would remove the justification for differential

⁴ This takes no account of any rebalancing between revenue and debt.

pricing for the three former areas. The choice therefore is between wholly cost-reflective charging (which will disadvantage the smallest and most rural) and fully harmonised charging.

- Businesses, like households, should not be asked to pay more solely because of their location.
- The distinction between some households and non-domestic customers was blurred, for example people who work from home, farms and crofts, owners or managers with accommodation in hotels or on school and business sites.

It still seems to us that it would have been difficult for Scottish Water to defend having different pricing regimes in different parts of Scotland.

Regulation and financial control

Over the past four and a half years we have dedicated significant resources to establishing a robust and objective regulatory reporting regime. We were fortunate that we could draw on the information contained in the Annual Return to write the *Strategic Review of Charges 2002-06*. This was the first time that such standardised information had been available. In the past two years we have made a considerable effort to improve further the overall quality of management information. This will be crucial to improving the financial and customer service performance of the industry.

Improved monitoring

Monitoring performance is central to regulation. This explains why we sought ministerial approval for the annual reports on the performance of the industry in Scotland and for a joint project with the quality regulators to agree how the outputs of the capital investment programme should be monitored. Increased information about performance is only valuable if, as a result, customers get a better level of service or the costs of the industry can be sustainably reduced.

Performance monitoring has developed significantly in last the two years. This monitoring takes two forms:

ongoing collection and analysis of information; and publication of annual reports on:

- Costs and Performance;
- Investment and Asset Management; and
- Customer Service.

These reports are objective analyses of the current performance of the industry in Scotland. We believe that our performance monitoring has already brought results. Scottish Water performed much better in its second year than initial drafts of its business plan suggested were possible. Our monitoring of the capital programme will also ensure that we can manage the transition from the *Quality and Standards II* to the *Quality and Standards III* period effectively. This will ensure that there will be no question of customers paying twice for the same promised improvement.

Better governance

We believed that better governance would be vital if the performance of the Scottish industry was to improve. It is encouraging that the Scottish Executive has adopted many of our recommendations from the last Review.

We made **five** principal recommendations. These recommendations and the current position are outlined below.

Recommendation:

There should be 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.

Current position:

The Scottish Executive is introducing a much clearer regulatory framework. Ministers will take clear decisions on the levels of investment and investment priorities. They will also provide guidance on how customers should pay for water and where they want to see cross-subsidies.

Scottish Water will have to draft a business plan that takes full account of the guidance from Ministers and outline their strategy objectives and views on prices for the next regulatory period. This business plan will have to be approved by the Board. The Board will have to present this plan to the economic regulator. Ministers will use a first draft of this plan to inform the guidance that will underpin the second draft.

Recommendation:

There should be 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.

Current position:

The Board of Scottish Water has eight non-executive members. These members bring extensive experience of different business sectors and sizes. In particular, they have significant expertise in utilities, asset management and finance. The Board can also draw on important expertise in large change programmes and human resource issues.

Recommendation:

The right balance should be struck between executive and non-executive directors. The Board is crucial in supervising the drive for efficiency.

Current position:

There are eight non-executive and five executive members of the Board.

Recommendation:

There should be transparent and appropriate incentives and penalties for executive board members and for senior management to ensure that the right calibre of professionals is attracted to the industry

Current position:

Senior management can earn bonuses. The remuneration committee of the Board sets these bonuses based on performance criteria established at the start of the year. In Scottish Water's Annual Report for last year, information was provided about how individual bonuses had been calculated.

There may still be room to improve the transparency of the incentive system. Best practice would suggest that the performance measures that will be used to determine bonuses will be published in advance and should be independently measurable and verifiable.

Recommendation:

There should be clear setting of the risk profile by the owner, followed by management of risks by the board to the criteria established by the owner.

Current position:

The strengthening of the governance and regulatory framework described above should ensure that this recommendation is met.

Inevitably there were some unexpected consequences of the actions that we recommended. One example would be the size of the percentage increases in bills for some non-domestic customers. While we recognise the concerns of these customers, it is not clear that we could have acted differently. We have to balance the interests of all customers and every customer who pays below the average cost of supply for the service that they receive is gaining at the expense of other customers. It is important to remember that even if the difference in tariffs had been reduced by half, water customers in the North would have been paying some 40-50% more for the water that they consumed.

The methodology for the 2006-10 Strategic Review of Charges will build on the solid foundation created by our work in 2001. We will use the improved information that is now available to broaden and deepen the analysis that we were able to complete for the last Review.

Resource accounting and the Strategic Review of Charges 2002-06

In reviewing the outcome of the *Strategic Review of Charges 2002-06*, it is important to explain the impact on customer bills of the introduction of resource accounting. In recent months, this topic has been discussed in detail by the Parliament's Finance Committee. We believe that the introduction of resource accounting did not have an impact on the prices paid by customers. Indeed, the introduction of resource accounting led to increased scrutiny of the value of assets owned and the depreciation policies used by the industry. This will have contributed to the progress of the past few years towards a more sustainable public sector water industry that can continue to meet the expectations of customers.

Resource Accounting and Budgeting (RAB) was fully introduced in April 2001. The Minister's commissioning letter for the 2002-06 Strategic Review of Charges set public expenditure limits on a resource accounting basis. It also made clear that we should regard these as maximum limits and that we should demonstrate, by means of risk analysis, that our advice on charges was consistent with these maximum limits.

The introduction of resource accounting did not directly impact on the way in which either the three authorities or Scottish Water managed their businesses or prepared their accounts. The three authorities had always prepared their accounts on an accruals basis. Resource accounting did change the financial control figure that the Scottish Executive used. Instead of monitoring the extent of new borrowing required (refinancing of existing debt at maturity does not count as public expenditure), the Scottish Executive began to measure consumption of resources and capital spending.

Clearly the way in which a company is monitored or analysed does not impact on either its accounts or its underlying business. Consequently, providing that the control total has been correctly adjusted to reflect the difference in how it is calculated, this should have

had no impact on the company or the prices that it needs to charge.

We were confident that the public expenditure control figures included in the letter were consistent with the approach that had been outlined by the Treasury and that they had been adjusted upwards to take account of the difference in the way in which the control figures were calculated.

Subsequent events have shown that sufficient public expenditure had been made available to cover any likely underperformance. The end-year flexibility allowed by the Scottish Executive has also allowed this expenditure to be used when required. We have to conclude, therefore, that the level of public expenditure that was made available by Ministers did not adversely impact on customer charges.

Performance monitoring

An important improvement in the regulatory framework for the water industry in Scotland in recent years has been the introduction of performance monitoring mechanisms. In England and Wales, Ofwat monitors and reports on the performance of the companies on a regular basis. Ofwat also sets targets for improvement that are, at least in part, driven by comparisons between the companies. Investors are very interested in these reports because they provide an objective source of information about the prospects of the companies. However, investor reaction to news from a company could alert Ofwat to an issue that may not yet have surfaced in a regulatory return.

In the public sector model, the absence of investor scrutiny makes our performance monitoring even more important. This explains both our recommendation to the Minister that we should publish annual performance reports, and the resources that we have invested in regulatory systems.

Shortly after the formation of this Office in November 1999, we signalled⁵ our intention to establish a mechanism to ensure that it would be possible to carry out rigorous comparisons between the water authorities

⁵ In the interim Strategic Review of Charges published by the Water Industry Commissioner for Scotland in early 2000.

⁶ See Chapter 2, 2.2: 'The collection and use of information'.

and between the industry in Scotland and in England and Wales. The subsequent 'information project'⁶ led to the creation of a Scottish version of the June return which is submitted to the Ofwat. This return provides a comprehensive set of financial, asset condition, capital investment and customer service indicators, which allow us to monitor and report on Scottish Water's performance.

We included two key recommendations to strengthen performance monitoring further in our advice to Ministers contained in the *Strategic Review of Charges 2002-06*⁷.

- 1) To endorse a joint project between the Water Industry Commissioner, Scottish Environment Protection Agency and the then proposed (now established) Drinking Water Quality Regulator to ensure that consistent output measures and metrics are collected and monitored.
- 2) To require the publication by this 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.

We have also built up a range of other performance monitoring activities, which help to improve our understanding of how well Scottish Water is performing:

- Monthly financial returns – these financial reports provide a detailed breakdown of Scottish Water's financial performance over the preceding month and progress against annual budgets;
- Quarterly returns on progress with the capital investment programme – provide an update on progress, at a project level, with delivery of the capital investment programme;
- Audits of Scottish Water's investment appraisal process; and
- Customer service performance audits – provide an

assessment of Scottish Water's performance across a range of customer service measures.

We are committed to ensuring that customers get better value for money and to this end we intend to work to strengthen our performance monitoring in the area of investment delivery. We will also need to adapt our processes to take account of future changes in legislation and the regulatory framework, such as the introduction of a competition framework and the development of regulatory accounts.

- The introduction of regulatory accounts

The Strategic Review of Charges 2006-10 will focus only on the core activities of Scottish Water in providing water and sewerage services to customers in Scotland. This change reflects the requirements of the Water Industry Act 2002, which restricts our role to promoting the interests of customers of the core business. We have begun to establish regulatory accounts, which will ensure that customers of the core business are only paying for services associated with core activities. This work will be completed during the current financial year.

- The introduction of a competition framework for the water industry in Scotland

The proposed changes to the competition framework contained in the Water Services (etc) Scotland Bill will also require a further level of accounting separation. This framework will require there to be a clear split between the retail (customer service and billing) costs and the wholesale (network management and operation of treatment plants) costs.

Both of these developments will improve the quality of information provision and hence the robustness of our analysis.

The 'ten principles'

Successful performance monitoring, and hence successful regulation, relies on the existence of an

⁷ Strategic Review of Charges 2002-2006, Executive Summary Page 3 section c) 'Key recommendations'.

agreed set of targets, which the regulated company (in this case Scottish Water) is required to achieve. Without agreement on these targets, performance monitoring and reporting becomes difficult and regulation will not be effective. This impacts directly on customers and stakeholders, as it is the existence of clear targets that drives regulated companies to tackle inefficiencies, deliver investment and achieve customer service improvements.

The Transport and Environment Committee of the Scottish Parliament reviewed the operating cost efficiency targets early in 2001. The Committee heard evidence from the three former water authorities and from the Scottish Executive, all of whom regarded the targets set out in the Review as achievable. It also heard from a range of other stakeholders, who did not express a view, and from the unions represented in the water industry. The unions regarded both the method of benchmarking and the resulting targets as unreasonable. After a long and detailed enquiry, the Committee concluded that the targets were challenging but fair.

The *Strategic Review of Charges 2002-06*, which was published in November 2001, advised on revenue caps both for the three authorities and for the proposed Scottish Water. The Review therefore established the regulatory targets for Scottish Water in the period to 2006.

Scottish Water is required to produce an annual business plan for approval by Ministers, which sets out the Board's strategic aims for the company and contains details of the key financial and delivery targets for the business.

In early 2003, Scottish Water submitted its proposed business plan for the three year period from 2003-04 to 2005-06. In March 2003, the Minister wrote to the Commissioner requesting that he consider representations from Scottish Water about its strategic business plan. In particular, the Minister noted that Scottish Water's proposed business plan suggested that Scottish Water's operating cost targets would be

different from those set out in the Strategic Review of Charges. This would have resulted in increased borrowing, with no extra benefits for customers and increases in future charges.

We received written representations from Scottish Water. We also met with Scottish Water to discuss these representations. In our response we pointed out that the operating cost projections contained in the Scottish Water strategic business plan would have led to price increases of around £40-£50 in 2006-07 for the average domestic customer. We explained that we considered this neither justifiable nor acceptable. We also concluded that Scottish Water's business plan did not provide a sufficient degree of financial sustainability to ensure the longer term success of the company. This is clearly not in customers' interests.

We had to find a settlement, which protected the customer interest, and would also be acceptable to Scottish Water. This led to the agreement of ten principles.

Principle 1

Operating costs for the whole year 2005-06 should be at a maximum of £265 million, which is £7 million above the £258 million WIC monitoring target set in the Strategic Review. The £7 million allows for factors that were unknown at the time of the Review and comprises £4 million additional allowance for the higher operating costs position inherited by Scottish Water and £3 million for the different legal status of lateral sewers in Scotland. This will provide a significant protection for customers against future unnecessary price increases. In reporting the operating cost performance of Scottish Water, the Commissioner will comment upon progress towards this figure.

Principle 2

Scottish Water's total debt at the end of the Strategic Review period may rise to a maximum of £2.47 billion. This level of debt includes an amount of up to

£112 million reflecting estimates of projected price inflation (above 1.5%) in the cost of capital goods. The range will increase to a maximum of £2.71 billion when the remaining £235.2 million (post-efficiency, £305.5 million pre-efficiency) of 'red'⁸ projects in the WIC 18 capital investment programme are approved by all stakeholders for inclusion in the programme

Principle 3

Scottish Water and the Commissioner will agree schemes of charges for both 2004-05 and 2005-06 in the near future, in such a way as to include price caps that are consistent with the revenue caps agreed in the Strategic Review. The purpose of this provision is to provide customers with a greater measure of certainty about their forthcoming bill. In addition, Scottish Water and the Commissioner will establish a mechanism to adjust future schemes of charges for over-collection and under-collection of revenue.

Principle 4

A Reporter of regulatory information will be appointed as soon as practicable. The Reporter will operate in a fashion similar to Reporters in England and Wales. The Reporter should be appointed by the Commissioner and would be chosen from amongst persons that have served at least three years as an Ofwat-named Reporter. The Executive will meet the cost of the Reporter.

Principle 5

Measurement of Scottish Water's comparative and improving efficiency will take place on the basis of the method established in the Strategic Review of Charges. Appropriate costs (subject to audit by the Auditor General) incurred in the pursuit of activities not undertaken in 2000-01 will be removed from regulatory operating expenditure to the extent that these costs are funded by revenues from these new activities.

Principle 6

Subject to the agreement of the Auditor General, the Commissioner and the Auditor General for Scotland will work closely to establish the nature of prospective regulatory adjustments, prior to the Auditor General commencing audit of Scottish Water's accounts. It is intended that the broad nature of forthcoming regulatory adjustments may be set out in a note in the accounts in addition to (but not substituting) information contained within the existing accounting requirements. The Commissioner will request that the Auditor General for Scotland audit the process by which the Commissioner makes adjustments to information contained within the accounts and regulatory return made by Scottish Water to the Commissioner. After consulting the Commissioner and Scottish Water, the Executive will seek the views of the Director General of Ofwat on the nature and scope of adjustments that should normally be made to audited accounts for purposes of regulatory comparison

Principle 7

Scottish Water will agree to work with the Commissioner to put in place a range of measures to assist the improvement in their relationship. This is likely to include various matters, including for example, the sharing of reports prior to publication (for the purposes of factual comment), the provision of regulatory and other information to the media, and other mutual mechanisms for resolving routine working issues as they arise.

Principle 8

Non-core activities that are new in nature or additional in extent to those passed to Scottish Water by the former Authorities may be pursued by Scottish Water (subject to the approval of Scottish Ministers) on the basis that they are funded by performance in excess of the agreed minima, taking into account progress towards the target for the end of the period.

⁸ 'Red' projects are projects originally included in *Quality and Standards II* that DWQR and SEPA had decided were no longer required. New outputs will be substituted.

Principle 9

The Executive will investigate setting up a prospective appeal mechanism to the Competition Commission.

Principle 10

Scottish Water will engage with the Commissioner in improving the quality of data supplied to the Commissioner.

In reaching an agreement on the ten principles, we were adamant that any proposal should be consistent with the customer interest. We believed that this process should either improve our ability to undertake regulation, or improve the likelihood that Scottish Water would achieve its efficiency targets. The ten principles achieve these objectives by providing a framework for improving regulatory information and by establishing a common understanding of Scottish Water's targets.

The use of borrowing in the Scottish Water Industry

There has been a great deal of discussion about whether or not the industry should borrow more and reduce prices to customers. It is important to look not only at the short-term price benefit that could be achieved by increasing borrowing but also to consider the increased exposure to risk, the potential disincentive to improve efficiency and the future level of prices before concluding that borrowing a lot more now is in the interests of both present and future customers.

The Scottish water industry is cash negative: that is to say it spends more than it receives in customer charges. This situation is likely to continue for the foreseeable future. As debt increases, so too does the total interest bill that must be met by customers. Managing debt at prudent and sustainable levels is therefore critical if the industry is to be able to respond to operational shocks.

A company will borrow when it is short of cash. This may be for short-term operational reasons (eg to cover working capital until goods or services are paid for) or for investment. If a company borrows for operational reasons, the company has to budget for the interest costs and the repayment of principal. If a company uses

debt as a source of funds for investment, management has to make sure that the additional return on the investment covers the interest payment and, ultimately, repays the capital.

In either case, the company is committing its future income to pay for today's cash resources. It is important to remember that debt is not an additional source of revenue.

Consideration of the prudence of increasing debt is more complicated in a regulated business. An economic regulator seeks to ensure that customer charges are set at the lowest level consistent with a sustainable business. He will therefore typically only allow an increased return (ie increased revenue from customers) to be earned by a company if there has been a net increase in the total asset base. As such, borrowing any more than this net increase in the total asset base would not be prudent. If a company continued to borrow in excess of the net new assets created, it would not take long for the revenue that its regulator allowed to be less than its outgoings (not including new investment). In a private sector context insolvency would follow.

In a public sector model, the trade-off between debt and equity returns is not an issue. All retained earnings will remain in the business and will be used to the benefit of customers. In a regulatory capital value model, customers pay a charge that depends upon the level of investment, the depreciation of the asset base, a rate of return on the regulatory capital value and allowable operating costs. The level of debt does not influence charges directly.

As new investment is added each year, the total value of the regulatory capital value will increase each year. Charges will gradually increase over time to reflect the larger capital value that needs to be remunerated. Customers do not therefore pay for the use of an asset before it has been added to the regulatory capital value. If the proportion of debt to regulatory capital value stays the same, there is no inter-generational wealth transfer. Moreover, if the cost of capital allowed on the regulatory capital value is the same as the borrowing cost of the public sector company, there should be no advantage to increasing debt (beyond increases allowed as the regulatory capital value increases).

Debt commutation

Many commentators have asserted that the Scottish water industry was unfairly treated in the amount of debt commuted at its reorganisation in 1996. The argument is that in England and Wales the water authorities had all of their debt written off before they were privatised, whereas less than half of the total water and sewerage debt accumulated by the Regional and Island Councils was commuted. This assertion does not bear scrutiny. Indeed, the Scottish water industry seems to have received a significantly better deal than the industry south of the border.

At privatisation in England and Wales, net debt of £4.95 billion was commuted^{9,10}. In addition, the Treasury provided a cash injection (known as the 'green dowry') of £1.57 billion. The total cost of the transaction before the proceeds from privatisation was £6.52 billion. This is equivalent to £275 for every household in England and Wales. Privatisation raised £5.22 billion. The net cost to the Treasury of the reorganisation of the water industry, therefore, was £1.3 billion. The net cost per household was approximately £55. The Treasury also transferred accumulated tax losses of £7.76 billion to the companies, but this did not have a cash cost to the Treasury.

Financial reorganisation in Scotland was more straightforward. When the three water authorities were created in Scotland, the Treasury commuted some £700 million of a total of £1,700 million of local Regional and Island Council debt relating to water and sewerage activities. This left £1 billion debt on the starting balance sheets of the three authorities. Clearly there were no receipts from privatisation to reduce the costs of the restructuring. The total cost to the Treasury from this reorganisation was therefore £700 million. This amounts to more than £330 per household. The cost to the Treasury was therefore around six times greater than that incurred reorganising the water industry in England and Wales.

At the time of the Strategic Review, the industry in Scotland had £1.7 billion in tax losses. These were

proportionately more than in England and Wales. These tax losses were transferred to Scottish Water by the Water Industry (Scotland) Act 2002.

It has also been argued that the Scottish water authorities were unfairly treated because of the high cost of debt after 1996. This argument again does not stand detailed scrutiny because the average interest charge on the debt compares very favourably with the returns that were offered to potential shareholders to ensure that privatisation was a success.

The public sector industry in Scotland will also continue to benefit from access to cheaper borrowing. The interest rate charged to Scottish Water is usually around 0.2-0.4% lower than the equivalent rate for the highest quality private sector debt.

The impression that customers in Scotland have been disadvantaged can only result from operational and capital inefficiency.

In our most recent Costs and Performance Report, we noted that out of an average domestic bill of £241, £80 or 33% was the direct result of inefficiency. This means that customers paid more than £300 million to finance inefficiency. The costs of this inefficiency were greater than the net new debt taken on by the three authorities. In real terms the customer has received no value for the extra debt accumulated and it follows that the industry's finances have been made less sustainable by this increase in borrowing.

Transparency in the level of debt

From a customer perspective, it is important that the industry is managed on a sustainable basis. This requires that management must face a hard budgetary constraint.

A hard budgetary constraint will also impact on the owner of a business. The owner needs to take difficult decisions in the event that performance (for whatever reason) lags behind what is expected. Providing some more short-term capital may be part of the solution but

⁹ £5.02 billion was commuted and £72.9 million of new debt issued in favour of the Treasury

¹⁰ 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.

there will also be a need to ensure that other steps are taken to ensure that performance reverts back to an acceptable standard. The ten principles are a good example of such decisive action

Finance Committee Investigation

In recent months, the financing of the water industry in Scotland has come under scrutiny by the Finance Committee of the Scottish Parliament. Consideration of the findings of the Committee will form an important part of the next Strategic Review of Charges.

In November 2003, the Finance Committee agreed the following remit for an investigation by two of its members.

“To investigate the following issues:

- accountability – looking at the role of the Water Industry Commissioner, the relationship with Scottish Water, the Scottish Executive and local authorities;
- structure – looking at water charging and debt management;
- investment – looking at capital projects, the profile of procurement and borrowing, billing and financial management; and to suggest potential areas for the questioning of Scottish Water and the Water Industry Commissioner....”

The Committee published its report in April 2004. The Scottish Executive made an initial response almost immediately and a further response on 14 June 2004. We responded to the Committee at the beginning of June 2004.

Reasons for the investigation

There had been an increasing amount of press attention to water industry issues during 2003. The issues raised included:

- delivery of investment and an apparently increasing number of development constraints;

- disagreements between this Office and Scottish Water on its performance;
- the large increases in charges that some small businesses had faced – this had become a high profile issue, with representative organisations such as the Federation of Small Businesses and the Scottish Forum for Private Business raising concerns; and
- a paper written by Analytical Consulting Ltd and submitted to the Finance Committee, which suggested that public expenditure rules had been incorrectly applied and that customer charges were higher than necessary as a consequence.

The Committee's findings and our response

A copy of the Committee's report is available on the Scottish Parliament's website (<http://www.scottish.parliament.uk/finance/index.htm>). The Committee made twenty one recommendations as a result of its inquiry.

We welcomed the Committee's report and its scrutiny of the water industry in Scotland. In our view this report should help ensure that all customers will benefit from a more sustainable water industry.

We agree that the strengthened regulatory regime should be more clearly accountable to customers. The current role of the Water Industry Commissioner for Scotland, as defined by statute, is to advise Scottish Ministers and to approve schemes of charges proposed by Scottish Water so long as they are consistent with the advice provided to, and accepted by, Scottish Ministers. This advice is provided within a defined policy framework (for example, that there should be a link between domestic water and sewerage charges and Council Tax bands).

In evidence we suggested that economic regulation should work in broadly the same way as for other utilities. This model requires that Ministers provide clear guidance on social, environmental and public health priorities and that the regulator should then manage a transparent process, which leads to decisions on the

maximum prices that can be levied on customers. Scottish Water should have the right of appeal to the Competition Commission. This very clear process is likely to reduce the current uncertainty amongst stakeholders on roles and responsibilities.

The Committee also made a number of other observations. Their observations, and our responses, are detailed below.

28. It is clear that the optimistic forecasts of minimal price impacts from harmonisation of prices across Scotland were not realised. Efficiency gains from the greater economies of scale should have minimised any price impact. Instead between 2001-02 (the last year of the three separate authorities) to 2004-05 (the current year and harmonisation of prices at £338.31) customers in the East are paying 25.3% more (£68.31), customers in the West are paying 27% more (£71.91) while the North is paying marginally less -3.4% (-£11.87). This is at variance with the estimate provided by the WIC. The Committee is not convinced of the WIC's estimate and explanation of the impact of harmonisation on customers in the East and West

We can confirm that the estimate that we supplied to the Committee, on the impact of harmonisation on the value of the average domestic bill, is accurate. There would appear to be two principal reasons for the misunderstanding. Firstly, the Report includes a table that details changes in the Band D bill – this is significantly higher than the average domestic bill, which is between the Band B and the Band C levels. Secondly, the substantially increased level of investment included in *Quality and Standards II* resulted in an overall increase in prices that could only be partially offset by the efficiency targets that were set for capital and operating costs.

35. The Committee is concerned that there does not appear to be agreement between the WIC and Scottish Water on how much progress is being made with regard to efficiency savings and operating costs and is also concerned over

what the impact could be if the necessary savings are not met.

The Committee is correct to be worried about the impact on future prices of a failure to meet the efficiency targets that were set in the Strategic Review of Charges.

It is however not uncommon for there to be disagreement between the regulator and the regulated organisation about both the level of the efficiency target and progress towards that efficiency target. Our role is to monitor progress of Scottish Water on a fair and objective basis. Customers can therefore be assured that comments from this office will be supported by appropriate evidence and underpinned by a consistent methodology.

59. While the Committee understands the Scottish Executive's reasons for promoting the equalisation of domestic bills across Scotland, the consequences in terms of increased charges were not adequately explained to consumers and appear to have been underestimated.

Astonishingly, the impact of the harmonisation of business charges on low volume business users appears not to have been foreseen. No economic justification for business charge harmonisation was given either by Ministers or the WIC, despite its significant impact on firms adversely affected. The failure to openly debate and consult on harmonisation and the specific harmonisation methodology that was implemented for business users, as well as the failure to introduce such a significant change on a phased basis, has caused a great deal of distress to small businesses.

The desirability of harmonised charges was recognised in the discussion that followed Sam Galbraith's announcement to the Transport and Environment Committee in February 2001 of the Scottish Executive's intention to create Scottish Water.

We accept that many of those who faced sharp increases in bills believe that there was insufficient

debate and consultation about the change in tariffs. Any such change in tariffs is likely to be unpopular with those who end up paying more and accepted as right and proper by those who benefit. In this regard, while we can sympathise with businesses who were asked to pay more, we also believe it is important that we remember that there were many businesses that benefited from the change in tariffs and that they had been paying relatively higher (than others of a similar type and pattern of usage but located in another authority area) bills since 1996.

During our programme of consultation, we received many representations from businesses and business representatives that differential charging based on location was unfair.

In evidence, the Finance Committee heard that “..it is an unusual notion that would take a strategic asset like water and say that, no matter whether someone lives in Rannoch or the top of the Cairngorms, the same pricing policy will exist for all” (paragraph 57). However, other utility businesses operating in Scotland do precisely that. Scottish Gas and BT apply the same charges across the whole of Scotland, while the Scottish electricity companies (Scottish Power and Scottish Hydro-Electric) each apply the same tariffs throughout their respective areas. It would seem not unreasonable, therefore, for Scottish Water to apply uniform tariffs, regardless of location. Certainly considerable thought should be given to the implications of the location signals that would be given to developers of encouraging a major water user to locate, say, in North Fife (a high cost water area) rather than in, say, Dundee (a low water cost area).

80. The Committee recommends that to give the public greater confidence in the quality of the consultation carried out, both Scottish Water and the WIC should operate under clear consultation codes with consistent approaches to publication of responses. In particular, all consultation submissions made to the WIC should be made public before any of his statutory reports are released and the WIC should address the relevant issues raised by

consultees within the reports themselves. In this way, the public can be reassured about the conduct of the relationship between the WIC, Scottish Water, its customers and the Scottish Ministers.

We agree that the introduction of such a code would be of benefit. Our Office will prepare in draft and consult on such a code. It would be useful to formalise this in statute in the forthcoming Bill.

83. The Committee believes that it would aid the accountability and transparency of the WIC in the view of many customers if he had to give a formal response to submissions from the Panels, which could also be lodged with the Parliament.

We would agree that this proposal could bring benefits. There would, however, be a resource implication associated with preparing an appropriate detailed written response to all submissions.

84. The WIC is both financial adviser and guardian of the public interest but was unable to provide the Committee with a clear illustration of how the public interest is determined where different interests have to be balanced. For example, weighing lower prices to the customer against the long term sustainability of the water supply network is an important decision that has been taken with little public debate.

In our evidence to the Committee, we explained that our role is technical, not political nor representational of particular groups (as opposed to customers as a whole). This technical role should ensure that the aims of Ministers are delivered, for the lowest justifiable cost to all customers.

The Strategic Review drew on guidance from Ministers on the level of performance expected from the water and sewerage network. *The Quality and Standards II* process provided the vehicle for this guidance.

85. The Committee is concerned that there is a lack of transparency in the way in which the roles of

the WIC as regulator and customer champion are combined and that there is a perception in the minds of at least some stakeholders that there may be a conflict of interest between the WIC's stated role as a champion of current consumers and being a vital element in the drive for the water industry's long term efficiency.

The statutory duty of the Water Industry Commissioner for Scotland is to promote the interests of customers. Our principal weapon in promoting customer interests is to challenge the industry to improve its efficiency and to improve its level of service. The remit of the Office does not extend to supporting the interests of one group of customers when this would disadvantage others.

Throughout the regulated industries, the recognition of the potential conflict of interest between regulator and 'customer champion' to which the Committee seems to refer has led to the creation of separate customer bodies such as Energywatch, Postwatch, Rail Passengers' Council, WaterVoice and, in Scotland, the Water Customer Consultation Panels (WCCPs). We welcomed the creation of the WCCPs as it brings clarity to the role of promoting customer views and the representation of particular customer groups.

87. The current WIC told the Committee that a subsequent WIC may take a wholly different approach to providing advice on a charging structure. This is not conducive to long term planning for the industry, continuity of the office and neither does it display much thought to the representative nature of the WIC in making advice.

The nature of our role is to promote the interests of all customers now and in the future. WICS does not have a representative role; the WCCPS has a duty to represent the views of customers.

88. The Committee believes that an improved structure and support for the WIC is needed to ensure independent regulation and transparency across the industry. Modelled on some of the English and UK regulators, an

Office of the Water Industry Commissioner, including a non executive membership, could provide greater accountability and continuity for the Scottish water industry. Consideration should be given to whether certain decisions should be taken by the WIC in the context of advice from Ministers rather than the reverse.

We agree. We have been advocating for some time that, in the interests of customers, the water industry in Scotland should be regulated in a way that is more transparent and accountable, consistent with UK regulatory policy.

129. When the WIC was before the Committee, he implied that his financial limits were not particularly stringent in the light of what the English regulator did and in the light of the sorts of ratios that were achieved by water companies in the commercial sector in England and Wales. However, there was concern expressed by members of the Committee that the basis of comparison appeared to be different and therefore the Committee sought clarification from the WIC about the basis of comparison between financial ratio targets set in Scotland compared with those in England and Wales and found that there were very considerable differences between the bases on which these targets were calculated, invalidating the comparisons which had been suggested. In a letter to the Committee dated 27 February 2004, ACL highlighted that the basis used for Scotland is "revenue – less operating expenditure". Whilst broad financial ratio analyses can add clarity in making comparisons, they can be misleading where non-comparable bases are used to assess performance. The Committee found unacceptable the WIC's use of comparisons between Scotland and England and Wales without making clear the impact of different bases of calculation. Where different bases are used this should be fully explained to ensure transparency.

Having reviewed our oral evidence, we would agree that we should have been clearer about the basis of calculation of the respective ratios in Scotland and south of the border. The comparison was designed to indicate the ability of the industry in Scotland and south of the border to withstand shocks and, as such, it would not follow that the comparison was invalid.

Lessons learned from the Strategic Review of Charges 2002-06 and the response of stakeholders

The *Strategic Review of Charges 2002-06* highlighted a number of challenges:

- the need to improve efficiency;
- the potential threat of competition;
- the need to improve understanding of the condition and performance of assets; and
- the desirability of improving the financial sustainability of the industry.

The industry has responded well to all of these challenges and customers can look forward to much improved value for money as a result. Not surprisingly, some stakeholders have criticised the Review and some of the steps that have been taken to meet the challenges highlighted in our analysis.

The areas of criticism have included:

- the process of harmonising charges;
- the increase in fixed charges;
- the industry should have been allowed to borrow more;
- the efficiency targets were unreasonable;
- a lack of clarity in roles and responsibilities; and
- a lack of explanation.

In preparing the *Strategic Review of Charges 2006-10*, we are keen to learn lessons from the criticism that has been made. We do not expect that all stakeholders will like all of the contents of the next Review, but we are keen to improve the understanding of our role.

We believe that the *Strategic Review of Charges 2002-06* set a framework that was appropriate and in the interest of the customers of today and in the future. There has been a marked improvement in the industry's efficiency and in its understanding of its assets. We believe that the Review made a significant contribution to encouraging these improvements.

However, we do believe that there are a number of steps that we can take to improve the transparency, accountability and perceived proportionality of regulation.

Transparency

Improving process

In July we published *Our work in regulating the Scottish water industry: Setting out a clear framework for the Strategic Review of Charges 2006-10*. This described our work plan in some detail and highlighted all of the information that we collect from Scottish Water. It also gave information about the opportunities for stakeholders to learn more about our work and to ask questions.

Perhaps the most important part of the process begins with the publication of our draft advice/determination at the end of June next year. This will be followed by a period for representations about this answer from stakeholders. Our final advice/determination will be published at the end of November. These prices will take effect from the beginning of April 2006.

Better explaining our approach

We have arranged a large number of stakeholder information days. These half-day sessions will provide an opportunity for us to explain where we are in completing the Strategic Review of Charges. We hope that these sessions will also provide an opportunity for

stakeholders to raise their concerns or issues with us. We will respond to all such issues raised with us at a stakeholder information day.

Ensuring that stakeholders can understand the answer

There are three important ways in which we can ensure that stakeholders can understand the answer. Publishing all of the key inputs to the Review will be important. However, we will also endeavour to present the answer in a way that will allow stakeholders to understand what the answer means for them and for customers as a whole. We will also outline our reasoning and reference the evidence upon which we have relied to come to our answer.

We also note comments from some commentators that they found that our reasoning in the last Strategic Review of Charges was not complete. The next Strategic Review of Charges will provide sufficient information for all of the major findings of the Review to be replicated.

Providing opportunities for comment

There are three main ways in which we will provide stakeholders with an opportunity to comment. These are the stakeholder information days; the publication of our proposed methodology; and the period for representations after the publication of the draft advice/determination. Each of these will play a valuable role in allowing us to hear the views of stakeholders. We would encourage stakeholders to use these opportunities.

Accountability

Explaining the role of this office and other stakeholders

We believe that the Scottish Executive's proposals to strengthen the regulatory framework in Scotland will help improve both actual and perceived accountability. The establishment of a Commission should depersonalise regulation – a Commission arriving at a joint decision is always likely to be considered more accountable than an individual with a similar power.

The proposal to give the Commission the power to decide prices subject to ministerial guidance is welcome. This will ensure that authority and responsibility are aligned.

Proportionality

There has been a concern from some quarters (principally Scottish Water in its first year and the trades' unions) that our analysis lacked proportionality. The assertion was that we had adopted regulatory tools from south of the border and blindly applied these in Scotland, taking little or no account of the maturity, geography and asset base or of the public sector nature of the water industry in Scotland. Similarly there was a concern about how quickly we asked Scottish Water to narrow the efficiency gap.

We did explain our method for assessing how quickly Scottish Water should close the efficiency gap in some detail. Looking back, it may also have been helpful to re-emphasise the importance of spend to save in making our rate of catch-up less demanding.

In the *Strategic Review of Charges 2006-10*, we will pay particular attention to issues around comparability of companies, costs and levels of service. We will seek to set targets that are proportionate and take full account of factors that would both increase or reduce the targets.

Powers of determination

The Water Services etc (Scotland) Bill, introduced in June 2004, proposes a number of important changes to the regulatory framework. Its objective is to strengthen the regulatory framework for the water industry, and to ensure that there is a robust and transparent regime that operates in the interests of all customers. The Bill includes measures to improve the accountability and transparency of the regulator, including replacing the current individual Water Industry Commissioner with a body corporate, the Water Industry Commission for Scotland. The Bill then goes on to give the Commission powers of determination over Scottish Water's charges.

This 'power of determination' is a duty on the regulator to set prices. The Commission will operate subject to ministerial guidance. There are also proposals to allow

Scottish Water a right of appeal against the Commission's decisions to the UK Competition Commission.

The Competition Commission is an independent public body with the technical, economic and legal expertise to adjudicate in disputes between companies and their regulators. Its involvement helps to ensure that the charge setting process, carried out in the knowledge of a possible referral, is robust and transparent. If a case is referred to them, their decision will be binding. This check also ensures that regulators' decisions are subject to appropriate expert scrutiny.

We believe that this proposed right of appeal for Scottish Water would ensure that any challenges to regulatory decisions could be assessed in an objective and independent way.

Stakeholders could also seek a judicial review of the regulator's decisions. In principle, the purpose of judicial review is to guard against abuse of position by ensuring that the powers and duties of government and other public bodies are exercised consistently and within their legal bounds.

Effective regulation is in the interests of both customers and industry stakeholders. The creation of a Water Industry Commission for Scotland to take collective responsibility for the Commissioner's functions is in line with the restructuring proposed for the England and Wales water regulator. It is also consistent with the Board structures already established for other regulators. Like other sectors, the Commission will benefit from a high level of relevant experience from its future non-executive members.

The proposals regarding the introduction of powers of determination contain some material differences from the equivalent powers in England and Wales. From the standpoint of customers, the most significant difference involves Scottish Water's ability to borrow money. In most other regulated sectors, companies are freely able to access debt, subject only to conditions in the debt markets. Most other regulators do not have to adjust prices to take account of constraints on new borrowing.

The current proposals for Scotland would mean that Scottish Water is still subject to public expenditure limits. It is possible that in the future, it may be prudent for Scottish Water to borrow more than Ministers may be able to allocate in public expenditure. This would lead to an increase in customer charges beyond that decided in the relevant Strategic Review of Charges.

Core and non-core services

In the Water Industry (Scotland) Act 2002 our remit was changed to cover only Scottish Water's core activities and customers. The *Strategic Review of Charges 2006-10* will therefore establish the funding requirements for the core business of Scottish Water – the provision of water and waste water services in Scotland. The targets will not include funding for any non-core activities such as providing domestic plumbing services or delivering services beyond Scotland.

We believe that this separation of core and non-core business is in the customer interest.

In the *Strategic Review of Charges 2002-06* we had reviewed the experience of the privatised water and sewerage companies in England and Wales in generating additional sources of business from non-core activities. We also looked at the development of non-core activities in Scotland and their success or otherwise. We concluded that investment in new business by Scottish Water would need to be approached very cautiously.

The financing for any new ventures in Scotland, whether a small opportunity for a start-up with potential for organic growth, or an acquisition, ultimately has to be obtained from customers of the core business or from the taxpayer. Our view was that commercial opportunities should be carefully assessed, because even if the venture appeared to generate a return relatively quickly, there may be hidden costs (such as costs to exit the business), which could adversely impact on customers' bills in the future. There is also a risk that senior management spend an undue amount of time on the newer activities.

The Water Industry Act 1991¹¹ sets out the duties, rights and powers of the companies in England and Wales. They have a duty to provide water and sewerage services but the legislation does not define exactly the limits on or extent of the core business. In addition to the legislation, companies in England and Wales operate under licence.

This requires that Ofwat has a view on what forms the core business. Its approach is set out in its Regulatory Accounting Guidelines. We expect to draw heavily on Ofwat's work as we seek to ensure that there is a detailed definition of core activities.

In order to ensure that we promote the interests of customers of the core business, we will have to take a number of steps.

- Clearly define core activities;
- Establish a set of rules governing transfer pricing between the core and non-core activities; and
- Ensure that reporting is consistent with these definitions and rules and that this reporting is subject to rigorous monitoring and audit.

We have begun work on introducing regulatory accounts for Scottish Water. Regulatory accounts use standards, breakdowns and definitions designed to allow the regulator to fulfil his functions. They are used in most regulated utilities in the UK. These regulatory accounts will ensure that we are able to monitor effectively the separation of core and non-core activities.

An important area of work in introducing regulatory accounts will be the definition of transfer pricing rules. We would again expect that these rules would be broadly similar to those used by Ofwat.

Introduction of a framework for retail competition

An important consideration in formulating our proposals for the *Strategic Review of Charges 2006-10* will be the

possible impact of the proposed framework for retail competition.

The Water Services etc (Scotland) Bill includes provisions requiring the Water Industry Commission to introduce and administer a regime to license retail competition for 'non-household' (business and commercial) customers. Subject to the Scottish Parliament approving these provisions we propose that the licensing regime should be in place in Scotland by April 2008.

Prior to that date, we expect that the Scottish Executive will require Scottish Water to establish a subsidiary to manage its 'non-household' retail activities, which the Commission will license from the outset. In these circumstances, we expect that retail competition will impact the whole of the period covered by the next Strategic Review of Charges.

Our analysis suggested that there were three principal risks faced by the water industry in Scotland as a result of the Competition Act.

- It was clear that the industry needed to improve its efficiency and allocate its costs accurately;
- We also believed that it would be better to establish a clear framework for how competition would work in the Scottish water industry. Inaccurate cost allocation or inefficiency represented a risk because it could lead a customer or a supplier to accuse Scottish Water of breaching the prohibitions under the Act; and
- Likewise, we considered that a framework, which made it clear what Scottish Water was allowed to do and clarified the policy position on environmental and public health protection, could also reduce the risk of a challenge under the Act.

We will set price limits for both wholesale and retail elements of the business that are consistent with our overall aim of minimising costs to customers while ensuring the long-term financial viability of the industry.

¹¹ Amended by the Competition and Service (Utilities) Act 1992.

Trade effluent

Another development that will potentially impact on the next Strategic Review of Charges is the proposed change to the regulation of trade effluent charges. To date, tariffs for trade effluent have not been included in Scottish Water's scheme of charges and we have not played any role in regulating them. Instead, Scottish Water, exercising powers under section 29(3)(j) of the Sewerage (Scotland) Act 1968 has set these charges. In practice this has meant that the total amount raised from customers in trade effluent charges has been limited to the difference between the agreed revenue cap and the amount raised from the tariffs approved in the scheme of charges.

The provisions of the Water Services etc (Scotland) Bill 2004 provide for the Water Industry Commission to determine charges for all of Scottish Water's core services. As trade effluent is a core activity of Scottish Water, trade effluent charges are within these provisions. Consistent with that approach, the Bill provides for the repeal of section 29(3)(j) of the Sewerage (Scotland) Act 1968, thereby removing Scottish Water's power to set trade effluent charges separately.

There are three types of waste water: surface water draining to sewers, foul sewage and trade effluent.

Surface water refers to the rainwater that drains from roofs, yards, pavements, roads and so on.

Foul sewage refers to waste water (either domestic or non-domestic customers) from toilets and washing facilities (sinks, wash basins, showers, baths, etc).

Trade effluent is liquid waste from industrial or other commercial activity. It can cover a wide variety of liquid waste. Trade effluent is more difficult to treat and can represent a hazard. Businesses must have the consent of the sewerage company before discharging trade effluent into public sewers.

Paying for trade effluent

Historically, trade effluent charges in the UK were based on the volume of the discharge. In 1976, the National

Water Council and the Confederation of British Industry agreed the Mogden formula as a basis for trade effluent charges. This formula sought to increase the cost-reflectivity of the charges that were made for the treatment of trade effluent. The formula sets a higher charge for more concentrated effluent that will require a higher level of treatment.

As part of the *Strategic Review of Charges 2006-10*, we will seek to consult with trade effluent customers, appropriate representative bodies and Scottish Water about the appropriate way to regulate trade effluent charges as part of the determination of charges that we will be required to make.

Business plans

Customers and other stakeholders are entitled to expect Scottish Water to have well-developed, sound and clear plans for the business going forward. We require a clear business plan to inform our Strategic Review.

A business plan is a company or organisation's statement of its strategy for the future. It should present clearly its forecast of revenue and costs. A good business plan should reflect the circumstances of the business. The water industry is a long-term business. It has to look well into the future in order to ensure that this essential service will be available for future generations and at an affordable cost. It needs to plan to deal with long-term demographic, social, economic and other trends.

In order to inform our analysis of revenue, we have asked Scottish Water to provide us with a business plan. The business plan is an important opportunity for Scottish Water to influence the outcome of the Strategic Review of Charges.

In England and Wales, Ofwat requires the companies to submit detailed business plans. We have introduced a similar business plan requirement in Scotland. Our requirements are broadly similar but we have adapted them to the Scottish context.

Scottish Water will be required to submit a first draft business plan and a second draft business plan to us and to the Scottish Executive. The process for each of

these submissions is essentially the same. The first draft business plan will enable us to do much of the preparatory work for the *Strategic Review of Charges 2006-10*. The second draft business plan will allow us to draw our conclusions on prices for the draft advice/determination of charges.

We expect Scottish Water to submit a draft business plan that contains a complete statement of its strategy. Our review will assess whether:

- the plan sets out a strategy consistent with the expectations on Scottish Water;
- the strategy has taken account of costs and benefits and considered possible risks;
- the plan shows a clear relationship between what is required of Scottish Water by legislation, guidance and stakeholders and its outputs;
- the outputs are clear, defined and measurable;
- the information is robust and consistent with our guidance on the business plan.

We will work with Scottish Water to ensure that the business plan meets our needs and can be used to inform the price setting process. We will require Scottish Water to publish at least a summary version of the first draft business plan and both a summary and full version of the second draft business plan. The publication of this plan and in particular the detailed investment programme will be important in reassuring customers that they will receive value for money.

Reporters

Successful regulation relies on high-quality information and analysis. This is especially true for the Strategic Review process where we will place high reliance on the accuracy of information provided to us by Scottish Water.

The agreement between this Office, Scottish Water and the Scottish Executive on the ten principles included the introduction of a Reporter.

Principle 4

“A Reporter of regulatory information will be appointed as soon as practicable. The Reporter will operate in a fashion similar to Reporters in England and Wales. The Reporter should be appointed by the Commissioner and would be chosen from amongst persons that have served at least three years as an Ofwat-named Reporter. The Executive will meet the cost of the Reporter”

In England and Wales it is water industry practice for Ofwat to use a consultant engineer (known as a Reporter) to help verify a company's return. The Reporter audits the information provided to the regulator by the company and highlights any issues or inaccuracies. We appointed a Reporter for the water industry in Scotland in December 2003.

The regulatory Reporter is Mr. David Arnell¹² of Black and Veatch Consulting. We will request the Reporter to review all aspects of Scottish Water's information returns. This will include the audit of both Scottish Water's annual regulatory return and its business plan. In particular, we will ask the Reporter to review the proposed investment programme to ensure that Scottish Water's investment plans are robust. Such scrutiny has played an important role in improving the quality and reliability of information provided to Ofwat by the companies in England and Wales.

There were four reasons why we wished to appoint a Reporter.

- There was a need for an independent assessment of the quality and reliability of information provided by Scottish Water.
- We believed that a Reporter could assist in accelerating the improvement in information quality in Scotland.
- We believed that a Reporter could help Scottish Water ensure that proper processes for collecting, storing and using information were established.

¹² Mr Arnell is also the Reporter for Northumbrian Water Services Ltd.

- We believed that a Reporter could assist us in defining 'core' and 'non-core' activities and ensuring that the 'retail'/'wholesale' split was robust.

Conclusion

In the last five years we have established a strong foundation for regulation of the water industry in Scotland. Within this framework, Scottish Water has already reduced its operating costs by some 20% and, by the end of the current Review period, we expect that it will have reduced operating costs by £145 million in real terms. Customers' bills will be some 15% lower than they would otherwise have been as a result.

We recognise that there are lessons that we can learn from the first full Strategic Review of Charges. This information and consultation document is the second in a series of five such publications that will explain our proposed approach to the next Review. Our approach draws on the Better Regulation Task Force principles of transparency, accountability, proportionality, consistency and targeting. We would very much welcome the views of stakeholders on our proposed work plan or approach. These can be sent to:

Katherine Russell
The Water Industry Commissioner for Scotland,
Ochil House
Springkerse Business Park
Stirling
FK7 7XE

or by email to
SRMethodology@watercommissioner.co.uk

The final date for comments is 29 October 2004.

Section 1: Chapter 1

The importance of regulation to customers

1.1 Introduction

As Water Industry Commissioner for Scotland (WICS), my principal statutory duty is to promote the interests of customers. I promote the interests of customers by encouraging Scottish Water to become more efficient. Scottish Water can become more efficient by reducing the cost of delivering an acceptable level of service or by improving service to customers without increasing its costs.

The Scottish Ministers can ask for my advice on charges when they consider this is necessary. Advice is likely to be required either at the end of the previous price setting period or if new information becomes available about the scale of investment. In order to provide advice on charges to the Scottish Ministers, we undertake a detailed review of the costs incurred by Scottish Water for the provision of water and sewerage services. This review is called the Strategic Review of Charges. The Review provides advice to Scottish Ministers on the minimum revenue that Scottish Water will have to raise in order to properly to deliver the service level required by customers.

The last Strategic Review of Charges covered the period 2002-06. In November 2005 we shall publish our second full Strategic Review of the Scottish water industry.

This Review was commissioned by the Minister for Environment and Rural Development, Ross Finnie, MSP, on 26 May 2004, under Section 33 of the Water Industry (Scotland) Act 2002. The Review will outline the price and revenue implications for customers of Scottish Water for the period 2006-10.

In the next three months we intend to publish a number of consultation documents that will set out our proposed methodology and approach for the Review. All of the documents that we have published, and will publish over the coming months concerning the Review, reflect our intention to provide an open and transparent process. This is in accordance with our commitment to the Better Regulation Task Force principles of proportionality, accountability, consistency, transparency, and targeting.

1.2 Structure

In this document we outline the background to our work in assessing the appropriate level of prices. The document is presented in two sections.

Section 1 sets out and explains the background of the Review and the current regulatory framework. It explains the context for the Strategic Review of Charges, and includes a review of the approach adopted at the last Strategic Review of Charges.

Section 1 consists of nine chapters. This first chapter discusses how customer service and economic regulation brings benefits to customers. It also provides a brief history of the Scottish water industry. Chapter 2 reviews the methodology that we adopted to complete the first full Strategic Review of Charges. Chapter 3 summarises the advice that we provided in that Strategic Review and the reasons for our advice. Chapter 4 describes the resource accounting principles that applied to the public expenditure limits set by Ministers for the 2002-06 Strategic Review. Chapter 5 discusses performance monitoring, and Chapter 6 outlines the 'Ten Principles', which are written terms of understanding between the Scottish Executive, WICS and Scottish Water. Chapter 7 discusses issues relating to Scottish Water's access to debt. Chapter 8 describes the Finance Committee's Inquiry. Finally, in Chapter 9, we highlight some of the lessons that we have learned and how we intend to apply these lessons in the next Strategic Review of Charges.

Section 2 (Chapters 10 to 15) discusses changes to the regulatory framework that are anticipated in the near future and the impacts these changes might have for both customers and regulation.

Chapter 10 outlines the proposal to move from a single regulator with advisory powers to a Commission with powers of determination. Chapter 11 discusses the implications of the amendment to the Water Industry (Scotland) Act 2002, which limited the role of the Commissioner to promoting the interests of customers of the core business. Chapter 12 discusses proposals to introduce retail competition for business customers.

Chapter 13 focuses on proposals to bring trade effluent tariffs within the remit of the economic regulator. Chapters 14 and 15 describe changes to the work that this office carries out in completing the Strategic Review of Charges; Chapter 14 outlines the new requirement upon Scottish Water to provide a detailed business plan outlining its strategy and objectives for the next regulatory period and Chapter 15 describes the role of the Reporter.

Scottish water industry: Setting out a clear framework for the Strategic Review of Charges (July 2004), which is available on our website.

The timeline for the current Strategic Review of Charges is illustrated in the figure opposite.

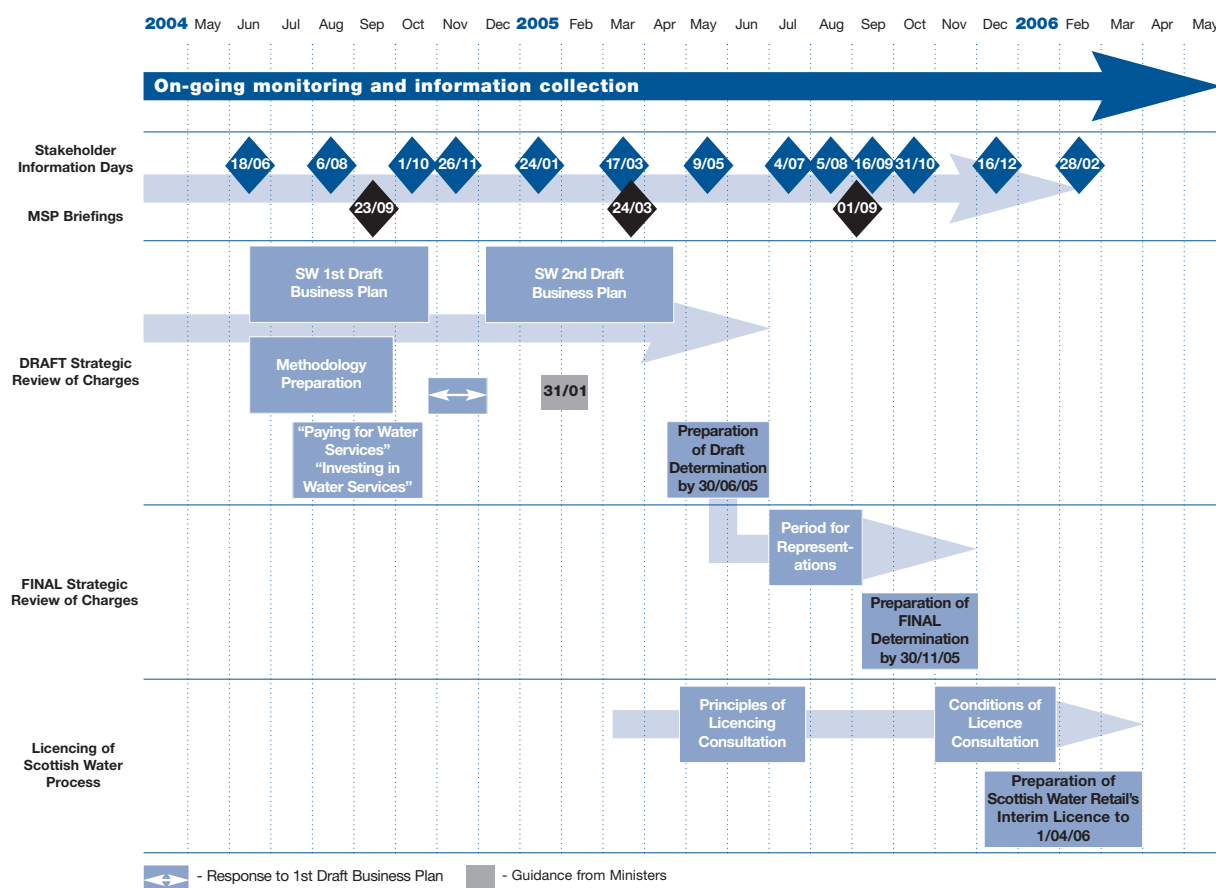
Further consultation documents

Later this year, we shall be publishing further documents which will consult stakeholders about particular aspects of the methodology that I will adopt at the next Strategic Review:

- The methodology for calculating prices consultation document, which will be published **on 22 September 2004**, will cover the way we calculate prices, including issues such as establishing the regulatory capital value and determining an appropriate return on capital.
- The methodology for assessing the scope for efficiency consultation, which we will publish on **29 September 2004**, will examine the scope for efficiency gains in capital costs and operating costs.
- We are also publishing a summary of the methodology consultation on **29 September 2004**.

We will carefully review all responses to the consultation documents, including this framework document. On 19 November 2004 we will publish a formal response, setting out how the issues raised by respondents will be addressed.

We are also planning a series of workshops and stakeholder information days so that interested parties can express their views in person. Details of these events are contained in *Our work in regulating the*

Figure 1: Calendar of events for the next two years

Throughout this document we refer to the regulatory role of this Office but it should be emphasised that the legislative duties of regulating Scottish Water reside with the Water Industry Commissioner as an individual and the Office supports him in this function.

1.3 Customer interest

The post of Water Industry Commissioner for Scotland was created under Part II of the Water Industry Act 1999. Section 12 of the Act states:

67A. – (1) There shall be a Water Industry Commissioner for Scotland (in this Part of this Act referred to as the “Commissioner”) who shall have the general function of promoting the interests of customers of the new water and sewerage authorities.

The Commissioner achieves this general function through specific functions, also set out in statute. These specific functions are:

- providing advice to Ministers, and
- investigating complaints.

The statutory requirement to provide advice to Ministers covers advice on both the economic performance and the customer service performance of Scottish Water.

On economic performance, Section 33 of the Water Industry (Scotland) Act 2002¹ specifies that the Commissioner must provide advice to Scottish Ministers concerning what should be taken into account by Scottish Water in “fixing charges in charges schemes”.

¹ This section replaces Section 13 of the Water Industry Act 1999, which refers to ‘the new water and sewerage authorities’

Section 33 also sets out the elements of financial and economic performance that he should take into account in preparing his advice, as:

- the economy, efficiency and effectiveness with which Scottish Water is using its resources in exercising its core functions;
- the likely cost to Scottish Water, for the period of the advice, of exercising its functions;
- the likely resources, other than income from charges for goods and services, available to Scottish Water for the period of the advice;
- any guidance issued to Scottish Water by the Scottish Ministers; and
- any directions given by Scottish Ministers, of a general or specific character, concerning the operation of Scottish Water.

As far as customer service performance is concerned, Section 3 of the Act specifies that the Commissioner is to advise the Scottish Ministers on any matter which appears to me, or to them, to relate to:

- the standard of service provided by Scottish Water to its customers; or
- the manner in which it conducts its relations with its customers or potential or former customers, in the exercise of its core functions.

With respect to the investigation of complaints, Section 3 of the Water Industry (Scotland) Act 2002 specifies that the Commissioner “must investigate any complaint made to the Commissioner or a Customer Panel by a current, potential or former customer of Scottish Water as respects any of its core functions”.

Section 3 also empowers the Commissioner to make representations to Scottish Water about any matter to which the complaint relates, or which appears to him to be relevant to the subject matter of the complaint.

1.4 The provision of advice to Ministers

In order to fulfil the statutory requirement to advise Ministers, the Commissioner must undertake the functions of economic and customer service regulator of Scottish Water.

Economic regulation involves undertaking a Strategic Review of Charges, approving Scottish Water's annual scheme of charges, and performing ongoing monitoring of Scottish Water's economic performance.

Customer service regulation involves performing ongoing monitoring of Scottish Water's customer service performance and approving Scottish Water's Code of Practice.

1.4.1 Economic regulation

Economic regulation of Scottish Water involves undertaking a Strategic Review of Charges when directed to undertake such a review by Ministers. The Review determines the level of revenue required by Scottish Water in order to be able to finance the core functions of providing water and sewerage services on a sustainable basis. The cost of the capital investment programme that is decided by Ministers following public consultation is assessed, as is the operating expenditure required for each year of the Review period. The Review takes full account of the efficiencies that Scottish Water can be expected to make.

One of the most important aspects of economic regulation is ongoing monitoring of Scottish Water's economic performance. The Strategic Review of Charges is a baseline against which performance can be measured. Each year, we collect a significant amount of information from Scottish Water. This is information that Scottish Water should already use to manage its business effectively. We carry out analysis of the financial and economic information that we receive and use this to monitor and report on performance in two reports (the Investment and Asset Management Report and the Costs and Performance Report).

As economic regulator, the Commissioner is also responsible for approving Scottish Water's annual scheme of charges. Each year, Scottish Water produces a proposal for charge levels for the following year. This Office analyses the proposals then decides whether or not it can approve them. The Commissioner first has to ensure that the Scheme of Charges is fully consistent with the advice that was approved by Ministers. Second, given that the role of the Commissioner is to promote the interests of all customers, he must ensure that charges are broadly cost reflective and that there are no unintended cross-subsidies between customers. Any changes from one year to the next in the burden of charges between customer groups must be backed by a clear cost justification.

If the Commissioner considers that the scheme is not consistent with the advice approved by Ministers, and Scottish Water does not agree to the modifications proposed, under section 3 of 2002 Act he must send the scheme (with any proposed modifications) to the Scottish Ministers. Scottish Ministers are then responsible for approving the scheme with any modifications they see fit to make.

1.4.2 Customer service regulation

Customer service regulation of Scottish Water involves ongoing monitoring of Scottish Water's performance on customer service measures. Once again, this is achieved through review, analysis and reporting of submissions of customer service information from Scottish Water. We can also make use of information from our investigation of complaints (see below) and from our programme of consultation.

We work with the Water Customer Consultation Panels (WCCPs) to ensure that Scottish Water offers an appropriate level of service to customers. The WCCPs have a remit to represent customers and can make representations to the Commissioner.

An important aspect of customer service regulation is the approval of Scottish Water's Code of Practice. Scottish Water has an obligation to produce a Code of

Practice under section 26 of the Water Industry (Scotland) Act 2002. The Code of Practice provides information on the standards of service that customers can expect and on how Scottish Water will deal with customers.

Once Scottish Water has prepared a draft of its Code of Practice, it will submit this to the Water Industry Commissioner. The Commissioner will consult with the WCCPs and compare the proposed service levels with those offered by other water and utility companies. Comments and suggestions are provided to Scottish Water and new drafts are reviewed until a final version is agreed.

1.4.3 Investigating complaints

In order to fulfil the statutory requirement to investigate complaints, we investigate written or telephone complaints that we receive direct from customers, as well as complaints referred to the Commissioner by the Convenor of the WCCPs.

In some cases the complaint may be dealt with by providing an explanation to the customer about how a decision has been reached or by confirming that Scottish Water has carried out an appropriate process or procedure. In other cases we may have to intervene in order to help resolve a dispute between Scottish Water and the customer, or may have to provide Scottish Water with a recommended course of action.

1.4.4 The Commissioner's statutory powers

The Water Industry (Scotland) Act 2002 gives the Commissioner very wide powers in order to carry out his functions. Section 3 states:

(7) The Commissioner has the power to do anything which is calculated to facilitate, or is incidental or conducive to, the exercise of the Commissioner's functions.

The Act also gives statutory recognition of the importance of information to effective regulation.

Section 4 of the Act gives me the power to require information from Scottish Water:

(1) Scottish Water must, on being requested to do so by the Commissioner, provide the Commissioner with such information held by it as the Commissioner may reasonably seek in the exercise of the Commissioner's functions.

(2) Where Scottish Water and the Commissioner cannot agree as to whether information is sought reasonably, either of them may refer the matter to the Scottish Ministers, whose decision is final.

1.4.5 How the Commissioner's role has developed

Since this Office was created in 1999, the scope of our activities has broadened. In our first years of operation we concentrated on the first Strategic Review of Charges and on collecting the information that was essential to that Review. Gradually our ongoing monitoring of Scottish Water has taken on greater importance.

Proposals under the Water Services (Scotland) Bill will see the role of this Office develop further. The Bill proposes the introduction of retail competition for non-domestic customers. We would take on the role of licensing authority and would have a part to play in policing competition in the new market.

1.5 Economic regulation

1.5.1 Why is economic regulation needed?

The purpose of regulation is to seek to ensure that monopoly businesses act in the customer interest. Customers should not have to pay higher prices or accept lower levels of service because they are unable to choose their supplier.

Monopolies can exist in both the public and private sectors. They can also exist at an international, national or local level. In theory a monopoly exists when there is a single supplier to a defined market. In practice there

are very few examples of such pure monopolies. An effective monopoly is present when most, if not all, customers do not have any real choice and when the dominant market supplier determines the terms and price of supply. The limited options that exist for customers to make water or waste water arrangements separate from the public network do not substantially alter the extent of Scottish Water's monopoly. Similarly, in England and Wales, although a customer in one area can request a service from a supplier in an adjoining area, in most cases this is not economically viable.

Network utility industries tend to be monopolies because the cost to replicate the network would be excessive. Economists describe them as involving a significant 'natural monopoly' element. A 'natural monopoly' refers to the situation where there is only one firm supplying a product in the market, but this is not the result of the firm's behaviour. Instead, it arises as it is the sensible way to organise the industry and it is in the best interests of customers to do so.

The reason that it is sensible to organise the industry in this way is that it is cheaper for one firm to supply the whole of the market than for two or more firms to share the market. For example, a single firm may have costs of £2 million to supply the whole market, whereas if two firms shared the market each firm may have costs of £1.5 million. It follows that if there were a single firm in the market customers would have to pay £2 million in charges to cover costs whereas if there were two firms in the market customers would have to pay £3 million in charges. In such a situation the single firm is benefiting from economies of scale.

However, the behaviour even of natural monopolies may work against the customer interest if unchecked. There are two ways in which this might happen.

First, if the service is essential and the customer has no choice about where to purchase it, the monopoly has an incentive to charge an excessive price and to make excessive profits. This type of behaviour is known as monopoly pricing. Because the product is essential the firm can raise its price without demand for the product

falling too far. The firm's profits will therefore increase as it raises its price. From the customer's point of view there is little alternative to buying the product regardless of the price. Water and power are typical products of this type.

Second, in the absence of competition the monopoly faces no incentive to innovate and improve its efficiency over time. From the point of view of the firm a failure to innovate and improve efficiency will have little or no implication for the size of the market that it serves or the level of profit that it earns. Compared with a competitive market, the industry will tend to stagnate.

1.5.2 What does economic regulation do?

In the private sector, the regulator will seek to establish a balance between customers and the providers of finance. In doing so, it is the regulator's duty to ensure that an efficient business can fund its operations. It is important to customers that the service is provided on a sustainable basis. It is left to the owners of the privatised business to ensure that management meets or exceeds the targets set by the regulator. Such outperformance is the only way to ensure that the owners of the business will receive a higher return on their investment.

In the public sector, regulation of the water industry focuses on ensuring that customers receive a value for money service that delivers the environmental and public health objectives of the Government. These objectives apply over the short, medium and long term.

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

This tight budgetary constraint should focus management attention on delivering on-going improvements in value for money to customers. This

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

In a competitive market, companies face similar tight budgetary constraints in that they have to match their costs to the revenue they can win from customers. Regulation consequently provides a proxy for the discipline of competition.

The annual process of approving Scottish Water's scheme of charges is a central part of providing this discipline in the Scottish water and sewerage industry. In the approval process the revenues that would be generated by Scottish Water's proposed charges are compared with the revenues that are allowed by the Strategic Review of Charges limits. The Strategic Review of Charges limits, or revenue caps, represent the revenue that an efficiently run Scottish Water would require in order to provide water and sewerage services. If the charges proposed by Scottish Water were to generate more revenue than is allowed by the Strategic Review of Charges revenue cap, this would indicate monopoly pricing. The regulatory process ensures that Scottish Water's charges are consistent with the revenue cap and so do not contain a monopoly pricing element.

Regulation can also provide an incentive for efficiency and innovation. While the Strategic Review of Charges sets targets for capital and operating cost efficiency, ongoing monitoring of Scottish Water's performance on managing assets and improving efficiency ensures that there is continuous pressure on Scottish Water to meet these targets.

Finally, regulation can provide a framework that encourages investment. The water and sewerage industry is an asset-intensive industry that relies on expensive assets with very long lives. If the industry is to provide a reliable service, at the level of quality that is expected by customers, it is important that regulation should provide incentives to invest and should avoid producing disincentives to invest. Regulation can achieve these objectives if the regulator can provide a commitment to the regulated firm that once the investment has been made the firm will be allowed to recover the cost of that investment, including a fair return on capital.

The regulatory process should also avoid any bias in the treatment of operating and capital costs so that there is no distortion in the choice between capital investment and operating solutions.

1.5.3 What are the limits to economic regulation?

As discussed, the purpose of regulation is to seek to ensure that monopoly businesses act in the customer interest. Regulation seeks to capture the benefits of economies of scale enjoyed by a natural monopoly and to avoid the excessively high prices and the tendency to stagnate that characterise unconstrained monopolies. However, there are limits to the ability of regulation to perform this role.

The effectiveness of regulation will depend on the quantity and accuracy of information available to the regulator and the consistency and clarity of the policy framework within which he operates.

In common with other economic regulators, we collect a large amount of information from Scottish Water. This information is collected in standard formats. Each request for information is issued with a clear explanation and detailed definitions of what is required. Recently, we agreed with the Scottish Executive and Scottish Water that we should appoint a Reporter to audit the consistency and completeness of information provided to us. This brings the Scottish industry broadly into line with the situation south of the border.

Regulators can also benefit from other information sources, but the information provided by the regulated company will always be the most important. Unfortunately, the regulated company can try to use its control of information to its advantage. Such an attempt can create an information asymmetry and may, in the short to medium term, reduce the effectiveness of regulation. Over the longer term, there are measures that a regulator can take to compensate for such behaviour. We believe that the information process that we have established has reduced this potential risk to customers.

Regulation of network industries takes place within a complex policy framework. It is important that the regulator has the benefit of clear guidance in order to be able to strike an appropriate balance between potentially competing priorities (low bills or additional environmental improvements).

In the water industry, the Office of Water Services (Ofwat) initiated a system of comparative competition to improve the value for money received by customers. All of the regulated water companies have an incentive to invest because they are guaranteed a return on efficient investment and are allowed to keep the benefits of outperformance of regulatory targets for five years. Comparative competition ensures that the performance of each company (in terms both of costs and levels of service) relative to its peers is clear. This performance is reflected in Ofwat's performance monitoring assessments, for example, through publication of 'league tables'. Unless a company is content to see itself at the bottom of the performance league, it has an incentive to innovate and improve its performance. This regulatory regime does mimic a genuinely competitive market.

1.6 Customer service regulation

1.6.1 Why is customer service regulation needed?

Scottish Water's customers are concerned not only about the price that they pay for water and sewerage services, but also about the quality of service they

receive. It is the combination of these two elements that determines whether customers receive value for money from Scottish Water.

There are many different aspects of Scottish Water's quality of service. Some of these relate to the operation of the network; for example, how frequently supply is interrupted and the quality of the water delivered. Others relate to the interaction between Scottish Water and its customers; for example, the time taken to respond to billing enquiries or the time taken to respond to a complaint. Regulation must take account of all aspects of quality of service.

In a competitive market, firms compete with each other in terms of price and quality. However, competition in terms of quality is not straightforward, as customers do not always demand the highest level of quality that is possible. In some markets firms occupy niches, so that customers have the choice of products or services that are low cost and low quality, average cost and average quality, high cost and high quality, and so on. Customers with different preferences will choose the cost-quality combinations that match their preferences. However, for any given level of cost, the competitive firm has an incentive to ensure that the good or service is provided with the highest possible level of quality.

In a regulated market, just as the incentive to reduce costs has to be provided by the regulatory framework, so too must the incentive to provide the highest level of quality possible for any given level of cost.

Where prices are regulated the company may have an incentive to meet cost reduction targets by reducing quality. For example, in order to meet operating cost targets a water company could reduce maintenance activity and allow the network to deteriorate. Alternatively, it could reduce the capacity for handling billing contacts or other enquiries and allow performance in these areas to worsen. Although the cost reduction target may be met this does not constitute an improvement in efficiency. As previously outlined, improved efficiency implies either a higher quality output for the same price or the same quality output for a lower price.

1.6.2 What does customer service regulation do?

Regulation can provide an incentive for the regulated firm to improve the quality of the service it provides.

It can do this directly by setting targets for different elements of service quality and measuring performance against those targets. However, the regulator would require a considerable amount of information in order to set targets for each element of service quality. The regulator would also require information about the level of service quality that is possible for any particular level of cost, and about customer priorities between the different aspects of customer service. This is because for a given level of cost, a higher target for one aspect of customer service may mean lower targets for other aspects of customer service.

Rather than setting targets for each aspect of service quality, the regulator in Scotland and England and Wales, may compare actual performance against other similar companies ('comparative competition'), and highlight areas where performance could be improved. The regulator may then monitor performance and report on how well the company is performing against the areas identified for improvement.

1.6.3 What are the limits to customer service regulation?

Effective customer service regulation is dependent on good quality information on customer service performance. Reliable information about the quality of customer service is more difficult to collect than information about costs, customers or assets. Much of the information relies on works management reporting, statistical analyses and complaints. Moreover, performance in individual years may be adversely impacted by abnormal events.

In Scotland we do not yet have an accurate picture of the quality of service performance and how it compares with performance south of the border. In England and Wales, information about the level of service to customers has been collected for a number of years. Regulation by comparative competition and audit of

information by Reporters has ensured that this information now accurately reflects the service provided to customers. By contrast, in Scotland we have only relatively recently begun to collect information about the level of service to customers in a consistent way. Over the next few years, we would expect this information to become much more reliable so that more detailed comparisons with levels of service south of the border will be possible.

1.7 A brief history of Scottish Water

Part II of the Local Government etc (Scotland) Act 1994 created three water authorities – East of Scotland Water Authority, North of Scotland Water Authority, and West of Scotland Water Authority.

Before the water authorities were created, the nine mainland regions and three island areas of local government provided water and sewerage services. Historically there has been a trend towards concentration in the water and sewerage industry, prompted by advances in engineering and more demanding standards for customer service 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. Scotland was divided into three areas of provision, largely reflecting the existing supply and disposal networks, and the boundaries of previous local authorities:

- East of Scotland Water Authority served the former Lothian, Borders, Fife, and 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 served 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 served the former Dumfries & Galloway and Strathclyde Regional Council Areas.

The same Act established the Scottish Water and Sewerage Customers Council, which, as predecessor to this Office, had the function of “representing the interests of customers and potential or former customers of the new water and sewerage authorities”.

The three authorities and the Secretary of State jointly had a duty to have regard to the interests of customers and potential customers. Each authority was also under a statutory obligation to draft a Code of Practice to make provision as to:

- standards of performance in providing services to customers;
- procedures for dealing with customer complaints; and
- the circumstances in which they would pay compensation if standards were not attained.

The three authorities had the power to set a charges scheme subject to approval by the Customers Council.

1.7.1 Merger of the three authorities

In our interim *Strategic Review of Charges 2002-06*, published in November 2001, we identified that the level of investment in maintaining the water and sewerage infrastructure needed to be significantly increased. Sarah Boyack, the then Minister for Transport and the Environment, accepted the principle that there was a need for increased investment, but suggested that more work was necessary to identify the scope and extent of the investment required. She therefore did not implement the full price increases that had been recommended. Nonetheless, the 43% increase in prices to households in the north of Scotland was very unpopular – especially as the increases in the Central Belt were less than 20%.

Early in the *Quality and Standards II* process, it became clear that investment requirements in the north of

Scotland would lead to further significant price increases in the *Strategic Review of Charges 2002-06*. We encouraged the three authorities to work together to establish whether there could be savings from joint working. This project confirmed that there were significant potential savings and that a merger was likely to be the best way to realise these savings quickly.

In late 2000 and early 2001 the Transport & Environment Committee held an enquiry into the water industry. This enquiry heard evidence from many stakeholders about the impact of prices in the north. It also heard evidence that there was significant scope for efficiency. Members of the Committee began to ask whether a merger of the three authorities could bring benefits to all customers. At his evidence to the Committee on 28 February 2001, Mr Sam Galbraith, Minister for Environment, Sport and Culture, announced that he had become convinced that a merger was in the interests of all customers. He said that he had decided to merge the authorities because of the potential for cost savings. He explained that this would allow future charge increases to be kept as low as possible, and would place the industry in a better position in the event that competition was introduced.

1.7.2 Harmonisation of Charges

The Transport & Environment Committee also accepted that charges should be harmonised throughout Scotland. The Scottish Executive decided that the same type of customer should pay the same charge regardless of where they lived or worked in Scotland. This was seen to be a matter of fairness between customers and would be consistent with pricing for other utility and postal services.

Maureen Macmillan (MSP, Highlands and Islands) (Lab), a member of the Transport and Environment Committee, asked the following question:

Maureen Macmillan (Highlands and Islands) (Lab): I am happy to hear the Minister's commitment to a single authority, which will be of great benefit to the north. What time scale do you envisage for that? The North of Scotland Water Authority has said that,

in the next couple of years, consumers in its area will pay the highest charges in the UK. Could a single tariff be introduced in advance of merging the three authorities?

Mr Galbraith: I hope that we can introduce that as soon as possible, but the time scale depends on the parliamentary process. We cannot introduce anything before that is followed through. It is fair to say that the prices and some of the large increases are reaching their peak and should begin to level off. The future is brighter.

Maureen Macmillan is correct to point out an interesting epiphenomenon of moving to one authority, which will be assistance. However, that is not the reason for the change. The reason is to become more efficient, to retain the service in the public sector and to allow it to stand up to competition. We will introduce a single tariff as soon as possible, commensurate with the parliamentary process.

The three separate authorities remained in existence until the formation of Scottish Water under the Water Industry (Scotland) Act 2002. Under sections 21-23 of the Act the functions, property, liabilities, and staff of the water and sewerage authorities were transferred to Scottish Water.

Scottish Water remains in the public sector, and is owned by and accountable to the Scottish Executive and Ministers. However, the structure and management of Scottish Water draws on the private company model. Scottish Water has 12 board members, comprising 5 executive directors and 7 non-executive directors. The combination of public sector ownership and private sector organisational structure should ensure that the business is run in the public interest as efficiently as possible.

The 2002 Act gives Scottish Water wide powers to engage in any activity to which it considers necessary or expedient for the purposes of carrying out its core functions. Scottish Water was also required to agree a

Consultation Code with the WCCPs and to provide this to Scottish Ministers.

The process of harmonising charges for non-domestic customers began in April 2002. In this first stage, Scottish Water made a number of incremental changes intended to bring the charges used by the previous water authorities more into line with each other; for example, fixed charges for customers formerly served by North of Scotland Water Authority and West of Scotland Water Authority were increased considerably. This moved their charges towards the structure employed for metered customers by East of Scotland Water Authority.

In April 2003, however, all non-domestic charges moved to a single structure, with all remaining harmonisation being carried out in a single step. Harmonised charges across Scotland mean that customers pay a similar amount for a similar service. Thus, a business with water and wastewater services in Inverness should pay the same as a business with similar water and wastewater services in Dumfries.

Scottish Water has completed two years in its new form and has made good progress in reducing its operating costs. To date progress in the delivery of the capital programme is still limited. Customers will truly benefit when progress in improving the efficiency and delivery of the capital programme accelerates.

1.8 Regulation in the public sector

There is a clear consensus that water should remain in the public sector in Scotland. The role of regulation is to set a framework within which Scottish Water can improve its efficiency and consequently the value for money it provides to customers.

If a public sector organisation can match the level of efficiency of investment and service delivery that is achieved by the private sector, customers of that public sector supplier could expect sustainably lower prices than could ever be achieved by the private sector. This is because the public sector is consistently able to access a lower cost of capital. There can be no doubt that Scottish Water's customers benefit significantly from

access to attractive terms for public government loans that are much cheaper than the private sector's cost of capital. These government loans attract interest rates that are lower than the cost of commercial debt of similar term length for a water and sewerage company in England and Wales. Moreover, such relatively expensive private debt is considerably cheaper than equity. Although direct comparisons can be difficult because of the existence of equity and the duration, base rate and tax issues associated with private debt, a comparison with Ofwat's allowed cost of capital helps to illustrate this point.

Ofwat's allowed cost of capital for the period 2000-05 (which assumed a 50-50 split between debt and equity), is 4.75% post-tax for the water and sewerage companies. Government loans to Scottish Water since April 2002 attracted interest rates of between 3.3% and 4.9%. The weighted average interest rate for new loans taken out by Scottish Water in 2002-03 was 4.08%. This would be equivalent to 2.86% post-tax.

We estimate that Scottish Water's customers probably benefit by around £44 million per year, because of this 2% saving on the annual cost of capital. We have calculated this on the basis of current total borrowing of approximately £2.2 billion.

It is important to note that this cost benefit will only truly be realised by customers if they are not exposed to operational risks and if the service is delivered efficiently.

However, as regulator we must take into account that customers of Scottish Water are more immediately exposed to the financial risks of the business than customers in England and Wales. This is because there are no private equity shareholders. In the event of an external shock or underperformance by the business a private utility can:

- a) withhold dividend payments to shareholders;
- b) seek a rights issue; and
- c) obtain debt in the private markets.

Scottish Water, by contrast, must either:

- a) seek unplanned public expenditure in the form of a loan, or
- b) increase charges to customers immediately.

The presence of private equity acts as a significant shock absorber, so protecting customers in England and Wales. An example to illustrate this point is the costs that resulted from the drought in 1995 (approximately £250 million), which had to be absorbed by the equity holders of Yorkshire Water. Moreover, the regulator cut the prices that could be charged to customers, as a result of poorer service, and consequently further limited the return available to shareholders.

The private sector provides a further level of risk management that benefits customers. Strong incentives help to reduce the exposure of customers to financial risk. The commercial interests of the company are served by ensuring that management takes action to minimise the impact of external shocks on the business. Even more importantly, there are commercial incentives to outperform efficiency targets, which benefit customers in the medium term⁴. The tight budgetary constraints apply a degree of financial discipline to the business, so that there are 'sticks' as well as 'carrots'.

However, we should emphasise that it is not necessary to adopt an equity-funded model in order to manage financial risk. Glas Cymru⁵ has established a structure that protects customers from financial risk, without a traditional shareholder acting as a 'shock absorber' since total debt is less than its regulatory asset value.

Glas Cymru purchased the assets of Welsh Water for 95% of its regulatory capital value. This lower purchase price, a clear ring-fence on activities, and the transparent incentives that are published in advance have all contributed to a lower cost of capital. Glas Cymru is believed to have one of the lowest costs of capital in the water industry south of the border. This results from its focus on the core business and the way it does not use equity capital. Its average cost of debt is

approximately 6.8%. This is equivalent to 4.76% post-tax. The actual post-tax cost of capital for Glas Cymru is under 4.5% because the assets were purchased below their regulatory asset value. The budgetary constraints are still tight and the debt provided by private banks is at risk if there is an unforeseen shock. However, customers are protected because the banks are committed in advance to making additional funds available if there is such a shock – although there is likely to be governance implications for the organisation. Customers would not suffer (assuming that proper management could have avoided or limited the shock) since Ofwat would be under no obligation to increase the cash value of the return on capital allowed to Welsh Water as a consequence of any unforeseen shock.

At the current time, the regulator can attempt to limit the risk to customers by adopting prudent financial ratios and consequently a margin between the public expenditure used and the maximum made available. Nonetheless, customers are exposed directly to external shocks. They are particularly exposed to any shortfall in Scottish Water's performance against targets. If Scottish Water underperforms, and borrows more, this will raise prices for future customers. Extra borrowing leads to extra interest payments and consequently higher prices for customers.

As we outlined above, regulation can only be fully effective if there is a transparent, tight budgetary constraint on Scottish Water. The level of improvement in efficiency that is necessary to improve value for money to customers will only be possible with such a constraint. It would be reasonable for this constraint to have two levels – a maximum published in advance that would apply in all reasonably foreseen situations and a contingency that would only be triggered in genuinely exceptional circumstances. Our current understanding is that the current funding arrangements that the Scottish Executive has in place for the remainder of this regulatory period are consistent with these recommendations. As with Glas Cymru, however, the consequences of such exceptional circumstances should not have an impact on the price paid by customers.

⁴ Outperformance in a regulatory period can be retained by the company for five years. This benefit is then transferred to customers.

⁵ Glas Cymru, a not-for profit company limited by Guarantee, acquired Welsh Water in May 2001.

1.8.1 Policy framework

The policy framework is informed by the guidance that we receive from Ministers. In the first years of regulation the main priorities have been improved financial sustainability; greater fairness between customers; and showing that a public sector model for the industry can work.

1.8.2. Financial sustainability

If customers are to benefit from a sustainable industry, we must ensure that we invest appropriately in water services. This means that a generation should pay the full costs of the service that it receives and should not store up problems for the future. Debt can play a key role in funding long-term needs. Borrowing is appropriate to even out the peaks and troughs in investment needs, and to finance genuine one-off investment. Borrowing is inappropriate where there is no realistic prospect of repayment, either because of continuing need for investment, or because of a lack of cash to pay the interest on the loans taken out.

The costs of providing the service can be broken down into operational costs (the costs of running the system), the capital costs (the maintenance, replacement and upgrading of the assets) and the financial costs (the costs associated with debts and funding working capital). Funding the costs of maintaining the system ultimately has to come from customers. If money is borrowed, the 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 funding for other central Government services would have to be reduced. The customer interest is therefore clear: it is that the costs of service should be reduced to the minimum that is consistent with maintaining a secure, safe and sustainable water and sewerage service.

1.8.3 Fairness

In promoting the customer interest, we must ensure that Scottish Water's charging is fair to all customers. There

are a number of ways in which fairness can be interpreted:

- The same type of customer should pay the same charge regardless of where they happen to live. This view of fairness led to the recommendation at the last Strategic Review of Charges that non-domestic charges should be harmonised for all of Scottish Water's non-domestic customers.
- The burden of Scottish Water's costs should be shared fairly between different customer groups. This issue of what would be 'fair shares' of costs between customer groups will be considered in the Scottish Executive's consultation 'Paying for Water Services'.
- Scottish Water should improve its efficiency significantly. Typically, customers in Scotland pay more for the water and sewerage services they receive than they would as customers in England and Wales. It is fair that they should receive an equivalent service for an equivalent price. In other words, customers of Scottish Water should receive value for money equivalent to that received by customers of the companies south of the border. The principle that there was no reason why Scottish customers in general should be asked to pay more than those south of the border underpinned the efficiency targets that we set in the Strategic Review of Charges 2002-06.

1.8.4 Scottish Water to remain in the public sector

The Scottish Executive has no plans to take Scottish Water out of the public sector. It recognises that the best way to justify the public sector model is to improve the efficiency of the water industry in Scotland and to deliver the same environmental and water quality improvements that have been achieved south of the border.

In the 2002-06 Strategic Review of Charges, we set challenging but achievable efficiency targets for Scottish Water's operating and capital costs. We continue to monitor progress towards those targets and believe that significant improvement would justify the public sector

model. Such improvement will need to continue into the next regulatory period as there is still a significant efficiency gap between Scottish water and the industry south of the border.

Lessons have been learned from the first full regulatory period. These are described in Section 1, Chapter 9. Section 2 outlines proposed changes to the framework of the industry in Scotland and describe why we believe these to be in the interests of customers. These changes should also help deliver an improved public sector model for the water industry in Scotland.

Section 1: Chapter 2

Review of the methodology for the Strategic Review of Charges 2002-06

2.1 Introduction

In August 2001, our office was commissioned to carry out the *Strategic Review of Charges 2002-06* by the Minister for Environment and Rural Development, Ross Finnie, MP. At that time, the Parliament was considering proposals from the Scottish Executive to merge the three water authorities and create Scottish Water. We therefore had to advise on revenue caps both for the proposed Scottish Water and for the existing three authorities. Our methodology would have to support both potential outcomes and allow stakeholders to make objective comparisons of the implications for customers of the merger.

This chapter reviews the methodology for our *Strategic Review of Charges 2002-06*¹. The methodology covered:

- the collection and use of information;
- the level of investment;
- the views of customers and the level of service;
- the potential for competition;
- the opportunity for efficiency;
- the calculation of a revenue requirement; and
- the application of a risk analysis to the proposed revenue caps.

We will review each of these areas in turn and will outline:

- the position in 2001 when we developed our methodology;
- the approach we used in 2001; and
- developments since then.

The methodology for the 2006-10 Strategic Review of Charges will build on the solid foundation created by our work in 2001. We will use the improved information that is now available to broaden and deepen the analysis that we were able to complete at that time. In general, however, we believe that the approach that we used remains valid and would still be fit for purpose. There will, however, be several changes in our methodology for the *Strategic Review of Charges 2006-10*. These changes reflect both the lessons we have learned since the last Review and the proposed changes to the institutional framework in the industry. We examine the lessons learned in Chapter 9, and changes to the framework are discussed in Section 2.

2.2 The collection and use of information

2.2.1 The position before 2001

The post of Water Industry Commissioner for Scotland was established in November 1999. At that time there was no structured approach to the collection of information about the performance of the water industry in Scotland. There were clear differences between the three authorities in terms of how they reported the quality of their assets and what they counted as a complaint. In the interim Strategic Review of Charges, we had difficulty in collecting information from the three authorities on a consistent basis. We therefore advised the Minister that we needed to work with the industry in Scotland to agree our information requirements. It was clear that these requirements would need to be carefully defined if we were to ensure that the information provided by each of the three authorities was consistent.

This initiative led to the information project. The project was let to a consortium of Cap Gemini, Ernst & Young, WS Atkins and Yorkshire Electricity. The project focused on creating a Scottish version of Ofwat's June Return. The Scottish version of the June Return is a comprehensive set of financial, physical and performance indicators. It mainly focuses on information relating to the previous financial year, although in some cases it also seeks forward projections. Each line of

¹ For a detailed discussion of the methodology used in 2001, see pages 47 to 104 of the *Strategic Review of Charges 2002-06*.

information requested has a precise and documented definition. We issue these definitions to the industry prior to the submission. The full Annual Return consists of 12 separate sections and comprises 97 tables with more than 20,000 items of both input and calculated data cells.

One of the important strengths of this Annual Return is that it allows us to make robust comparisons with the industry in England and Wales. However, the Scottish version of the Annual Return has to reflect some of the differences in the structure of the industry north of the border. For example, we need to collect information about the Public Private Partnership contracts and about the very many small waste water treatment plants operated by the industry in Scotland.

2.2.2 The approach that we used in 2001

In trial runs of the Annual Return submissions, the three water authorities, understandably, found that it was quite difficult to supply all of the information that was requested. We arranged a series of workshops and worked with the authorities to improve the completeness and quality of the information supplied. Additionally, we asked the authorities to address any gaps in information through Action Plans; these plans set out how the authority intended to complete missing information. The Action Plans spanned a period of four years; some were short term (before April 2001) while others were longer term, lasting up to April 2005.

The *Strategic Review of Charges 2002-06* was based on information supplied in the Annual Returns provided by each of the three authorities in the summer of 2001. This information related principally to the financial year 2000-01. While the authorities still found some of the information quite challenging to provide, the quality and completeness of the information supplied had improved markedly from the initial trial runs.

The Annual Return is the principal information request that this Office makes to the industry. However this Return did not provide all of the information required to complete the Strategic Review of Charges. We used WIC letters to ask for further information about specific issues, including:

- new operating costs resulting from the capital programme;
- spend to save initiatives;
- information about agreements with large customers;
- information about depots, laboratories and office buildings; and
- customer service costs.

We also gained information from customers (this is discussed in greater detail below). The Office also drew extensively on the experience of Ofwat, other utility regulators and third party information sources. These sources were documented in Appendix G of the 2002-06 Review.

2.2.3 Developments since 2001

By the time this Office reaches its final conclusions on the appropriate price levels for the period 2006-10, we will have Annual Return information for five years. The quality of Annual Return information continues to improve.

We began to publish most of the Annual Return in 2003. We expect to publish the entire Annual Return this year. This year will also be the first time that an independent Reporter will scrutinise the information and comment on its accuracy and completeness.

We continue to use WIC letters to collect additional information in a targeted way. The quality and completeness of information supplied in response to these letters also continues to improve.

While we expect that the quality and completeness of information will continue to improve in the next few years, it is clear that the *Strategic Review of Charges 2006-10* will benefit significantly from the foundation that was laid in 2001.

2.3 The level of investment

2.3.1 The position before 2001

Prior to 1999, there was no coordinated approach to the assessment of the investment needs of the water and sewerage industry in Scotland. In November 1999, the Scottish Executive published the *Quality and Standards I* document. This publication outlined the various environmental and public health standards that the industry was expected to meet. It also provided aggregate costs for each investment driver for the period 2000-2002. During 2000, work began on *Quality and Standards II*. This involved each of the three water authorities, this Office, the Scottish Environment Protection Agency (SEPA) and the Scottish Executive. The aim was to identify, at a project level, all the investment that was necessary to comply with environmental legislation and public health standards.

Following the Minister's response to our interim Strategic Review of Charges in 1999 we also worked with the three authorities and the Scottish Executive on an initiative to improve capital maintenance planning within the framework of the *Quality and Standards II* process. There is a clear risk that the desired environmental and public health standards may not be met if the industry does not maintain its assets appropriately. This initiative aimed to ensure that underground assets such as water mains and sewers were repaired, refurbished or replaced in such a way as to maintain the level of service to customers for the foreseeable future.

2.3.2 The approach that we used in 2001

The Scottish Executive launched a consultation document at the end of 2000, inviting stakeholder views on the priorities for investment. The consultation presented three options and provided an indication of how each would affect an average domestic bill. The consultation also sought the views of stakeholders in the following areas:

- whether the same standards should apply throughout Scotland;

- at what speed the underground infrastructure should be improved; and
- at what speed development constraints should be removed and first time connections to the water and sewerage system in rural areas allowed.

The consultation concluded that the middle option should be chosen, but that there should be some additional investment to allow first time connections to the network in rural areas.

We worked with the three authorities to define the projects that were required to meet the priorities that had been established by the consultation. Detailed responses were received from the West and North of Scotland Water Authorities. We received information from the East of Scotland Authority that was sufficient for the cost of the investment to be calculated, but we noted that more work would be required to define the exact projects that would be completed. This information allowed us to begin to consider the optimum phasing of the investment programme. This phasing took account of all deadlines, capital efficiency targets, public expenditure limits and customers' preference for a smooth price profile. We also responded to the concerns of the contracting industry that there should not be large swings in the volume of work available.

2.3.3 Developments since 2001

Although *Quality and Standards II* was the most clearly defined investment programme in the Scottish water industry's recent history, we encountered two difficulties in finalising the detailed list of projects such that we could monitor the delivery and efficiency of the investment programme. The primary difficulty was the lack of specific project detail in the information provided by the East of Scotland Water Authority. The second related to the differences in method used by the three former authorities in defining their investment needs. These difficulties have only recently been resolved.

The Scottish Executive began the *Quality and Standards III* process during 2003. *Quality and Standards III* sought to build on the successes of its predecessor, but also to ensure that there was an even more wide-ranging debate about investment priorities within the industry. There has been a relatively slow start in delivering *Quality and Standards II* and it will be important to consider just how much disruption to local communities and how many projects can be effectively and efficiently managed.

2.4 The views of customers and the level of service

2.4.1 The position before 2001

Prior to 1999, the Scottish Water and Sewerage Customers Council which this Office replaced in 1999 had undertaken an extensive programme of public meetings. The Council also made early attempts to compare the level of service offered to customers by the three water authorities. It dedicated considerable resources to the handling of complaints and to raising awareness about customer service issues. After this Office was established in 1999, we looked to build on the strong consultation programme that had been established by the Council. We also wanted to improve the robustness of the comparison of the level of service provided to customers.

2.4.2 The approach that we used in 2001

We used a range of qualitative and quantitative approaches to understand customers' priorities. These included an extensive consultation programme; a review of complaints and the way in which they were handled; analysis of the approach of other regulators; and two postal surveys.

The Water Industry Act 1999 established a Consultative Committee for each of the three water authority areas. The role of the Committees was to advise the Commissioner on the promotion of the interests of customers in each of the three areas. The Commissioner chaired a number of Consultative

Committee public meetings throughout Scotland; we also invited the local water authority to attend these meetings. The meetings provided a useful forum for discussion about customers' concerns. A particular area of concern in many areas (especially in the north) was the issue of affordability of charges for vulnerable customers. We therefore worked separately with a number of organisations that represent or work with these customers to understand the extent of the problem and what could be done.

We were also keen to ensure that we understood the concerns of non-domestic customers. We undertook two separate initiatives: we set up a Large User Group to discuss the specific issues of the largest customers; and we arranged meetings with a number of representative organisations and trade associations.

A second important source of information about the issues that concerned customers were the complaints that we received from customers and our audits of how each of the water authorities handled complaints. Our Office has a statutory duty to deal with unresolved complaints about the level of service provided to the customer by their water and sewerage supplier. The range of issues raised with us either by telephone or in writing is generally broader than those raised at public meetings. In 2000, we introduced regular audits of the way in which the authorities handled complaints. These audits sought to determine whether the authority complied with its code of practice, and responded in an appropriate, timely and complete way to customers. These audits identified the strengths and weaknesses of customer complaint handling within the authorities and informed some of the recommendations that we made in the *Strategic Review of Charges 2002-06*.

A third important area of work was to look at the experience of other utilities and other regulators. We also sought information from the water authorities about customer debt. This information was important in assessing the scope for competition, the impact of price harmonisation and whether the domestic billing arrangement that was in place at that time was in the interests of domestic customers.

We were also keen to complete some quantitative research. This was completed jointly with the three authorities. The consensus was that it would be useful to test customers' opinions on at least two occasions. It was therefore decided that we should establish a 'Water Panel' of 2,250 members (750 from each former authority). Each of the three separate panels reflected the geography and demographics of that water authority area. We completed two postal surveys before we wrote the Review. These surveys sought views about charges, levels of investment, the priorities for investment and more generally what customers thought about the level of service they received. Results from these surveys were included in the *Strategic Review of Charges 2002-06*.

2.4.3 Developments since 2001

The Consultative Committees created in the 1999 Act were disbanded by the 2002 Act that created Scottish Water. The Water Customer Consultation Panels assumed their function. The Panels have an important role in bringing customer issues to our attention and we are keen to work with them.

Our current intention is to seek to build on the consultation programme and analytical work that we completed for the 2002 Strategic Review. Our work programme for the next two years was outlined in our publication *Our work in regulating the Scottish water industry: Setting out a clear framework for the Strategic Review of Charges 2006-10* (July 2004).

2.5 The potential for competition

2.5.1 The position before 2001

The Competition Act 1998 took effect at the end of March 2000. In the interim Strategic Review of Charges we highlighted the potential risks of competition. We also identified that broadly cost reflective prices were in the general customer interest. Broad cost reflectivity was important because there was a risk that some larger customers may seek to leave the network or to reduce their usage. Either outcome would have resulted in increased bills for all other customers.

2.5.2 The approach that we used in 2001

During 2000 and 2001, there was a great deal of discussion within the British water industry about how competition might develop. A number of smaller new entrants were already seeking to win business. Some larger utility companies were dedicating considerable resources to analysis of the market.

Our approach was two-fold:

- to assess developments in the market; and
- to conduct a detailed analysis of the industry's structure in Scotland and assess where and how competition might develop.

Notwithstanding the considerable debate about competition in the water sector, there did not appear to be a great deal of activity. Indeed, smaller new entrant to the market appeared to be becoming increasingly marginalised. This impression was, however, a little misleading. Larger companies were increasingly seeking to negotiate about the level of service they received and the price they paid. Companies used the threat of 'off-network' solutions to their water and effluent needs to strengthen their negotiating position and to reach 'special agreements' with the authorities. Our observation of this activity suggested that some services and risks were not being correctly priced. This covered the initial cost to connect, the cost of maintaining a back-up supply and the environmental or political risk relating to private discharges or abstractions. We wanted to understand the effect that such deals would have on other customers and therefore requested information from the authorities about the special agreements.

It is in the general customer interest to avoid 'cherry-picking' within natural monopoly industries. Cherry-picking results when a new entrant (who is no more innovative or efficient than the incumbent supplier) offers a lower price to a customer. This could result from poor cost allocation or from the setting of tariffs that are not reflective of the cost to supply.

The approach we adopted considered the value chain of the industry, in terms of both a series of business processes and a series of stages at which value is added. To assist in this analysis we used Michael Porter's Five Forces model and distinguished between 'for the market' and 'in the market' competition.

'For the market' competition can exist where a company can define a business process that could potentially be undertaken on its behalf by another organisation. This may be central to the organisation (for example, a water company contracting out its operations and customer service activities) or peripheral (such as cleaning activities). For the market competition is unlikely to lead to greater choice for the customer, but it may lead to lower prices.

'In the market' competition exists where the customer ends up with a genuine choice of supplier. It can exist only where an activity or asset base can be replicated with relative ease. 'In the market' competition is only likely to exist for final customers if the industry maintains a vertically integrated structure. Policing of transfer prices between elements of a vertically integrated corporation is likely to be a major barrier to entry for a new entrant.

In addition to the value chain analysis, Porter's Five Forces model was used to understand 'in the market' competition. The model suggests that there are five basic competitive forces that characterise any industry. The five forces are as follows:

- Threat of entry – the threat of competitors entering into the market depends on the barriers to entry. Barriers include economies of scale, government policy and capital requirements.
- Intensity of rivalry among existing competitors – rivalry occurs because one or more firms feel the pressure or can see an opportunity to improve position. Factors affecting rivalry include slow industry growth and high fixed costs.
- Pressure from substitute products – products which can carry out the same function as other products

limit the returns of an industry by placing a ceiling on the prices firms can profitably charge.

- Bargaining power of buyers – the ability of buyers to bargain is powerful if, for example, there are low switching costs or where the buyer group is concentrated or purchases large volumes relative to seller sales.
- Bargaining power of suppliers – suppliers exert bargaining power over participants in an industry if, for example, it is more concentrated than the industry it sells to or it poses a credible threat of forward integration.

We applied the results of our analysis to understand the likely implications for customers. This involved additional research into the development of competition in the gas and electricity markets; price trends in the gas and electricity markets; and the discount required to encourage a customer to switch supplier. This analysis was central to our recommendation that the Scottish industry should focus on efficiency and broad cost reflectivity in its pricing. We also concluded that there may be scope for competition in the retail activities of the water and sewerage industry.

2.5.3 Developments since 2001

Scottish Water has made progress in introducing more broadly cost-reflective charging. The Scottish Executive launched a consultation in July entitled '*Paying for Water Services 2006-10*'. The Scottish Executive has also introduced a Bill to the Scottish Parliament, which will establish a framework for competition in customer service and billing. Potential new entrants will have to apply for a license.

2.6 The opportunity for efficiency

2.6.1 The position before 2001

Prior to 1999, no detailed analysis had been undertaken of the efficiency of the water industry in Scotland. At one of the early evidence sessions to the Transport and Environment Committee in 2000, each of the three

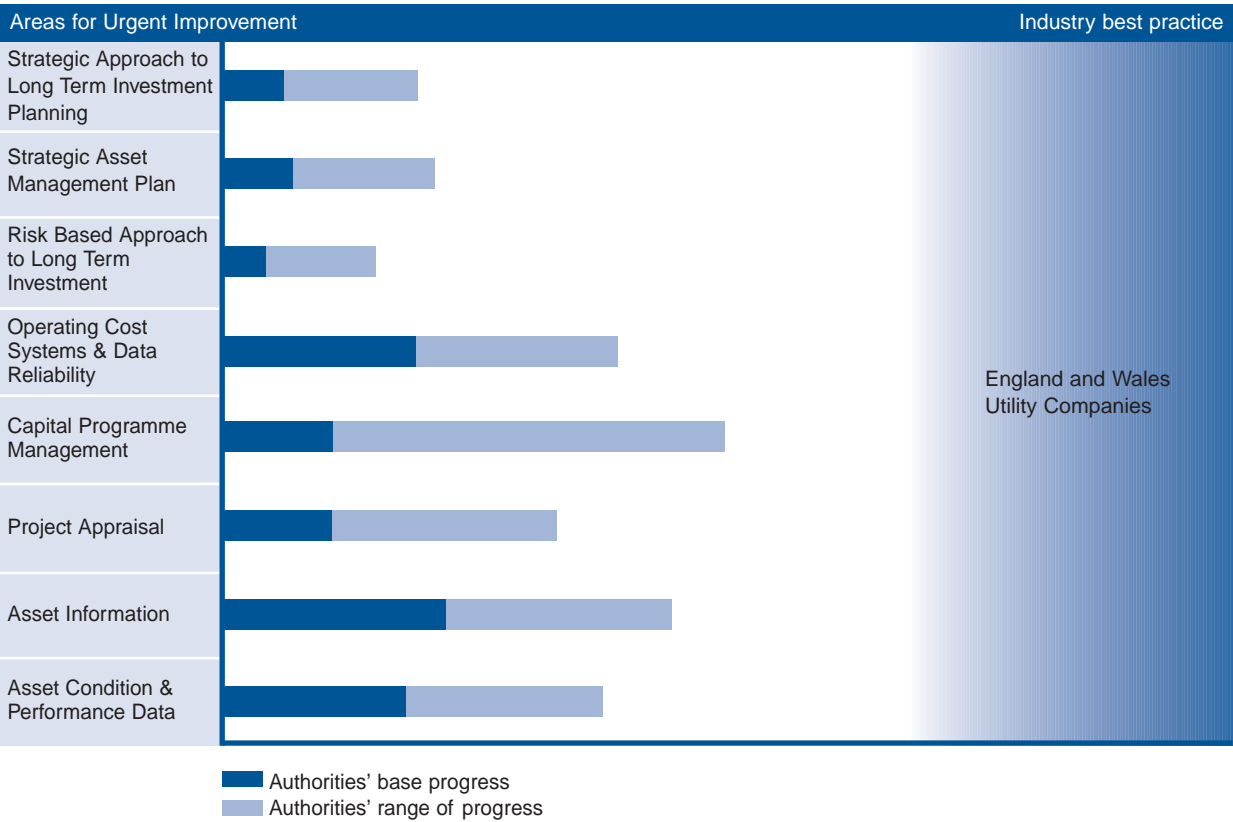
water authorities claimed to have improved its efficiency by 25% since 1996.

We asked each of the authorities to substantiate their claim. Our conclusion was that their method was not robust. We did not believe that the comparison used by the authorities was consistent with an economic definition of an efficiency. The definition that we use is that “an equivalent or better level of service is delivered to customers at a lower cost”. An important consideration is that comparisons are made on a like-for like basis. The authorities’ assessment was of efficiency resulting from a comparison of current costs with a projected budget for the authorities that had been developed before the three authorities were created.

Within the information project (in section 2.2, above) we examined the techniques employed by other regulators in setting efficiency targets. We concluded that Ofwat’s approach was broadly applicable to Scotland. However, we had to adjust the approach to reflect Public Private Partnerships and the large number of small waste water treatment plants operated by the Scottish industry.

We also needed to determine how best to approach an assessment of capital efficiency. We asked W S Atkins and Yorkshire Electricity to assess the asset management processes of the three authorities relative to best practice. Their conclusions are shown in Figure 2.1.

Figure 2.1: A view of the three authorities’ position compared with industry best practice



Early results from the information project suggested that there would be considerable scope for efficiency, both in operating costs and capital expenditure. Given the size of the capital programme that was being discussed in *Quality and Standards II*, this scope for efficiency was likely to be important in ensuring that increases in customer charges could be restricted to an acceptable level.

2.6.2 The approach that we used in 2001

We used benchmarking to establish the potential scope for efficiency in both operating and capital costs. The information project allowed us to compare levels of performance and cost in Scotland with the companies south of the border.

The first step was to assess a level of base operating costs. This is the level of costs that would be required simply to maintain the current level of service. The base level of operating costs is established after adjustments for one-off items or events. Examples include the costs of dealing with the 'Millennium Bug' or unusual weather conditions. Costs can increase to the extent that the level of service is improved or a greater number of customers are served. Efficiency targets are applied to both the base level of operating costs and to any additional operating costs allowed for improvements in the level of service to customers.

Once we had established the base level of operating costs for each of the three authorities, we conducted a number of high level benchmarking exercises to compare the water authorities' unit costs with those of the companies in England and Wales. We then identified appropriate comparator companies for the former water authorities. This was based on factors such as the size of the customer base and the ratio of infrastructure length (mains and sewers) to the numbers of customers.

We closely followed Ofwat's 'top down' approach to setting operating efficiency targets. Adopting such an approach allows a more complete and objective assessment of performance. There is no attempt to identify particular cost elements by building up a total,

item by item. We adopted this approach for several reasons:

- Ofwat had recently conducted a price review in England and Wales;
- The authorities did not have sufficiently detailed cost allocation in place to facilitate a 'bottom up' approach; and
- We wanted to avoid any suggestion that we were dictating how targets should be achieved.

Ofwat uses econometric modelling in assessing relative operating efficiency. Details of Ofwat's operating efficiency models were published in Ofwat's technical paper *Assessing the scope for future water and sewerage efficiency* (April 1998). They were updated in Regulatory Director letter RD2/99 (January 1999).

These econometric models allowed us to benchmark the Scottish water industry against that of England and Wales. The models were designed to take account of many of the differences in demographics and geography of Scotland compared with England and Wales. However we did adjust the models to ensure that we had taken full account of all unavoidable cost differences.

We set the actual operating cost efficiency targets relative to the expected level of efficiency of the comparator companies in 2005. There was a clear gap in efficiency between the industry in Scotland and the comparator companies. We therefore sought to establish an appropriate target that would be challenging but achievable. To establish such a target we looked at the performance of the companies relative to the leading company over a five-year period. We observed that, on average, a company closes 85% of the gap to a leading company during a five-year regulatory period. On this basis, we decided that an appropriate and achievable target was that the industry in Scotland should close 80% of the gap to the comparator companies by 2006.

Our analysis of efficiency targets also took account of the different levels of service provided to customers in Scotland and in England and Wales. The 'top down' nature of the models meant that we assumed that improvements in water quality should not require additional operating costs. We did allow some new operating costs to reflect the costs of additional sewage treatment.

One important factor that we also took into account was the Competition Commission's view that a regulator should not rely solely on one method for calculating the companies' relative efficiency. We therefore developed a detailed alternative model. This model used a different approach and different information. The efficiency gaps assessed by this model were broadly similar to those calculated using the Ofwat methodology.

Efficiency in capital expenditure is more difficult to assess and to monitor than efficiency in operating costs. We divided the planning and delivery of capital expenditure into four distinct areas. This approach simplified the assessment of relative performance in discrete areas. The potential for efficiency would therefore be the sum of the efficiency identified at each of the four stages:

- Strategic asset management – these are savings that can be made by not spending money that was allocated. In terms of efficiency this must be done without sacrificing output. An example would be replacing pumps every five years as opposed to every three years.
- Programme planning or investment appraisal – these are savings that result from finding the most cost-effective way to deliver objectives. Investment appraisal questions whether a project delivers its objectives in the most cost-effective way.
- Procurement – these are savings that arise from improved procurement of capital projects. This would include the initial contract, management of delivery and commissioning of the asset. We are able to use the information supplied to us in the

Annual Return, and similar information provided to Ofwat, about the costs of standardised capital projects in order to assess the potential for savings.

- Innovation – these are savings that come from 'doing it the new way'. The Babbie Report² into lower cost technologies and processes in the water industry was a key input in this area.

Our review of the approaches used by regulators in assessing capital efficiency suggested that Ofwat's approach could be modified to take account of the situation in Scotland. This had two advantages. Firstly, adapting the Ofwat approach would help ensure that we would not double count the potential for efficiency. Secondly, we had most of the information that we would need in order to make a robust assessment of the scope for capital efficiency.

Unfortunately, we were not able to use the Ofwat econometric models because we did not have sufficient information about the performance of assets in previous years. We therefore had to rely on comparisons of the cost base information supplied to us by the three authorities and to Ofwat by all of the regulated companies. This cost base allows us to assess the scope for efficiency in procurement. The authorities' cost base information was for 2001. The most recent equivalent information from the companies south of the border was from 1998. We assumed that the companies south of the border would have continued to improve their procurement costs by 2.5% nominal a year for the three years after 1998. We further assumed that this rate of improvement would continue until the end of the regulatory period in 2005-06.

The scope for improvement through innovation was taken from the Babbie report.

Identifying the scope for efficiency in strategic asset management and programme planning is more difficult. We assessed the scope of improvement achieved by the companies south of the border that was not explained by procurement or innovation. We conducted structured interviews with a number of companies about how they

² Babbie Environmental, Report and opinion on the scope for widescale adoption of lower cost new technology and practices in the water industry, Ofwat, 1998

analysed capital expenditure, how this had changed, and the savings they had realised. We were also able to draw on the W S Atkins and Yorkshire Electricity assessment of the asset management processes of the three authorities relative to best practice.

This approach is summarised in the following table:

Table 2.1: Methods for assessing capital efficiency

Area identified for efficiency	Tools
Strategic asset management	Information project, industry consultation, benchmarking
Programme planning (appraisal)	Information project, industry consultation, benchmarking
Procurement	Cost base analysis
Innovation	Babtie Group report

We were aware that there was a considerable efficiency gap in the delivery of capital investment. On balance we considered that it would be better to set the target on the same basis that we had used for operating expenditure. The capital target was therefore set at 80% of the gap in efficiency between the industry in Scotland and the Ofwat benchmark (not the leading companies). We also decided to phase the capital efficiency targets.

We applied the capital expenditure efficiency target to 92% of the Quality & Standards capital programme, as approximately 8% accounts for capitalised operating cost. The operating cost efficiency targets were applied to the capitalised operating cost.

2.6.3 Developments since 2001

The information available to us and to the Scottish industry has continued to improve. This will extend the scope of our future analyses of the scope for efficiency.

Useful work has also been carried out by UKWIR, involving the industry and its regulators, to assess the need for capital maintenance.

2.7 The calculation of a revenue requirement

2.7.1 The position before 2001

Prior to 1999, there was no strategic approach to the assessment of the revenue needs of the industry in Scotland. Each year the three water authorities had to agree their scheme of charges with the Scottish Water and Sewerage Customers Council. Long-term investment needs and the impact of increased borrowing were not modelled in detail and, it would seem, their full implications were not understood.

The three authorities took account of the level of increase in tariffs they thought would be acceptable; the investment programme they would be asked to deliver by Government; and the public expenditure available.

In 1999, the Scottish Executive asked this Office to conduct an interim Strategic Review of Charges covering the 2000-01 and 2001-02 financial years. We developed a financial model to allow us to consider the impact of different levels of borrowing and capital expenditure. Our analysis showed that each of the three authorities would need a significant increase in its revenue if it were to be able to meet its current capital expenditure obligations. It also became clear that the need for capital expenditure would continue for the foreseeable future.

2.7.2 The approach that we used in 2001

The main aim of any price review is to establish an appropriate level of prices. It is important that the outcome is consistent with the medium and long-term needs of the industry and with the interests of customers. We do not want to swap present problems of underinvestment for future financial problems. This would not be in the interests of customers. The financial model that we developed for the *Strategic Review of Charges 2002-06* allowed us to vary all of the potential financial inputs.

We used the financial model to determine an optimum profile for revenue. Our aim was to establish a series of revenue caps for the 2002-06 period such that customers could expect future revenue increases to be held below the rate of inflation – in the absence of any significant tightening of environmental and public health standards and if the industry improved its efficiency.

The model was reviewed and improved by Cap Gemini Ernst and Young and was audited by Scott Moncrieff, a leading firm of Scottish accountants.

2.7.3 Developments since 2001

In the *Strategic Review of Charges 2002-06* we set challenging but realistic targets for Scottish Water. Scottish Water's recent performance confirms that the targets were realistic and achievable. There is therefore a clear possibility that customers can look forward to an extended period of stable prices in real terms.

While we have confidence in both the targets and the revenue caps that we set for Scottish Water, we recognise that we should ensure that the calculation of the revenue caps can be compared with those of the companies in England and Wales with greater ease:

- **Comparability** – most other utility regulators establish an appropriate level of revenue by using a regulatory capital value (RCV). The RCV earns a return, and depreciation and allowable operating costs are added to determine the level of revenue allowed to a company. The RCV is increased if capital expenditure in a year is greater than the depreciation charged. We will discuss switching to the RCV method of price setting in our consultation on price setting.
- **Funding underperformance** – under the approach used for the Strategic Review of Charges 2002-06, if Scottish Water were unable to achieve the efficiency targets assumed in the revenue cap, then customers' prices would increase in the future. In future we would be keen to ensure that customers are not exposed to this risk.

- **Transparency** – we agree that it would be desirable to make it clearer how much investment is paid for by current customers, and how much is being deferred to future customers through debt.

2.8 The application of a risk analysis to the proposed revenue caps

2.8.1 The position before 2001

There was little, if any, discussion about either operational or financial risk before 2001. If a water authority ran short of funds, it could either increase its creditors or delay some of its capital maintenance. Prior to the introduction of the Annual Return, it was impossible to know whether or not the authority had delivered the outputs included in its corporate plan, and if so to what extent.

2.8.2 The approach that we used in 2001

By early 2001, it was evident that there was significant scope for efficiency in the Scottish water industry. It was also clear that to achieve this efficiency would mean halting and reversing a trend of worsening performance that could be traced back to at least 1996. Increased investment was required to meet the *Quality and Standards II* obligations. There was a clear concern that if prices were set too low, and if the industry did not achieve its efficiency targets, it may end up borrowing too much. The result would be that we had swapped a problem of under investment with one of a large debt burden. This would worry the Scottish Executive both from the standpoint of managing its own budget and because of the longer-term implications for customers. It is not clear that customers are prepared to pay a lot more to keep the industry in the public sector.

In the commissioning letter for the *Strategic Review of Charges 2002-06* we were requested by the Scottish Executive to complete a formal risk analysis. We were pleased to complete this analysis as it focuses on the assumptions behind the efficiency targets for operating and capital expenditure. In assessing the scope for efficiency we had relied on comparisons with England

and Wales. As such we knew that achieving the efficiency targets would depend on significant cultural change within the industry. The range of the potential performance outcomes could be observed from the history of the companies south of the border. By undertaking a formal risk analysis we were able to increase our own confidence in the analysis that we had completed.

Our financial modelling had shown that customer charges in the future depended on taking a prudent view on borrowing. We were aware that any underperformance on either operating or capital efficiency targets would increase borrowing. Not only would this be bad for customers in the medium to long term, it would also breach the public expenditure constraint included in the Minister's commissioning letter for the Strategic Review of Charges. The risk analysis demonstrated that the revenue caps were consistent with the aims of the Review.

2.8.3 Developments since 2001

We would expect to conduct a similar risk analysis for the *Strategic Review of Charges 2006-10*. We believe that the risk analysis conducted for the last Review was thorough and robust and we have no plans to make material changes to it.

Since 2001, the industry improved considerably its understanding of the condition and performance of its assets. As a result, it has become more aware of the risks of asset failure. Such new awareness should not be confused with increased risk – indeed, knowledge that a risk exists allows it to be managed, so results in an actual reduction in the total risk. We are pleased to note the increased awareness of risk within the industry and welcome the attempts by the industry to improve its management of risk.

Section 1: Chapter 3

Outcome of the Strategic Review of Charges 2002-06

3.1 Introduction

The focus of the *Strategic Review of Charges 2002-06* was to set revenue caps that were consistent with a sustainable water industry in the public sector. Our analysis showed that to ensure a sustainable water industry in the public sector it would be necessary to take action in the following areas:

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

We remain of the view that the Review addressed all of these issues, although inevitably there were some unexpected consequences of the actions we recommended. An example of this is the size of the percentage increases in bills for some non-domestic customers. While we recognise the concerns of these customers, it is not clear that we could have acted differently. We have to balance the interests of all customers, and every customer who pays below the average cost of supply for the service they receive is gaining at the expense of other customers. After completing the Review, we approved and supported the move to harmonise charges immediately for businesses across Scotland. Our analysis had shown that the impact would be less adverse and fewer customers would be affected by a swift movement to remove anomalies that existed between various parts of Scotland. It is important to remember that even if the difference in tariffs had been reduced by half, water

customers in the north would still have been paying some 40-50% more for the water they consumed.

We accept that there should have been more effective communication about the changes in tariffs and their implications. However, the Strategic Review of Charges did highlight the impact that harmonisation and more cost-reflective charging would have on a number of different types of business.

3.2 The level of revenue

In the Strategic Review of Charges, we showed that the Scottish industry had spent considerably more, in the past several years, than it had received in customer charges. We explained that this was a problem because there was a likelihood that sustained investment at current levels would be required for the foreseeable future. The Scottish Executive's recent Consultation document *Investing in water services 2006-10* confirms that investment in the next regulatory period will certainly be no lower than in 2002-06. It is also clear that investment at these levels will continue for the foreseeable future.

Continuing to increase net borrowing significantly to eliminate the gap between revenue and expenditure will only make matters worse. Borrowing may delay a price increase, but it will increase future bills by the interest payable on any additional borrowing. It will also, as we explained to the Finance Committee inquiry in 2004, expose the industry to greater financial risk. This is not in the customer interest. In providing our advice on the level of revenue, we took into account a clear customer concern that the industry had "to get its house in order" and that, as a commodity business, "it should learn to live sustainably without real increases in price". We believe that the revenue increases that were implemented will ensure that we have a more sustainable industry in the future and that customers will see the benefits in steady prices. If Scottish Water continues to make progress in reducing its costs, it is possible that prices will not need to increase in real terms.

The principal output of a Strategic Review of Charges is a recommended revenue cap. 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 the importance that we attached to a recommendation that executive directors were incentivised to meet customer service, environmental and public health outputs within the revenue cap. Meeting those outputs would require management to meet targets at an aggregate level rather than meet every target individually. In other words, management could outperform on efficiency targets and do less well on contributions from new business and still be in a good position to meet the agreed outputs. As such, when we set the revenue cap and included clear targets for efficiency, assumed contribution from new business and the proceeds of property disposals, these were a means to an end, rather than an end in themselves. It is not in the customer interest that management is judged against the means to an end, rather than against the achievement of agreed levels of service for customers.

3.3 Challenging but achievable efficiency targets

The *Quality and Standards II* process highlighted that there was a need for increased investment. It was also likely that some of this investment in higher treatment standards would result in higher operating costs. There was therefore a significant upward pressure on the prices faced by customers.

In the Strategic Review of Charges we explained that the need for increased revenue could be markedly reduced by an improvement in the operating cost and capital expenditure efficiency of the Scottish water industry. Our analysis showed that the level of efficiency of the Scottish industry had been declining at a time when the industry south of the border had been significantly improving its efficiency (see Figures 3.1 and 3.2).

Figure 3.1: Trends in base operating costs since 1996-97¹

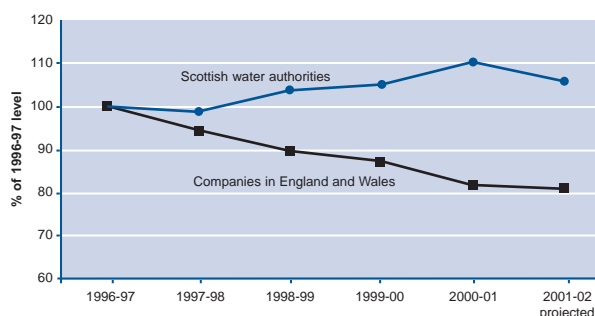
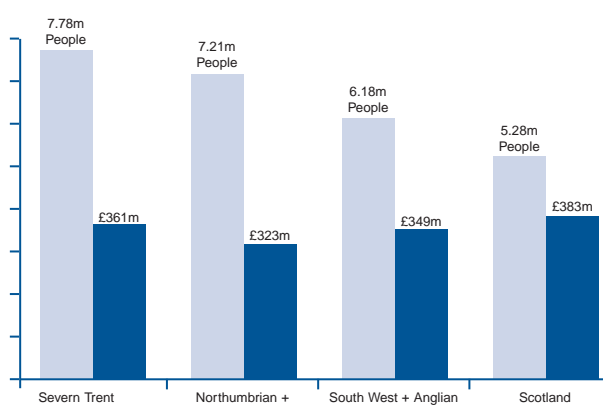


Figure 3.2: Comparison of operating expenditure and population served 1999-00



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. In this regard it is important to define what we mean by 'efficiency'. Cost cutting is not efficiency. Efficiency is about reducing costs and maintaining or improving the levels of service to customers.

We set three separate efficiency targets to cover operating costs, capital expenditure and the potential savings resulting from the merger of the three authorities. These efficiency targets were challenging

¹ It is important to note that there have been significant improvements to drinking water quality and environmental compliance during the past five years.

but achievable. After two years, we can see real progress in reducing operating costs. Scottish Water is also confident that the creation of Scottish Water Solutions will improve both the timeliness and efficiency of the delivery of capital investment.

Our advice on revenue caps also allowed some £200 million in 'spend-to-save'. The aim was to ensure that Scottish Water would be able to meet all of its restructuring costs without delaying investment or improvements in customer service.

The total annual value to customers if Scottish Water achieves the efficiency targets is in excess of £400 million a year by the end of the current regulatory period in 2005-06. This would result in customers' bills being some 40% lower than they would otherwise have been. These efficiencies are important because a sustainable water industry needs to be affordable both now and in the future.

3.4 Further improvement in customer service

In the Strategic Review of Charges we noted the improvement that there had been in customer service since 1996. Improved Guaranteed Minimum Standards are in place, although there is some way to go to improve compliance. Only a relatively small number of customers have cause to complain about their water and sewerage service.

However, when they do have cause for complaint, the consequences of service failure can be serious. Our public meetings both before and after the Review continue to show that an increasing number of customers believe that they should have a choice in supplier. In addition, an increasing number of customers are comparing the service they receive with other utilities such as electricity, gas or telephone. Improvements in customer service are likely to be an important element in any response to retail competition.

The Review outlined in detail why we considered that competition should pose only a limited threat to Scottish

Water. We suggested that Scottish Water could mitigate the risk of competition by introducing a system of harmonised and broadly cost-reflective tariffs. It was clear, however, that Scottish Water may lose revenue relating to its customer service and billing (retail) activities. These activities constitute around 15% of total revenue, so even if a significant percentage of this revenue were lost, there would be only a relatively minor impact on the rest of the business.

Analysis of the development of retail competition in other utility industries suggested that Scottish Water may lose a significant number of customers, but that this was likely to take time. The experience of other incumbents facing the opening of their market to competition was that customers are often prepared to pay for improved customer service and accurate billing.

It was therefore important that Scottish Water improved its customer service. However, the risk of losing retail customers because of poorer service needs to be put into context. If Scottish Water lost half of its retail customers by value, this would result in an approximate reduction in the total revenue available to Scottish Water of £75 million. Even if Scottish Water could reduce this customer loss by half, because of improved customer service, the total benefit to Scottish Water would be less than £40 million a year. While this saving is clearly worth having, it is not significant relative to the value of the cost efficiencies that have been identified.

If the Scottish Executive's current proposals for competition are approved by the Parliament and a retail subsidiary company is established, this would change the priorities of parts of the currently vertically integrated Scottish Water. The retail subsidiary would sensibly focus on improving customer service, while the remainder of Scottish Water should continue to focus on improving its efficiency.

3.5 Harmonised and broadly cost-reflective tariffs

When the Minister for the Environment, Sport and Culture, Sam Galbraith, MSP announced his intention to

merge the three water authorities to the Transport and Environment Committee in February 2001, he highlighted the harmonisation of charges as an important benefit. There were clearly significant anomalies in the charges that resulted from the three-authority model. It is, for example, much cheaper to supply Dundee than North Fife, yet charges were much higher in Dundee. It was more expensive to serve south Ayrshire than the western Central Belt, yet charges were the same.

We considered that a harmonised charge across Scotland was equitable for all customers. To charge otherwise would have been to sanction a postcode lottery in charges for water. It would also break with normal practice in the pricing of utility services – ie to harmonise prices across the whole of a company's area.

There has been some discussion about our recommendation that charges for businesses should also be harmonised across Scotland. We considered that this was important for the following reasons:

- The merger of the three authorities only made sense if cost savings, investment prioritisation and a single management structure were to be introduced. This would remove the justification for differential pricing for the three former areas. The choice therefore is between wholly cost-reflective charging (which will disadvantage the smallest and most rural) and fully harmonised charging.
- Businesses, like households, should not be asked to pay more solely because of their location.
- The distinction between some households and non-domestic customers was blurred, for example people who work from home, farms and crofts, owners or managers with accommodation in hotels or on school and business sites.

My view remains that it would have been difficult for Scottish Water to defend different pricing regimes in different parts of Scotland. We accept that there was probably insufficient debate about the impact on

customers in the former east and west areas. In this regard, the Scottish Executive's consultation *Paying for water services 2006-10* should improve customers' understanding of the alternatives.

When we began to examine the costs incurred by the three authorities in detail, we noted that each of the three authorities allocated costs to activities quite differently. It was also clear that there were considerable differences between the authorities and the companies south of the border. We concluded that there was a need to understand the whole-life costs of water and waste treatment, operating and maintaining the water and sewerage networks and customer service and billing.

There was and still is a lot of talk within the industry of the competitive threat posed by 'common carriage'. Common carriage is where a third party supplier can request the owner and operator of the water mains to accept treated water into the system in order that the third party supplier can take a similar amount of water out of the system to service a customer. In theory, if the price for conveying water is the same as the averaged cost, the incumbent should be happy to provide this service. The risk in reality is that the third party can be more effective either at treating water or in serving customers and can therefore gain competitive advantage. However, this does bring to light the need to price the use of the system correctly. The consequence of incorrect pricing will be an increase in 'cherry-picking' and an increase in prices for those customers who either choose or have to remain with the public supplier.

At the Strategic Review of Charges, we were concerned that Scottish Water would be vulnerable to challenge from new entrants if its decisions on tariffs were perceived to be inconsistent. The tariff structure did not reflect the economic costs of supply and, as a result, was sending inappropriate signals to customers. For example, how could it be possible to justify providing a service to a customer for less than the cost of billing that customer? And why could a new entrant not request a similar price from a similar customer in a similar area?

We still believe that a level of risk remains, although the more broadly cost-reflective charges that have now been introduced have helped. In our view, there are still issues concerning the pricing of back-up supplies and for the largest occasional users of water. The balance between sewerage and trade effluent charges will also need careful consideration.

As we gain a fuller understanding of Scottish Water's costs, it is likely that our views on the appropriate balance between fixed and variable charges may alter. However, we believe that the moves that have been made to date are in the right direction and that as a result Scottish Water will be able to meet competition on a level playing field. Our view remains that it is in the general customer interest to have more broadly cost-reflective tariffs.

3.6 Improved regulation and financial control

Over the past four and a half years we have dedicated significant resources to establishing a robust and objective regulatory reporting regime. We were fortunate that we could draw on the information contained in the Annual Return to write the *Strategic Review of Charges 2002-06*. This was the first time that such standardised information had been available.

In the past two years we have made a considerable effort to improve further the overall quality of management information. This will be crucial to improving the financial and customer service performance of the industry.

In the Review we commented on a need for the financial control and management of the industry to be improved. We are pleased that we have seen significant efforts from Scottish Water to improve its financial systems and its understanding of its costs. This is important because a detailed understanding of where costs are being incurred is fundamental to a sustainable reduction in operating costs.

The Scottish Executive's proposals to establish a framework for retail competition is also to be welcomed, as the experience in other utilities suggests that clear legal and accounting separation would probably highlight a number of areas of cost that do not add value to customers. The proposals are in line with our advice in the Review about the separation of activities. It is important to note that this separation is likely to benefit all customers, not simply those who are able to switch suppliers.

3.7 Improved performance monitoring

Monitoring performance is central to regulation. This explains why we sought ministerial approval for the annual reports on the performance of the industry in Scotland and for a joint project with the quality regulators to agree how the outputs of the capital investment programme should be monitored. Increased information about performance is only valuable if, as a result, customers receive a better level of service or the costs of the industry are sustainably reduced.

Performance monitoring has developed significantly in the two years since we published the *Strategic Review of Charges 2002-06*. This monitoring takes two forms: the on-going collection and analysis of information; and the publication of annual reports on:

- costs and performance;
- investment and asset management; and
- customer service.

These reports provide objective analyses of the current performance of the industry in Scotland. Their message is clear: that there is significant scope for improvement. This message will, of course, not be popular with the senior management of Scottish Water; however, our monitoring would suggest that in a few years time these reports will serve as useful evidence of the improvements and better value for money that have been achieved.

We believe that our monitoring of performance has already brought results. In its second year, Scottish Water performed much better than initial drafts of its business plan had suggested would be possible. Our monitoring of the capital programme will also ensure that we can manage the transition from the *Quality and Standards II* to the *Quality and Standards III* period effectively. This will ensure that there will be no question of customers paying twice for the same promised improvement.

We are also continuing our monitoring of complaints and consultation with customers to inform the next Strategic Review of Charges and to improve current levels of service.

3.8 Better governance

We believed that better governance would be vital if the performance of the Scottish industry was to improve. It is therefore encouraging that the Scottish Executive has adopted many of the recommendations that we made at the last Review.

We made five principal recommendations at that time. These recommendations, and the current position, are outlined below:

Recommendation:

There should be 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.

Current position:

The Scottish Executive is introducing a much clearer regulatory framework. The current preparation work for the *Strategic Review of Charges 2006-10* is consistent with this new regulatory framework. Ministers will take clear decisions on the levels of investment and the investment priorities. They will also provide guidance on how customers should pay for water and where they want to see cross-subsidies.

Scottish Water will have to draft a business plan that takes full account of the guidance from Ministers and outlines their strategy objectives and views on prices for the next regulatory period. This business plan will have to be approved by the Board. The Board will have to present this plan to the economic regulator. Ministers will use a first draft of this plan to inform the guidance that will underpin the second draft.

The economic regulator will consider the information provided by Scottish Water in its Annual Return, its other information submissions and its second draft business plan alongside representations from stakeholders in determining the minimum level for charges that is consistent with the guidance received from Ministers.

Recommendation:

There should be 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.

Current position:

The Board of Scottish Water has eight non-executive members. These members bring extensive experience of different business sectors and sizes. In particular, they have significant expertise in utilities, asset management and finance. The Board can also draw on important expertise in large change programmes and human resource issues.

Recommendation:

The right balance should be struck between executive and non-executive directors. The Board is crucial in supervising the drive for efficiency.

Current position:

There are eight non-executive and five executive members of the Board.

Recommendation:

There should be transparent and appropriate incentives and penalties for executive board members and for senior management to ensure that the right calibre of professionals is attracted to the industry.

Current position:

Senior management can earn bonuses. The remuneration committee of the Board sets these bonuses based on performance criteria established at the start of the year. In Scottish Water's annual report last year, information was provided about how individual bonuses had been calculated.

There may still be room to improve the transparency of the incentive system. Best practice would suggest that the performance measures that will be used to determine bonuses will be published in advance and should be independently measurable and verifiable.

Recommendation:

There should be clear setting of the risk profile by the owner, followed by management of risks by the Board to the criteria established by the owner.

Current position:

The strengthened governance and regulatory framework described above should ensure that this recommendation is met.

It is encouraging that the Scottish Executive appears to be learning from the experience of other utilities and the water industry south of the border. There has been a significant improvement in the value for money offered by the electricity and gas companies in the past ten years.

There are two principal reasons for this improvement:

- Regulation has encouraged comparative competition and helped force costs down by setting strict caps on revenue; and

- Competition has been effective in reducing costs within the regulated monopoly part of the business. It has also driven improvements in the level of service offered to customers.

There have been a number of quite high-profile failures in utility businesses. Independent Energy, for example, went into receivership because of failings in customer billing and service. It is therefore to be welcomed that the Scottish Executive wants to introduce a strong licensing regime.

The improvements to corporate governance are also to be welcomed. Effective corporate governance is rarely noticed, but failures become apparent very quickly and often with negative implications for customers (and owners).

We were pleased that the Water Industry (Scotland) Act 2002 limited the role of the Water Industry Commissioner for Scotland to the promotion of the interests of customers of the core business. This amendment was made after the Review was published. We believe that this change was in the interests of customers. We recognise that non-core activities may bring value, but evidence from south of the border is that they also bring risk. Moreover, the potential profit from new business is not significant, particularly when compared with the potential gains from achieving the efficiency targets.

In the Review we showed that diversification into other businesses appears to have added limited value to shareholders and that many companies are now looking to divest these activities and return to their core business. Investors also appear to favour companies that are sticking to their core business. We continue to believe that the Scottish industry should avoid the mistakes made by the privatised water industry and that new business opportunities should 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. We understand that in the new competitive environment there may be a case for providing some limited value added activities to key retail customers; however, 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.

A good example of a company refocusing on its core business 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. Analysis of this development suggests that there are three main reasons why Welsh customers will benefit from the new approach:

Focus on costs

The reduction in the cost of capital has had a high profile. From a Scottish viewpoint, it is equally impressive that 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.

Focus on core activities

Limiting 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 costs.

Incentive to management

It is clearly in customers' interests that management is working primarily to deliver the customers' priorities. The alignment of management bonuses with the promised reductions in bills is also a very positive step.

Although the overall model may still not be appropriate for Scotland, it still has clear relevance in the context of the Scottish water industry. At the time of the Review, it was certainly not possible to talk about reductions in average Scottish Water bills during the regulatory period. However, our ongoing monitoring of performance suggests that it may be possible to talk about real reductions in the next regulatory period.

Section 1: Chapter 4

Resource accounting and the Strategic Review of Charges 2002-06

4.1 Introduction

There was considerable debate before the Parliament's Finance Committee about the impact that the introduction of resource accounting may have had on the prices paid by customers of Scottish Water. We believe that the introduction of resource accounting did not impact on the prices paid by customers. Indeed, the introduction of resource accounting led to increased scrutiny of the value of assets owned and the depreciation policies used by the industry. This will have contributed to the progress of the past few years towards a more sustainable public sector water industry that can continue to meet the expectations of customers.

Prior to 1996, the Regional and Island councils were responsible for water and sewerage services. When the three authorities were established in 1996, customers were to pay for water and sewerage services to the new authorities. The Government decided to phase in charges for sewerage to households. This transitional scheme lasted for three years. In the first year household paid a third of the applicable sewerage charge, in the second year two-thirds and in the third year the household was liable for the full charge. The Government paid the balance of the sewerage charge to the water authorities in the form of a grant.

The water authorities were also provided with a borrowing consent. This External Funding Limit (EFL) was a permission to borrow and was scored as public expenditure.

In the first three years after the water industry was reorganised, the water authorities had three sources of funds:

- charges from customers;
- grant from Government (Domestic Sewerage Transitional Relief) and capital grants; and
- borrowing from Government.

The Water Industry Commissioner for Scotland was established in 1999. In 1999, the authorities no longer received the transitional relief from Government and their resources came either from customers or from Government in the form of new borrowing.

Funding of the industry prior to the *Strategic Review of Charges 2002-06* is outlined in Table 4.1.

Table 4.1: Funding of the water industry 1996-97 to 2000-01

Scotland	1996-97	1997-98	1998-99	1999-00	2000-01	% change 1996-2001
Water	£283.8m n/a	£301.2m 6.1%	£321.5m 6.7%	£337.7m 5.0%	£393.2m 16.4%	38.5%
Waste water	£148.6m n/a	£186.6m 25.6%	£245.3m 31.5%	£299.5m 22.1%	£360.7m 20.4%	142.7%
Transitional relief	£90.5m n/a	£59.7m (34%)	£29.7m (50%)	£0m (100%)	£0m n/a	(100%)
Other	£1.9m n/a	£0.91m (52%)	£0.91m 0%	£2.3m 153%	£0m (100%)	(100%)
Borrowings	£182.1m n/a	£166.7m (8.5%)	£165.4m (0.8%)	£212.6m 28.5%	£208.8m (1.8%)	14.7%
Capital grants	£37.6m n/a	£1.6m (95.7%)	£3.2m 98.7%	£5.9m 85.6%	£2.8m (52%)	(92.5%)
Total	£744.5m n/a	£716.7m (3.7%)	£765.9m 6.9%	£857.9m 12.0%	£965.5m 12.5%	29.7%

When the three water authorities were created, the Treasury commuted some £700 million of a total of £1,700 million of local regional council debt relating to water and sewerage activities. This left £1 billion debt on the balance sheets of the three water authorities. By 2001, this debt had grown to over £1.9 billion. Interest charges accounted for just under 17% of customer revenue.

The three authorities did not examine the long-term effects of increasing debt at such a rapid pace. An increased EFL allowed price increases to be deferred – there was no assessment of the impact of this decision on customers' bills in the future. Moreover, under any reasonable assessment of the industry's asset base, debt was increasing much faster than the economic value of net new investment.

By the end of 2000, when we began to consider the potential revenue needs of the industry in Scotland to meet the standards that were likely to result from the

Quality and Standards II process, it was clear that there would have to be a more prudent balance between the charges paid by customers and new debt. Moreover, as outlined in the previous chapter, we had identified that there was considerable scope for efficiency in the industry.

We also identified that realising these efficiencies would require a significant cultural change. Our analysis therefore considered the likelihood of the Scottish industry failing to comply with the public expenditure constraint that was likely to be allowed by the Scottish Executive. We therefore conducted a series of risk analyses to examine the relationship between under- or out-performance of our efficiency targets for operating and capital expenditure at various levels of revenue and public expenditure. Our analysis attempted to determine, as objectively as possible, the degree of risk faced by customers.

4.2 Resource accounting

4.2.1. Background

It is important to understand the two principal methods of keeping track of income and expenses in any public or private organisation. There is the resource based (or 'accrual') accounting method and the cash-based method. If implemented consistently, these two methods should only differ in the timing of when transactions are recognised in the organisation's accounts.

Under the accrual method of accounting, transactions should be recorded, as far as possible, in the financial statements for the accounting period in which they occur, and not in the period in which any cash involved is received or paid. Accrual accounting recognises the cost of using a fixed asset or an intangible asset such as a brand by an accounting charge such as depreciation¹ or amortisation². This cost is recognised when the benefit is used, not when the asset was purchased. Under the accrual system, the asset's use has a cost in each year.

Accrual accounting relies on the 'matching' principle. The matching principle requires revenues earned by an organisation during an accounting period to be matched with the expenses incurred in earning those revenues during that period. The difference between revenues and expenses is the profit earned or the loss incurred during the period of reference.

In contrast, cash accounting recognises revenue or expenses when the cash is paid or received. As such, financial statements produced under the cash basis of accounting should be very simple. They cover only receipts and disbursements made in cash, together with the corresponding opening and ending cash balances. Cash accounts exclude all assets and liabilities that are non-cash charges.

Consequently under the cash accounting system a cost may be recognised before the benefit is received. The purchase of an asset that was expected to provide useful service over a number of years would be recorded in the year it was purchased. However, its use in subsequent years would then be 'free'.

4.2.2. The introduction of resource accounting by the UK Government

Cash-based accounting was originally used in the public sector to monitor the use of public cash funds such as tax payments and investments made in cash. Such pure cash accounting became increasingly unsuitable for managing fixed assets and debt. As a consequence, the original cash system was adapted to include non-cash items such as credit approvals for local authorities, and depreciation at an aggregate level. Cash remained the main instrument of control.

In the UK, accounting practices in the public sector began to change with the introduction of market-oriented reforms during the 1980s. The agreement to comply with the UN System of National Accounts (SNA, 1993) provided the impetus for government to develop accounting techniques that could encompass liabilities and assets on an full accrual accounting basis³.

¹ Depreciation is a measure of the consumption, use or wearing out of an asset over the period of its useful economic life.

² The amortisation of an asset is the gradual elimination of a liability, such as a mortgage, in regular payments over a specified period of time. Such payments must be sufficient to cover both principal and interest.

³ The UN System of National Accounts (SNA), the basis of accounting standards for the government sector in most countries, is developed on an accrual basis.

The Government's Green Paper *Better Accounting for the Taxpayer's Money: Resource Accounting and Budgeting in Government* (H M Government, 1994a), followed the Chancellor of the Exchequer's announcement in the November 1993 Budget of the Government's decision to introduce resource accounting throughout central government. In it, the Treasury proposed that all central government departments should, from 1999-2000, produce and publish accruals-based 'resource accounts' to supplement their existing cash accounts. For the longer term, the Green Paper also invited views on a move to 'resource budgeting' whereby the Public Expenditure Survey and the Parliamentary Supply process might also be switched to an accruals basis⁴.

This was followed by a White Paper in 1995 (H M Government, 1995a), in which Government gave a commitment to use resource accounting as the basis of public expenditure planning and control. The White Paper describes the progress made in developing resource accounting and the Government's proposals to introduce resource budgeting as of 1998. This paper sets out the basis of, and reasons for, the proposed changes and describes some of the issues that have been raised on principles and during implementation.

In 1997, the new Government confirmed its intention to carry the reforms forward. The original timetable was for Government departments to complete (but not audit or publish) resource accounts for the financial year 1997-98. Accounts for 1998-99 would be audited but not published and accounts for the years after that would be published. The first resource-based survey was planned to cover public expenditure in 2001-02 and beyond.

Government confirmed its intention to implement resource accounting in its Economic and Fiscal Strategy Report (*Stability and Investment for the Long Term*, 1998).

The detailed plans were outlined as part of the 1998 Comprehensive Spending Review. Spending plans were to be set to cover the whole public sector, using a new

aggregate, Total Managed Expenditure (TME). Expenditure would distinguish between capital and current spending and would be set at a level consistent with the Government's fiscal rules. These rules state that over the economic cycle the Government will borrow only to invest; and that net debt will be held at a stable and prudent level.

As part of the new system, government departments are required to manage separate budgets for capital and current spending. Movement of capital into the current budget is restricted to ensure that the fiscal rules are met and that a short-term pressure on current spending does not compromise longer-term capital investment.

Resource Accounting and Budgeting (RAB) was fully introduced in April 2001. The Minister's commissioning letter for the 2002-06 Strategic Review of Charges set public expenditure limits on a resource accounting basis. It also made clear that we should regard these as maximum limits and that we should demonstrate, by means of a risk analysis, that our advice on charges was consistent with these maximum limits.

4.2.3. The benefits of resource accounting in a public sector context

The principal benefits of resource accounting in a public sector context are the comprehensiveness of the information and the improvements to decision-making that should result.

Accrual accounting should provide a more complete picture of the resources that are being consumed by Government and any future liabilities. This should lead to improvements in decision-making in several ways.

The true cost of policies should be easier to assess. Resource accounting would reflect issues such as opportunity cost (through depreciation and a cost of capital) and potential future liabilities (for example, decommissioning costs). This should ensure that the information to conduct a rigorous cost-benefit analysis would be more readily available. It would also allow a

⁴ Resource budgeting is defined as "planning and controlling public expenditure on a resource accounting basis" Andrew Likierman, Head, Government Accounting Service, H M Government.

more objective discussion of the longer-term implications of policy to be discussed, in particular its impact on future generations.

One criticism of resource accounting is that it is less focused on cash and perhaps therefore less consistent with the planning of Government finance where resources come from cash sources: taxes and new borrowing. This criticism overlooks the fact that resource accounting includes a cash flow statement as well as an income and expenditure statement. Government is therefore probably better placed to manage its budget.

A more telling criticism would relate to the costs of implementing resource accounting across Government. The successful implementation of resource accounting would require significant additional experienced accounting resource to be recruited and integrated into government departments. These cost implications would have to be considered seriously since Government policy is rarely driven by considerations of 'profit' or 'loss'. There may be a more cost-effective way to ensure that policy initiatives are subjected to robust assessments of their costs, benefits and long-term implications.

4.2.4. Public expenditure controls

As stated above, the first Strategic Review of Charges, undertaken in 2000, was conducted in a resource environment. This meant that for public corporations, such as the former three water authorities and Scottish Water, public expenditure considered the capital investment made, the profit/loss generated and a capital charge.

For the second *Strategic Review of Charges 2002-06*, public expenditure were modified in relation to public corporations. The modifications were intended to simplify the budgeting rules and, for most public corporations, to align departmental resource budgets and accounts. For Scottish Water, the rules mean that since the *Strategic Review of Charges 2002-06*, the Scottish Executive has scored actual transactions (loans, grants and interest) rather than the capital invested and the profit/loss generated.

4.3 Impact of resource accounting on charges to customers

The introduction of resource accounting did not have a direct impact on the way in which either the three authorities or Scottish Water managed their business or prepared their accounts. The three authorities had always prepared their accounts on an accruals basis. Given that the Scottish Executive wanted the new Scottish Water to be more commercial and better able to resist competition⁵, it was reasonable to assume that Scottish Water's accounts would be prepared on an accruals basis. Resource accounting did change the financial control figure that the Scottish Executive used. Instead of monitoring the extent of new borrowing required, (refinancing of existing debt at maturity does not count as public expenditure) the Scottish Executive began to measure consumption of resources and capital spending.

During the early part of 2001, this Office had had an ongoing dialogue with the Scottish Executive about the introduction of resource accounting. This continued throughout the summer and early autumn when we were preparing our advice to Ministers. We also participated in a Treasury-led workshop that outlined how the resource accounting based control figures were to be calculated.

Clearly the way in which a company is monitored or analysed does not impact on either its accounts or its underlying business. Consequently, providing that the control total has been correctly adjusted to reflect the difference in how it is calculated, this should have had no impact on the company or the prices that it needs to charge.

Regular dialogue with the Scottish Executive allowed us to be confident that the public expenditure control figures that were included in the letter were consistent with the approach that had been outlined by the Treasury and that they had been adjusted upwards to take account of the difference in the way in which the control figures were calculated.

⁵ Sam Galbraith, MSP, the Minister for Environment, Sport and Culture cited these factors in his justification of the creation of Scottish Water in evidence to the Transport and Environment Committee of the Parliament in February 2001.

As such we believe that the introduction of resource accounting controls for the Strategic Review of Charges did not impact either the operation or prices of Scottish Water. Prices could still have been adversely affected in future years if the control figures had resulted in access to borrowing being restricted when it would have been prudent to borrow more.

4.3.1. The calculation of prices in the Strategic Review of Charges 2002-06

In order to analyse the impact of different cost, investment and debt profiles on the charges faced by customers we use a financial model. We arranged for the model for the *Strategic Review of Charges 2002-06* to be audited by Scott Moncrieff, a leading firm of Scottish accountants. The model allowed us to consider a wide range of scenarios and for each we were able to produce an income and expenditure, balance sheet and cash flow statement.

As such, when we were asked to take account of the introduction of resource accounting by the Scottish Executive, it was straightforward to calculate the resources used by Scottish Water (or each of the three authorities). The scope for efficiency in operating and capital expenditure had been identified in the first half of 2001.

In the Review we explained that a sustainable water industry was fundamental to the customer interest. Our advice on revenue caps was designed to place the industry on a sound financial foundation and to balance the financing demands placed on this and future generations. We also recognised that the industry faced a significant efficiency challenge and that there was a risk that the industry may not improve as much or as fast as we would have liked. This would have resulted in a higher level of borrowing. In this context, we were able to use the model to establish an optimum profile for investment.

We conducted a detailed risk analysis to ensure that the limits to public expenditure were not likely to be exceeded. This risk analysis looked at the performance of both the previous authorities and that of all of the

companies south of the border. It was clear that the principal risks related to the extent and speed at which Scottish Water (or the three authorities) were able to meet their efficiency targets. There was also a clear risk that future charges could be materially higher if we were to take a very short-term view and borrow to the full extent of the public expenditure limits in order to reduce, somewhat artificially, the level of prices that customers should pay.

We therefore chose to target financial ratios that were consistent with a prudent level of new borrowing. These financial ratios were consistent (given the different capital and ownership structures of the industry) with those agreed with the credit rating agencies by Ofwat. Our explanation of this to the Finance Committee is attached as Appendix 1.

We believe that our caution has been vindicated by events. We now expect that Scottish Water's total borrowing could increase to almost £2.7 billion by 2006 – principally due to higher than expected capital inflation, the higher cost level inherited from the three authorities and slower progress in meeting the efficiency targets. (The actual level will depend upon how much of the *Quality and Standards II* programme is delivered by April 2006.) This would be some £250-£300 million more than we recommended in our advice to Ministers. While this increase is undesirable from a customer perspective, it has not threatened the prospect of a sustainable water industry. It is therefore clear that customers would have faced even higher charges in the medium to long term had we allowed borrowing to increase at a faster rate than in the *Strategic Review of Charges 2002-06*.

We continue to believe that we advised reasonable revenue caps that were consistent with our duty to promote the customer interest. Subsequent events have shown that sufficient public expenditure had been made available to cover any likely underperformance. The end-year flexibility allowed by the Scottish Executive has also allowed this expenditure to be used when required. We have to conclude, therefore, that the level of public expenditure that was made available by Ministers did not adversely impact customer charges.

4.3.2. The submission of Analytical Consulting Ltd (ACL) to the Scottish Parliament's Finance Committee

ACL submitted a paper to the Finance Committee of the Scottish Parliament. This paper suggested that the move to resource accounting had reduced the borrowing available to Scottish Water and that consequently customer charges were set at too high a level. It also suggested that the Scottish Executive's Annual Expenditure Report for 2003-04 appeared to suggest that more borrowing was available to the industry than the resource limits which were set in the commissioning letter.

The paper's assumption is that it will be in the customer interest to borrow more and pay less in charges. While it is correct to say that in the short run we could potentially reduce charges by increasing the level of borrowing, the long run impact of this on customers must be considered. For example, if we expected the level of annual investment to reduce, it could be useful to increase the proportion of investment funded by debt in the short run in order to maintain a smooth price profile. However, the likelihood is that there will be no significant reduction in the capital programme in the foreseeable future. As such, any delay in increasing prices will simply increase future bills. This is because the extra borrowing can have only one result: to increase the total annual interest payable and set up a repayment liability for future generations. This extra interest will apply every year (unless and until the debt is repaid) and would increase marginally each year to reflect the compounding of interest.

The comparison of the control limits in the commissioning letter and the 2002 Annual Expenditure Report can be explained in a straightforward way. When we were writing the Strategic Review of Charges, it was not certain that the Scottish Executive's proposal to create Scottish Water would be approved by the Parliament.

In contrast, by April 2002, a new Board and senior management team had been appointed. The Scottish Executive knew more about how the integration of the

three authorities was progressing and it was also clear that the level of operating costs that would be inherited by Scottish Water was even higher than the three authorities had estimated during the summer of 2001. The Scottish Executive has said that it decided to take an even more prudent view of how much public expenditure may be required and it adjusted its budget baseline accordingly. This increase in public expenditure would not justify an increase in borrowing and a reduction in prices. Indeed, the prospect of significant extra borrowing could threaten the sustainable properly funded industry that the customer deserves. It is important to highlight that no extra value is created for customers as a result of any increase in borrowing beyond the targets set in my Strategic Review of Charges. No new customers will be added to the network, no additional improvements will be made to the environmental and public health performance of the assets and no improved maintenance regime will be introduced (beyond those already funded).

4.3.3. The Scottish Executive's response

The response of the Scottish Executive to the paper prepared by ACL is contained in evidence provided to the Committee by officials and a letter from Allan Wilson, MSP, Deputy Minister for Environment and Rural Affairs.

The Scottish Executive made the following points:

- It is not prudent to borrow more than the value of net new investment.
- The technical treatment of public expenditure in the letter that commissioned the Strategic Review of Charges was correct.
- The change in the method of presenting public expenditure had not reduced the amount of resources available.

Depreciation in the water industry comprises two elements: an infrastructure renewals charge and a 'normal' depreciation charge. The infrastructure renewals charge covers the cost of maintaining the serviceability of the water mains and sewers. While in

replacement cost terms these assets represent in excess of 80% of the total asset base, they are not typically included in the asset value included in the balance sheet. The depreciation charge reflects the annual cost of the fixed assets included in the balance sheet. In order to understand the level of net new investment, it is important to deduct both of these depreciation charges.

Net new investment in economic terms may still be overstated even after both depreciation charges have been deducted. This could arise if the asset value on the balance sheet did not include all of the assets that were owned and used by a company, or if the infrastructure renewals charge was set at a level lower in real terms than that required to be spent annually over the very long run. Given the extent of a water and sewerage asset base and that detailed asset registers are a relatively recent development, there is a risk that the depreciation charges do not fully reflect the economic value of the service provided by a water company's assets. A prudent financial strategy would take full account of this risk before deciding what proportion of the accounting value of net new investment should be borrowed.

ACL suggested that it was wrong in the commissioning letter to set a combined control total for 'capital' and 'resources'. As discussed above, the criticism runs that by setting a combined total you 'double count' depreciation and that you therefore reach the public expenditure limit more quickly than would otherwise be the case, thereby limiting the opportunity to borrow money for new assets.

This argument is invalid for two reasons. In section 3.4.1 we discussed that customers could only be disadvantaged if access to borrowing had been restricted and it had been prudent to borrow more. In the Strategic Review of Charges, we took the view that sufficient public expenditure had been made available to cover an appropriate increase in net debt and that the public expenditure limit should not be exceeded on most realistic assessments of the risks facing the industry.

The second reason is technical and relates to the application of resource accounting to a public corporation. The 2000 Spending Review treated 'depreciation' (both the fixed asset depreciation and the infrastructure renewals charge) as a 'non-cash charge' in the resources budget. However, it also counted the 'renewals charge' as a cash item of expenditure within the capital budget. The 'resources' budget was increased to compensate – the external finance limit that had applied to the water authorities (approximately £200 million prior to 2002) was raised to £314 million for 2002-03.

Combining the control targets was designed to protect customers' interests. If a public body makes a bigger surplus than expected, it simply reduces its call on resources from the taxpayer. However, the water industry in Scotland is unusual amongst public bodies because it raises income through charges. If the control targets had not been combined and Scottish Water had made a larger surplus than expected (for example, if it had accelerated its efficiency programme), then this benefit would have accrued to taxpayers and not to customers of the water industry. The combined target allows Scottish Water to keep any surplus and to offset this against its capital expenditure.

4.3.4. The Finance Committee's response to the paper by ACL

We discuss the Finance Committee's Inquiry into the water industry in more detail in Chapter 8. Paragraphs 116 and 117 of the Committee's report explain that the majority of the Committee accepted that the arguments advanced by ACL were incorrect:

"116. Overall, the ACL argument that there is an accounting error is in essence a theoretical one. The Committee received evidence in a letter from the Treasury and from the Executive and the WIC that the ACL interpretation of Treasury advice was wrong and that no double counting took place. The Committee was also told by its Budget Adviser that the ACL claim that the high level of depreciation costs squeezed borrowing levels does not recognise that depreciation is a non-cash charge set in the resource budget, not the

borrowing limits. The Committee accepted this advice with Fergus Ewing and Jim Mather dissenting.

117. The Committee was advised that the ACL argument rested on the false assumption that the WIC's advice on a prudent level of borrowing was a limit, when, in fact, the Executive made provision for greater borrowing if it was necessary, ie because of doubts about the attainability of the WIC's efficiency targets. Significant sums of £174 million remain available to Scottish Water for capital investment, over and above the WIC's recommendation of £514 million. The Committee rejected the ACL argument with Fergus Ewing and Jim Mather dissenting."

4.4 Indirect benefits to customers

Prior to 1999, the focus of Government, customer organisations and the industry was primarily on inputs. The industry and customer organisations sought to maximise the public expenditure that was available in order to limit the charges that had to be paid by customers. There was a desire in the industry to keep charges low⁶ almost at all costs. While Government increasingly wanted improvements in environmental and public health compliance, it was understandably reluctant to make more public expenditure available if this was not going to result in increased investment and improved environmental compliance. There was a risk that increased public expenditure would have simply delayed price increases.

Public expenditure in the water industry meant a borrowing consent. Increased borrowing means an increase in the higher interest charge. In this context it is important to note that the industry does not actually ever repay the principal of loans, it simply rolls over the principal for another term at the prevailing interest rate. As such this interest charge is paid in perpetuity⁷. This will lead to higher prices for all future customers than would otherwise have been the case.

In our interim Strategic Review of Charges (December 1999), we highlighted that the industry did not seem to be investing sufficiently in the maintenance and refurbishment of its assets. This was important as it meant that debt was being increased at a time when the economic value of the industry's asset base was declining. The *Quality and Standards II* process confirmed our advice that there was insufficient investment in maintenance and refurbishment.

Preparation for the introduction of resource accounting was useful because it switched the focus away from inputs to outcomes – ie how much were we going to invest and for what purpose (maintenance, improvement etc). It also allowed there to be a focus on the costs of service delivery. A sustainable public sector model for the industry required such a change in focus.

Although the Scottish Executive has now reverted back to a public expenditure limit based on access to new debt, the focus has remained on ensuring that sustainable improvements are delivered in environmental and public health compliance and in the value for money provided to customers.

⁶ For example, the West of Scotland Water Authority considered that it should maintain average domestic prices at the lowest level in Britain. Such a stance was not consistent either with the higher public health and environmental standards that were required or with the unit cost advantages enjoyed by companies south of the border which supplied more densely populated areas.

⁷ There is also a refinancing risk – ie that interest rates may change and that the interest charge faced by customers will change. In the past few years, the industry has benefited from lower interest rates as maturing debt has been refinanced more cheaply; however, most commentators suggest that market interest rates are likely to increase and as such the refinancing risk is less likely to benefit customers in the medium term.

Section 1: Chapter 5

Our monitoring of performance

5.1 Introduction

In Chapter 1 we described our statutory requirement to provide advice to Ministers and explained how this requires the Commissioner to undertake the functions of economic and customer service regulator of Scottish Water. Economic regulation includes the role of performing ongoing monitoring of Scottish Water's economic performance. Similarly, customer service regulation includes ongoing monitoring of Scottish Water's customer service performance.

In Chapter 2 we explained how we set performance targets for Scottish Water as part of the *Strategic Review of Charges 2002-06*. Having set these targets, it is clearly essential that we monitor, and report on, Scottish Water's performance in achieving these targets.

In this chapter we discuss the various mechanisms we use to monitor Scottish Water's performance. We also discuss the importance of performance monitoring for customers.

We believe that our performance monitoring has already brought results for customers. Scottish Water has performed much better in its second year than initial drafts of its business plan suggested would be possible. We are also increasingly focusing on Scottish Water's performance in delivering the £1.8 billion capital investment programme for 2002-06. Clarity on performance in this area will be central to ensuring that customers receive value for money.

5.2 The importance of performance monitoring to the success of a public sector model

In England and Wales, Ofwat monitors and reports on the performance of the companies on a regular basis. Ofwat also sets targets for improvement that are, at least in part, driven by comparisons between the companies. Investors are very interested in these reports because they provide an objective source of information about

the prospects of the companies. Also, investor reaction to news from a company could alert Ofwat to an issue that may not yet have surfaced in a regulatory return.

In the public sector model, the absence of investor scrutiny makes our performance monitoring even more important. This explains both our recommendation to the Minister that we should publish annual performance reports and the investment we have put into developing regulatory systems.

Our monitoring has become more rigorous and we will continue to look at ways to improve our understanding of Scottish Water's performance without unduly increasing the amount of information that we request.

5.3 Improvements in performance monitoring

Prior to the creation of the three former water authorities¹ in 1996, only very limited information was available about the performance of the water and waste water industry in Scotland. At the time, water services formed part of the overall responsibilities of local authorities. Integrated budgets meant that financial information, for example on overall levels of investment, was difficult to identify other than at a very high level. Information on customer service provision was also virtually non-existent.

With the formation of the three former water authorities, the amount of information available, and hence the ability to monitor performance, gradually began to improve. However, as described in Chapter 2, there were initially still significant differences between the three authorities concerning the information they reported.

Shortly after the formation of this Office in November 1999, we signalled our intention to establish a mechanism to ensure that it would be possible to carry out rigorous comparisons between the three water authorities and between the industry in Scotland and in England and Wales. The subsequent 'information project' led to the creation of a Scottish version of the

¹ North of Scotland Water Authority, West of Scotland Water Authority and East of Scotland Water Authority.

Ofwat June return. This return provides a comprehensive set of financial, asset condition, capital investment and customer service indicators that allow us to monitor and report on Scottish Water's performance.

In our advice to Ministers contained in the *Strategic Review of Charges 2002-06* we included two key recommendations to strengthen performance monitoring further. This advice was published in November 2001.

- i) To endorse a joint project between the Water Industry Commissioner, Scottish Environment Protection Agency and the then proposed (now established) Drinking Water Quality Regulator to ensure that consistent output measures and metrics are collected and monitored.
- ii) To require the publication by the Commissioner's 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.

We will discuss progress on these two recommendations in more detail below. In summary, the project to identify consistent output measures has proven difficult to implement but the need for such a facility has become increasingly evident. The production of performance reports by the Commissioner is now established, with two Costs and Performance reports, two Investment and Asset Management reports and one Customer Service report already published. These have greatly strengthened the visibility of Scottish Water's progress towards the targets set in the *Strategic Review of Charges 2002-06*, to the benefit of all customers.

We have also built up a range of other performance monitoring activities, which help to improve our understanding of how well Scottish Water is performing. These are covered in more detail below and include the following:

- Monthly financial returns. These financial reports, referred to as RAB Returns, provide a detailed breakdown of Scottish Water's financial

performance over the preceding month, as well as progress against annual budgets. These detailed returns allow monthly monitoring of progress against the financial targets set out in the *Strategic Review of Charges 2002-06*.

- Quarterly returns on progress with the capital investment programme. These provide an update on progress, at a project level, in delivering the capital investment programme. They contain information on: forecast and actual project spend, physical progress towards defined milestones, and explanations of financial variances.
- Audits of Scottish Water's investment appraisal process. Investment appraisal is a key activity in determining network investment requirements. Good performance in this area will bring significant benefits to customers.
- Customer service performance audits. These audits provide an assessment of Scottish Water's performance across a range of customer service measures. This allows year-on-year comparisons of performance to be made, as well as comparisons with other benchmark companies.

We believe that monitoring performance is central to regulation. The improvements that have been made in information collection are only valuable if, as a result, customers receive a better level of service or the costs of the industry can be reduced on a sustainable basis. This requires comprehensive and ongoing performance monitoring.

5.4 Information gathering

The collection of robust information on performance is fundamental to performance monitoring. The tools we employ to gather information from Scottish Water have been described in detail in the document, *Our work in regulating the Scottish water industry: Setting out a clear framework for the Strategic Review of Charges 2006-10*, published in July 2004. We receive information in a set

of 'regulatory returns', which Scottish Water submits to our Office during the year.

In summary, the key returns are as follows:

The Annual Return

This is the largest single information request issued to Scottish Water on an annual basis. It is a comprehensive set of financial, physical and performance indicators. The Return mainly focuses on information relating to the previous financial year, although in some cases it also seeks forward projections.

Each line of information requested has a precise and documented definition. These definitions are provided to Scottish Water in the Annual Return guidance that we issue.

Our Office holds Returns from 1999-2000 onwards for the three former authorities. For 2001-02, Returns were submitted by each of these authorities, followed by a consolidated Return representing collated information for the newly formed Scottish Water. Since 2002-03, Scottish Water has assumed responsibility for submitting a single Return.

The information collected allows us to monitor year-on-year changes in performance and to benchmark Scottish Water's performance with that of the companies south of the border. From 2004 most of the tables from the Annual Return have been available on our website.

Monthly Financial Returns (or 'RAB Returns')

These monthly financial reports contain details of Scottish Water's financial performance over the preceding month and against annual budgets. The accompanying commentary provides explanations for variance against annual targets (in other words, performance above or below targets), and allows areas of concern to be quickly identified.

It is important for us to be able to monitor the financial position of Scottish Water throughout the financial year. The RAB Returns provide visibility on key financial trends and movements in operating costs. We can use the information to report on Scottish Water's progress in achieving its targets.

Capital Investment Returns (CIRs)

The purpose of the quarterly CIR submission is to monitor progress, at a project level, with delivery of the capital investment programme. It contains information on:

- forecast and actual project spend;
- physical progress towards defined milestones; and
- explanations of financial variances.

Through a combination of the quarterly CIRs and the investment tables in the Annual Return, we can track delivery of the investment programme and monitor the effectiveness and efficiency of Scottish Water in delivering the required investment. The CIR can also highlight material changes from the planned investment programme. These may be positive (efficiencies or early delivery of a project) or negative (cost overruns or project delays).

Customer Service Performance Return

This quarterly return provides information about Scottish Water's customer service performance and allows us to check compliance with guaranteed minimum standards of service.

Customer revenue information

These submissions, which are made by Scottish Water twice a year, are intended to capture a wide variety of information about both non-domestic and domestic customers. The information covered includes areas such as customer revenue, consumption and debt analysis. These returns are an invaluable tool in

monitoring revenue on an ongoing basis, ensuring that Scottish Water's customer information is consistent with its declared revenues and with the revenue cap set by Ministers.

5.5 Auditing of information

In England and Wales it is water industry practice for Ofwat to use consultant engineers (known as Reporters) to help verify information submissions. The Reporters audit the information provided to the regulator by the companies and highlight any issues or inaccuracies.

Following discussions involving the Scottish Executive, the Commissioner and Scottish Water, a Reporter for the water industry in Scotland was appointed by the Commissioner in December 2003. This will improve the regulatory process in Scotland and provide greater assurance for customers that Scottish Water is being regulated effectively.

In England and Wales the Reporters are funded by the water companies. In Scotland, the Reporter is funded by the Scottish Executive directly, ie by taxpayers.

The regulatory Reporter in Scotland is Mr David Arnell of Black and Veatch Consulting. The Reporter's duties will cover all aspects of Scottish Water's information submissions, as directed by the Commissioner. This will include auditing both the annual regulatory return submitted by Scottish Water and its Business Plan submissions, as well as reviewing the proposed investment programme to ensure that Scottish Water's investment plans are robust. Such scrutiny has played an important role in improving the quality and reliability of information provided to Ofwat by the companies in England and Wales.

5.6 Performance reports

We noted above that the collection of information is only the means to an end. It is important that we use this information to ensure that customers receive a better level of service or that the costs of the industry are sustainably reduced. We can use the information to set

more challenging targets or to inform customers and create an expectation of, or a demand for, better value for money. The key to encouraging customers to expect more is the publication of performance reports. These reports are designed to report objectively on Scottish Water's progress in achieving targets. They also allow comparisons to be drawn with the performance of the water companies in England and Wales. We work hard to ensure that these reports can be readily understood.

In accordance with the recommendation to Ministers in the *Strategic Review of Charges 2002-06*, our Office now produces three regular reports on Scottish Water's performance in the areas of:

- costs and performance;
- investment and asset management; and
- customer service.

The Costs and Performance Report provides information on the progress of Scottish Water towards meeting the capital and operating cost efficiency targets set in the *Strategic Review of Charges 2002-06*.

In the most recent *Costs and Performance Report*, published in November 2003, we welcomed the progress that Scottish Water had made in its first year of operation in reducing operating costs by £37 million (nearly 10%) in real terms. However, we also challenged Scottish Water to build on its solid start. We identified in the report that the rate of improvement in efficiency would have to accelerate significantly if increases in customers' bills were to be avoided. Specifically, the report identified that the average domestic customer's bill was £80 higher than it needed to be, based on a comparison of performance with the companies in England and Wales.

The *Investment and Asset Management Report* examines the investment performance of Scottish Water. It also considers historical investment in the water industry in Scotland and the overall condition and performance of the industry's assets.

The most recent *Investment and Asset Management Report*, published in April 2004, alerted customers to the slow progress that Scottish Water is making in delivering the vital improvements to drinking water quality and the environment, which are included in the £1.8 billion *Quality and Standards II* investment programme. It also confirmed that the condition and performance of the asset base in Scotland is on a par with that in England and Wales and that investment per property is broadly similar both sides of the border.

The *Customer Service Report* examines the trends in service levels provided to customers and gives information on Scottish Water's performance against key measures of customer service.

In the first *Customer Service Report*, published in October 2003, we noted that the level of service provided to customers is still significantly lower than that delivered by the companies in England and Wales.

These reports provide objective analysis of the current performance of the industry in Scotland. While they have highlighted some improvements in Scottish Water's performance, particularly in the quality of its management information and in achieving efficiencies, the overall message has been that significant further scope for improvement remains.

Inevitably, this message can be unpopular with the senior management of Scottish Water and with some other industry stakeholders. However, we believe that the reports provide an objective assessment of Scottish Water's performance. This benefits customers by improving the transparency of the industry's progress in achieving efficiency targets, delivering investment and improving customer service. Sustainable improvement requires a common understanding of where we are and where we need to get to.

Through time, these performance reports will provide an evidence base for improvements that have been achieved and the increase in value for money that customers expect.

5.7 Monitoring the output of investment

As explained above, in the *Strategic Review of Charges 2002-06*, we recommended to Ministers that they should endorse a joint project between the Water Industry Commissioner, Scottish Environment Protection Agency and the then proposed (now established) Drinking Water Quality Regulator. The aim of the project would be to ensure that consistent output measures and metrics are collected and monitored.

The requirement for this project was highlighted in the work carried out for the Review². Defining and monitoring output measures is an essential part of monitoring delivery of the capital investment programme. In the absence of such detailed output measures, we can currently only monitor the *inputs* to the investment programme, such as the delivery of water main and sewer replacement and new water and waste water treatment plants. This is clearly better than nothing. However, if customers are to be sure that they are getting value for money we need to ensure not only that the money was spent (in fact less money spent could be a good thing!) but also that the *outputs* – such as cleaner beaches, better water quality and improved customer service – can be effectively and reliably monitored. This would allow us to comment on the effectiveness of the delivery of the improvements targeted in the Quality and Standards process.

Defining these output measures is not straightforward. We need to be sure that we do not create inappropriate incentives and we must ensure that the outputs cover all areas of the programme. In late 2002, a contract was awarded for work in defining a suitable set of output measures and a stakeholder group was formed to oversee the process. The stakeholder group involved representatives from the Scottish Executive, the Scottish Environment Protection Agency, the Drinking Water Quality Regulator, the Water Industry Commissioner and Scottish Water.

Work progressed during early 2003 but it became clear that the complexity of the task was greater than had initially been envisaged. The project was suspended in

² *Strategic Review of Charges 2002-2006*, Section 4: Chapter 19, Page 212.

August 2003 because we had to focus on preparatory work for *Quality and Standards III*. We are disappointed by the lack of progress in this area because we regard the definition of these outputs as an important step forward in improving the quality of investment monitoring. The requirement to complete this work remains. However, until such time as a comprehensive set of output measures are in place, we will continue to monitor the delivery of the investment programme at an 'input' or project level.

5.8 Investment appraisal audits

An essential part of good asset management is the proper appraisal of investment options. During the current regulatory period, Scottish Water is tasked with delivering around £450 million per annum of investment³. Customers will want to be assured, through performance monitoring, that Scottish Water has proper investment appraisal processes in place and that the investment programme is being delivered efficiently and effectively.

In the last Strategic Review of Charges, we raised concerns about the level of scrutiny and challenge given by the former authorities to projects as they passed through the project appraisal process. We therefore decided, as part of our performance monitoring role, to carry out regular investment appraisal audits of the authorities to highlight areas of strength and areas that were falling short of best practice.

These audits form an important part of assessing the effectiveness of investment decision-making by Scottish Water. In particular, they assess Scottish Water's relative position compared with previous audits and in relation to industry best practice. The projects audited are selected at random (a mix of large, small, in progress and completed projects). The assessment involves a review of the relevant project documentation and structured interviews with project staff.

We propose to carry out a third investment appraisal audit in December 2004. This will form a key input to the

assessment of Scottish Water's asset management performance and the scope for capital efficiencies.

5.9 Customer service audits

The only contact many customers have with Scottish Water is when they are making a complaint or querying an aspect of service. The way in which Scottish Water handles a complaint can have a significant impact on how the company is perceived by its customers. If the contact is handled well this can have a positive impact and will help to restore the customer's confidence in Scottish Water's level of service. If handled poorly, it will compound any negative perceptions.

We carry out quarterly quality performance assessments to monitor how well Scottish Water handles customer complaints. Each quarter, we make a random selection of 100 complaints received by Scottish Water. Each complaint response is reviewed and scored on aspects such as its clarity, completeness, tone and appropriateness. We raise any areas of concern with Scottish Water.

The findings from these performance assessments are reported in our Customer Service Report.

5.10 Future improvements in performance monitoring

As outlined above, performance monitoring in the water industry in Scotland has developed significantly in recent years but there is still room for improvement. We are committed to ensuring that customers get better value for money and to this end intend to work to strengthen our performance monitoring in the area of investment delivery. We will also need to adapt our processes to take account of future changes in legislation and in the regulatory framework, such as the introduction of a framework for competition and the development of regulatory accounts. In the following section we discuss how we see performance monitoring developing in the future.

³ Investment delivery is currently running at around £400 million per year.

Our performance monitoring serves three main functions:

- It provides the information we use to advise Ministers on progress towards the targets set out in the *Strategic Review of Charges 2002-06*.
- It provides us with information that allows us to set new, more demanding targets for the industry.
- It allows us to inform customers about Scottish Water's performance in achieving efficiencies, delivering investment and improving customer services.

Advances in performance monitoring and reporting have brought a level of clarity to the performance of the Scottish water industry that has not previously existed. In particular, the comparison of performance levels with England and Wales has brought into sharp contrast the work that remains to be done to achieve the levels of efficiency and customer service that are being achieved south of the border. Perhaps inevitably, this has led to accusations of unfair comparisons and criticisms of our methods of calculation.

For comparisons to be fair, it is essential that the information we collect is accurate and that the analysis we carry out is as robust as possible. This is fundamental to the success of regulation. We therefore place great emphasis on the quality of the information provided by Scottish Water and on the rigour of our analysis. In particular, we look to ensure that the comparative analysis that we carry out between the performance of Scottish Water and the water companies in England and Wales is sound and fair.

Performance analysis will be less effective if the information that underpins the analysis is disputed. Such disputes are more likely when regulation is relatively new or when the performance gap that is assessed is particularly large. Following publication of the first Costs and Performance and Investment and Asset Management reports in February and March 2003, Scottish Water raised a large number of questions

about: our assessment of their efficiency performance; the accuracy of information submissions; and the adjustments we make to their regulatory submissions to ensure accurate comparisons between years and between companies.

It was clear that we needed to work with Scottish Water to understand their objections and, if necessary, revise their efficiency targets. During the spring and early summer of 2003 we worked with Scottish Water and the Scottish Executive to agree a 'Ten principles' document⁴. This agreement sets out a range of measures to ensure clarity on the efficiency targets set for Scottish Water, to improve the quality of information flows and to clarify the nature and scope of adjustments that are made for the purposes of regulatory comparison. These ten principles are described in detail in the next chapter. They provide a number of key improvements to the performance monitoring function by:

- providing clarity on the targets for operating costs and debt for the current regulatory period;
- promoting the appointment of a Reporter of regulatory information to improve information submissions;
- providing a framework for the audit of the regulatory adjustments required to Scottish Water's accounts and regulatory returns; and
- calling on Scottish Water to engage with the Commissioner in improving the quality of data supplied to the Commissioner.

These measures are already producing tangible improvements in our ability to monitor Scottish Water's performance. The appointment of a Reporter, for example, has significantly increased the scrutiny of information submissions. This brings benefits to customers by providing independent verification of the information on which our analysis is based. Similarly, clarity on the financial targets, which Scottish Water is tasked with achieving, brings benefits to all stakeholders.

⁴ Letter from the Minister for Environment and Rural Development, Ross Finnie MSP, to the Water Industry Commissioner for Scotland, Alan Sutherland, dated 31 July 2003.

Going forward, the key areas of regulatory activity that will lead to further improvements in performance monitoring are as follows:

- Introduction of regulatory accounts

The *Strategic Review of Charges 2006-10* will focus only on the core activities of Scottish Water in providing water and sewerage services to customers in Scotland. This change reflects the requirements of the Water Industry Act 2002, which restricts our role to promoting the interests of customers of the core business. As part of this 'ring fencing', we have begun to establish regulatory accounts, which will ensure that customers of the core business are only paying for services associated with core activities. This work will be completed during the current financial year.

- The introduction of a framework for competition in the water industry in Scotland

The proposed changes to the competition framework contained in the Water Services etc (Scotland) Bill will also require a further level of accounting separation. This framework will require there to be a clear split between the retail (customer service and billing) costs and the wholesale (network management and operation of treatment plants) costs.

Both of these developments will improve the quality of information provision and hence the robustness of our analysis.

5.11 Conclusions

Performance monitoring is fundamental to regulation and brings significant benefits for customers and stakeholders. To withstand challenge successfully, it relies on robust information and sound analysis. Over the past few years performance monitoring of the water industry in Scotland has been significantly enhanced:

- Major improvements have been made in information gathering, with the introduction of the Annual Return submission, monthly RAB submissions, quarterly CIRs and customer service returns and customer revenue information.

- The introduction of a regulatory Reporter for Scotland has greatly enhanced the degree of scrutiny of the information contained within these returns.

- Publication of regular reports on Costs and Performance, Investment and Asset Management and Customer Service have brought a new level of transparency to Scottish Water's performance.

- The development of the 'Ten principles' has clarified targets, improved information collection and set a baseline for performance monitoring.

We will continue to promote further advances in performance monitoring. We hope that our performance reporting and monitoring will act both to create an expectation of improved performance and to inform the future setting of targets. Both will be essential to the success of a public sector model for the water industry.

Section 1: Chapter 6

The ten principles

6.1 Introduction

In the previous chapter, we described our role in monitoring the performance of Scottish Water and the benefits that this brings for customers. We outlined the processes that we use and the improvements that have been made in our performance monitoring activities in recent years. We identified that monitoring and reporting on performance is a key element of the regulatory process.

Successful performance monitoring, and hence successful regulation, relies on the existence of an agreed set of targets which the regulated company (in this case Scottish Water) is required to achieve. Without agreement on these targets, performance monitoring and reporting becomes difficult and regulation will not be effective. This impacts directly on customers and stakeholders as it is the existence of clear targets that drives regulated companies to tackle inefficiencies, deliver investment and achieve customer service improvements.

In this chapter we discuss the process by which we, along with the Scottish Executive and Scottish Water, have worked to improve the clarity of the targets set for Scottish Water in the current regulatory period. Specifically, we discuss the events leading up to the development of the 'Ten principles' which are written terms of understanding between the Scottish Executive, the Commissioner and Scottish Water. We will explain what the ten principles are, why they were introduced, and the impact that they have had to date.

6.2 Targets set in the Strategic Review of Charges

In the *Strategic Review of Charges 2002-06* the Commissioner provided advice to Ministers on the revenue limits that should be placed on Scottish Water for the Review period. In the foreword to the Review the Commissioner commented that¹:

“the 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.”

The advice in the Review establishes a financing regime that is capable of meeting the ongoing costs of investment over the next and subsequent generations. This regime was fully consistent with the requirement, set out in the commissioning letter for the Review from the Minister, that public expenditure limits outlined in the commissioning letter should be regarded as absolute and as the maximum limits. This effectively sets Scottish Water’s allowed levels of debt at the end of the Strategic Review period.

The financial framework set out in the Review allows environmental improvements, public health standards and asset replacement needs to be met as and when they fall due. Importantly, the framework is capable of withstanding future shocks, whether caused by increasing interest rates, lower public expenditure, asset failure or more demanding legislative standards.

Following the publication of the Review, the operating cost targets were reviewed by the Transport and Environment Committee of the Scottish Parliament. The committee heard evidence from the three former water authorities and from the Scottish Executive, all of whom regarded the targets set out in the Review as achievable. It also heard from a range of other stakeholders, who did not express a view, and from the unions represented in the water industry. The unions regarded both the method of benchmarking and the resulting targets as unreasonable. After a long and detailed inquiry, the committee concluded that the targets were challenging but fair.

The importance of the targets was confirmed in late September 2001 by the Minister for Environment and Rural Affairs, Ross Finnie, MSP who stated that

¹ *Strategic Review of Charges 2002-06*, published in November 2001. Foreword.

“efficiency savings are essential to ensure that future charge rises for the customer are minimised”.

In finalising the Review, and in the period since, the targets set have been subject to intense scrutiny by a wide range of consultants and industry stakeholders. No substantive evidence has been provided which would justify any deviation from the agreed targets. We therefore continue to believe that the targets which underpin the Strategic Review are consistent with proper and rigorous analysis and that a well-managed company should be able to achieve, if not beat, the targets comfortably. This is in the interests of all customers.

6.3 Scottish Water’s business plan

The *Strategic Review of Charges 2002-06*, published in November 2001, provided advice on revenue caps for both the three authorities and the proposed Scottish Water. The Review therefore established the regulatory targets for Scottish Water in the period to 2006.

At the current time, Scottish Ministers can change the level of borrowing that is available to Scottish Water. They cannot, however, alter the cap on revenue without seeking further advice from this Office. Scottish Water is required to produce an annual business plan for approval by Ministers which sets out the Board’s strategic aims for the company and contains details of the key financial and delivery targets for the business.

In early 2003, Scottish Water provided the Minister for Environment and Rural Development, Ross Finnie, MSP, with its proposed business plan for the three-year period from 2003-04 to 2005-06. In March 2003, the Minister wrote to the Commissioner asking him to consider representations from Scottish Water about its strategic business plan. In particular, the Minister noted that Scottish Water’s proposed business plan suggested that Scottish Water’s operating cost targets would be different from those set out in the Strategic Review of Charges. This would have resulted in increased borrowing, no extra benefits for customers and increases in future charges.

As requested by the Minister, we began a dialogue with Scottish Water on the contents of its proposed business plan in early April 2003. During this process we made it clear to Scottish Water that any change to the targets set out in the Strategic Review of Charges would require an analytically sound justification and would need to identify factors which were:

- unique either to Scottish Water or to a subset of the companies regulated by Ofwat (which were used as benchmark companies in the Strategic Review);
- not within the management control of Scottish Water;
- new, ie not known in October 2001 when the *Strategic Review of Charges 2006-10* was carried out.

We suggested to Scottish Water that one area for discussion would be the starting position inherited by Scottish Water in April 2002. We had already commented, in the *Costs and Performance Report 2001-02*, that the performance of the three former authorities on underlying operating expenditure was some £20 million above the assumptions in the Strategic Review of Charges.

We received written representations from Scottish Water on its proposed business plan on 14 April, 25 April and 15 May 2003. We also met with Scottish Water to discuss these representations on 17 April and 2 May 2003. We considered these representations in detail to establish whether, based on the criteria outlined above, they would justify any changes to the targets set out in the Strategic Review of Charges.

On 27 May 2003 we responded to the Minister for the Environment and Rural Development with a detailed analysis of Scottish Water’s representations and their impact on the assumptions that underpin the Strategic Review of Charges.

In our response we pointed out that the operating cost projections contained in Scottish Water's strategic business plan would have led to price increases of around £40-£50 for the average domestic customer in 2006-07. We explained that we considered this to be neither justifiable nor acceptable. We also concluded that Scottish Water's business plan did not provide a sufficient degree of financial sustainability to ensure the longer term success of the company. This is clearly not in customers' interests.

As well as analysing in detail the representations that Scottish Water made about its strategic business plan, we also took the opportunity to review the assumptions and the risk analysis that underpinned the *Strategic Review of Charges 2002-06*. We concluded that some minor changes would, in the light of our knowledge now, have been made, but that none of these either collectively or individually would have caused a material change to this Office's advice on either the revenue caps or the efficiency targets.

We identified one small variance in favour of Scottish Water. This arises from a difference in the definition of a public sewer between the law in Scotland and that in England and Wales. In Scotland, the section of the sewer which runs from the sewer main in the street to the curtilage of the property is the responsibility of Scottish Water. In England and Wales the entire service connection from the sewer main into the property is the responsibility of the customer. This would have reduced the assessed efficiency gap between Scotland and England and Wales by just over £2 million per year.

Scottish Water representations

Scottish Water made representations on a number of other issues. However, our analysis has shown that none of these issues justifies any variance away from the recommendations contained in the Strategic Review. Each of these issues is considered below:

- **Bad debt:** Scottish Water claimed to be disadvantaged by its relatively high level of domestic bad debt. Our analysis showed that Scottish Water

is a considerable net beneficiary (by around £20 million) from the agreement with local authorities to collect domestic charges. It would therefore not be appropriate to cite a worse bad debt position as a reason for failing to close the efficiency gap.

- **Non-core costs:** Scottish Water excluded 'non-core' costs from its presentation of its operating costs in the strategic business plan. The Strategic Review of Charges funded in full all 'non-core' activities that were conducted by the three authorities in 2001. In order to ensure a like-for-like comparison of Scottish Water's performance with the targets set in the Strategic Review, these costs needed to be added back. This increases declared cost levels in the strategic business plan by around £11 million, to £12 million per year.
- **Capitalised operating costs:** Scottish Water increased the amount of operating cost capitalised both in proportion to revenue and to the size of its capital programme. The presentation of information or a change in the implementation of an accounting standard should not be allowed to impact on the assessed performance of a company. The increases in capitalisation projected by Scottish Water did not appear to be consistent with the practice of companies in England and Wales. As a consequence, and in the absence of much greater clarity on the capital programme, it is appropriate to reverse this change to ensure a truer comparison. This increases the stated operating costs in Scottish Water's plan by some £40 million over four years.
- **PFI costs:** In the Strategic Review of Charges we accepted the former authorities' estimates of the costs associated with PFI (Private Finance Initiative) schemes and did not seek to include an efficiency target for PFI. The strategic business plan forecast that PFI spending would be higher. This resulted from a reallocation of operating expenditure. Again, in order to ensure a like-for-like comparison, stated operating costs had to be increased by around £3 million a year.

- **Pace of change and associated risk:** We analysed this issue in detail in the Strategic Review² and there was no new evidence that was not considered in detail at that time.

- **Effectiveness of the transition team:** Scottish Water stated that slow progress in its first year was inevitable because the transition team was not fully effective. This claim did not bear scrutiny because:

- many critical organisational and strategic decisions were taken in advance of the legal establishment of Scottish Water; and
- many of the senior managers of Scottish Water were closely involved in the transition process.

We could not see any valid justification to blame the transition arrangements for the lack of progress made in the first year of Scottish Water.

- **Level of service to customers:** Scottish Water is proposing a customer focused strategy. There was no evidence that its proposals would result in higher costs. It is likely that customer service in 2005-06 will be broadly similar to that offered by the privatised companies. This did not seem to justify any change in targets.
- **New operating expenditure:** In its strategic business plan, Scottish Water raised concerns regarding funding the operating costs of newly installed treatment works in 2001-02. The allowances made available in the Strategic Review of Charges should be more than adequate to cover any additional operating expenditure.
- **Costs of meeting tight consent standards for effluent discharges:** Scottish Water claimed³ that consents set by the Scottish Environment Protection Agency provide a higher level of environmental protection than those issued to the English sewerage companies by the Environment Agency. This argument had little merit. Even if it could be

proved that compliance standards in Scotland were more demanding, current actual discharge compliance levels in Scotland, relative to those in England and Wales, are poor. Until the levels of compliance are comparable, there would seem to be no possible case for additional revenue. Moreover, Scottish Water currently benefits from the comparison with England as the operating costs allowed reflect the much greater compliance currently achieved in England.

- **Staffing issues:** Scottish Water has claimed that it is unduly constrained by its inability to use compulsory redundancy. This claim was without merit. It is up to management to decide on an appropriate level of employment and an appropriate per capita cost. The experience south of the border (where both staffing levels and average salaries vary widely) has shown that these issues can be managed successfully, even without the 'spend-to-save' funding that was made available in the Review. Such funding is not allowed to the privatised companies.
- **Asset quality:** Scottish Water has estimated that the additional costs associated with running its large number of small assets may be from £10 million to £40 million higher than an equivalent company south of the border. Our Office's econometric models estimate the extra efficient cost incurred by Scottish Water because of its large number of small assets is some £18 million. This was taken into account in the efficiency targets set in the Strategic Review of Charges. This is equivalent to around £30 million at Scottish Water's level of efficiency at the time. There also appeared to be no material factors relating either to the level of investment or to the condition of assets that put Scottish Water at a disadvantage relative to the comparator companies.
- **Levels of inherited leakage:** Scottish Water states that its relative operating cost performance suffers from its high levels of inherited leakage. After detailed analysis, we concluded that Scottish Water

² Strategic Review of Charges 2002-06, page 194.

³ Explanatory Submission, 25 April 2003, page 22.

actually benefits from comparison with the companies south of the border since Scottish Water is not currently required to meet the costs of reducing leakage.

- Capital expenditure inflation:** Scottish Water asserted that it needed more money to meet increased capital costs due to inflation in capital works. In the Strategic Review of Charges, we estimated both capital expenditure inflation (COPI) and Retail Price Inflation (RPI). As with most forecasts of inflation, both estimates have turned out to be inaccurate. The estimate of COPI proved, at that point in the period, to be too low and the estimate of RPI too high. If the estimates were to be correct for the remainder of the regulatory period, Scottish Water would benefit by a net £70 million. If COPI continues at its current rate and RPI reverts back up to 2.5%, then Scottish Water may suffer to the tune of up to £24 million. We considered that delivery of outputs to customers would not be materially affected by these potential variances.
- Property disposals:** Scottish Water claimed that the target for property disposals in the Review was unreasonable. We believed that the estimate of the potential total proceeds from property disposals was reasonable. The estimate implied a rate of sale that was less than had been achieved south of the border each year since privatisation in 1989. Although Scottish Water did not quite reach this level in its first year, the three authorities achieved higher levels in their final year. We also noted that Scottish Water reported the closure of only 1 of 39 offices and 1 of 96 depots in 2002-03 (the first year of the Review), yet still came close to reaching the target in the Strategic Review of Charges.

Risks

The Minister's letter also asked about the risks facing Scottish Water. It is important to distinguish between the specific risks that relate to the normal operation of a water and sewerage company and the systematic risks

that are not directly within the control of management. Customers have a right to expect that the specific risks of providing a water and sewerage service will be managed effectively.

The elements of systematic risks that need to be considered by owners relate to the primary function of ownership. In the privatised system, owners wish to maximise their return on investment. In the public sector model, Government wants best value for money for customers and to ensure that policy priorities (social, environmental and public health) are delivered. The Scottish Executive can only minimise the risks to the public sector model by achieving the right balance between price to customers and the level of service. Customers are increasingly making their voices heard on the issue of value for money⁴ and this issue is being taken up by the media to an increasing extent.

If customers begin to believe that they are not getting value for money then the public sector model for the water industry in Scotland may not be sustainable without radical action. The greater the extent of perceived failure, the more difficult, painful and costly may be the corrective actions required.

It is important to recognise that managers will always benefit from the asymmetry between their knowledge and experience and that of the customer, regulator or owner. In any large portfolio of assets (both human and physical), there are likely to be both poor and good performers. More information about poor performing assets may change our perception of risk, but it does not change the overall risk faced by the business. The overall risk faced by the business depends on the level of historic maintenance of the assets, the resources available and the quality of management.

Analysis has shown⁵ that investment spending per household will have been broadly the same in Scotland and in England and Wales in the period 1989 to 2006. Moreover, it appears that the condition of assets in Scotland is no worse than that south of the border.

⁴ We received 800 telephone and 100 written complaints in the period mid-March to end April 2003. This compares with 351 telephone and written complaints in the whole of 2001-02.

⁵ *Investment and Asset Management Report 2000-03*.

A regulatory settlement seeks to provide sufficient resources such that a good management can deliver the level of service expected by customers on a sustainable basis. Ofwat has more than 14 years experience in monitoring the delivery of an improving water and sewerage service. Its methods have survived rigorous challenge. Our analysis shows that had Ofwat conducted the *Strategic Review of Charges 2002-06*, Scottish Water would have faced much more challenging efficiency targets and would not have received the spend to save allowance. Under that scenario, Scottish Water would have received some £500 million less than was allowed by the revenue cap in the Review.

To put this in perspective, if the same public expenditure had been used, average bills to customers could have been some 12% lower. This would have reduced the amount payable by the average household by some £125 over four years. This contrasts sharply with the further increases in customer bills that would be required in Scotland if Scottish Water's proposed business plan was implemented and the recommendations as set out in the Strategic Review were not followed. It should be noted, however, that such challenging efficiency targets would have been extremely difficult to achieve and, in our judgement, not in the customer interest.

It is also the case that the companies in England and Wales are required to deliver a markedly higher level of service to customers (for example in their levels of leakage and responses to billing enquiries) than is currently provided in Scotland.

We considered in particular detail the rate at which Scottish Water had been asked to improve. We reviewed all of the evidence and concluded that the performance improvement required of Scottish Water was less than that achieved by the worst performing company in England and Wales during the mid and late 1990s. The target appeared more challenging because of the spend to save allowance that was made available to management in Scotland as part of the Strategic Review

of Charges. This is a considerable relative benefit because the privatised companies have to rely either on outperformance of more challenging regulatory targets or on shareholders' funds to meet any up-front reorganisation costs.

Conclusions of our review of Scottish Water's representations

Our response of 27 May 2003 concluded that if the management of Scottish Water performed at broadly the same level as the management of the companies south of the border, then there was no reason why the targets set in the Strategic Review of Charges should not, as a minimum, be achieved.

In the foreword we commented that the most desirable outcome from a customer perspective was for Scottish Water to deliver the efficiency targets and the level of service that were set out in the *Strategic Review of Charges 2002-06*. To do so would, however, require urgent management attention to address the following concerns:

- the level of some operating costs;
- the delivery of capital investment;
- the lack of information about the customer base; and
- the distraction represented by non-core activities.

We also commented that there was a requirement for a significant further strengthening of the regulatory framework.

We noted that customers would only benefit when the management of a monopoly utility is faced with clear and tight constraints on its budget and outputs. Regulation has a vital role to play in ensuring this happens – but it needs the support of the owners to operate properly. Experience from south of the border has shown that regulated utilities are capable of making significant efficiencies while improving levels of service.

6.4 The ten principles

Following our response of 27 May 2003 to the Minister for Environment and Rural Development on Scottish Water's representations on its business plan, the Scottish Executive, Scottish Water and this Office discussed how best to proceed.

In his letter of 25 March 2003, the Minister had made clear that he wanted an agreed set of financial targets for Scottish Water going forward. It was also our belief that clear targets are part of a robust regulatory framework and should provide customers and stakeholders with an assurance that the required efficiency, environmental and customer service improvements are being achieved.

We discussed the following issues:

- Differences in understanding between ourselves and Scottish Water on the calculation of its operating costs; specifically, the mechanism for making regulatory adjustments to Scottish Water's accounts to ensure accurate comparisons between years and between companies.
- The difference between Scottish Water's business plan estimates of its operating costs and the targets set out in the Strategic Review of Charges.
- Scottish Water's allowed level of debt at the end of the Strategic Review period and the associated impact of projected price inflation in the cost of capital goods.
- The treatment of over-collection and under-collection of revenue.
- Mechanisms for improving the regulatory process, particularly the quality of information.
- Methods for assessing the efficiency of Scottish Water.
- Improvements in the working relationship between Scottish Water and our Office.
- The treatment of non-core activities.
- Establishing a 'right of appeal' for future Strategic Reviews.

We had to find a settlement that protected the customer interest but that would also be acceptable to Scottish Water. Agreement was reached in July 2003 and on 31 July the Minister for Environment and Rural Development, Ross Finnie, MSP, wrote to us to set out the following Ten Principles of agreement:

Principle 1

Operating costs for the whole year 2005-06 should be at a maximum of £265 million, which is £7 million above the £258 million WIC monitoring target set in the Strategic Review. The £7 million allows for factors that were unknown at the time of the Review and comprises £4 million additional allowance for the higher operating costs position inherited by Scottish Water and £3 million for the different legal status of lateral sewers in Scotland. This will provide a significant protection for customers against future unnecessary price increases. In reporting the operating cost performance of Scottish Water, the Commissioner will comment upon progress towards this figure.

This principle sets out a clear target for operating costs at the end of the regulatory period. This is consistent with the target set in the Strategic Review of Charges. The small increase of £7 million is justified for the following reasons:

- Scottish Water inherited a worse than expected starting position in April 2002. We had already commented, in the *Costs and Performance Report 2001-02*, that the performance of the three former authorities on underlying operating expenditure was some £20 million above the level we assessed in the Strategic Review of Charges. Analysis had shown that Scottish Water should be capable of closing 80% of its efficiency gap, which reduces this impact to £16 million. This implied that an upward adjustment of £4 million per year was appropriate. There was a difference in the definition of a public

- sewer between the law in Scotland and that in England and Wales. In Scotland, the section of the sewer that runs from the sewer main in the street to the curtilage of the property is the responsibility of Scottish Water. In England and Wales the entire service connection from the sewer main into the property is the responsibility of the customer. This would have reduced the assessed efficiency gap between Scotland and England and Wales by just over £2 million per year.

Inflation increases the total impact of these two factors to £7 million.

This first principle established an agreed target for operating costs. This is fundamental to effective regulation and performance monitoring. Customers could still look forward to a significant improvement in the industry's efficiency.

Principle 2

Scottish Water's total debt at the end of the Strategic Review period may rise to a maximum of £2.47 billion. This level of debt includes an amount of up to £112 million reflecting estimates of projected price inflation (above 1.5%) in the cost of capital goods. The range will increase to a maximum of £2.71 billion when the remaining £235.2 million (post-efficiency, £305.5 million pre-efficiency) of 'red' projects in the WIC 18 capital investment programme are approved by all stakeholders for inclusion in the programme.

This level of debt is higher than we had targeted in the Strategic Review of Charges. In the Review we had suggested a level of debt of £2.4 billion in 2005-06.

In our Strategic Review, we had sought to place the industry on a sound financial foundation, with a balance between the financing demands placed on this and future generations. Prudent use of debt made the industry better able to absorb the 'shock' of underperformance against efficiency targets and higher capital inflation. In the public sector, debt is funded

through increased public expenditure. Increased levels of debt therefore disadvantage customers in two ways:

- interest is payable since the public expenditure comes in the form of a borrowing consent; and
- the significant opportunity cost of other public services is foregone.

We remain of the view that the likely outturn for debt is consistent with the sustainability of the industry in the long term and still offers some protection from unexpected shocks (eg higher interest rates). This means that the interest payments resulting from borrowing now should not impose an excessive burden on future customers through higher charges.

Scottish Water correctly indicated in its representations that capital inflation had run at a considerably higher level than we forecast at the time of the Strategic Review of Charges. Normal regulatory practice is that ex ante estimates of inflation are corrected at the time of the next Review – unless the impact is exceptional and threatens the delivery of agreed outputs.

I had assessed the impact of this higher capital inflation on Scottish Water. Up to that point the extra cost required to be met by Scottish Water was £21 million. If capital inflation had continued to run at those levels, this extra cost could have increased to £115 million. We continue to monitor capital inflation.

Principle 3

Scottish Water and the Commissioner will agree schemes of charges for both 2004-05 and 2005-06 in the near future, in such a way as to include price caps that are consistent with the revenue caps agreed in the Strategic Review. The purpose of this provision is to provide customers with a greater measure of certainty about their forthcoming bill. In addition, Scottish Water and the Commissioner will establish a mechanism to adjust future schemes of charges for over-collection and under-collection of revenue.

This principle is largely self explanatory. We have a statutory duty to consider and, where acceptable, approve Scottish Water's annual scheme of charges. This scheme of charges sets out the tariffs for all of the core services offered by Scottish Water⁶. Under this scheme there is always likely to be over or under recovery of revenue. Customers' interests are protected by ensuring that such over or under recovery is taken into account in future years.

Principle 4

A Reporter of regulatory information will be appointed as soon as practicable. The Reporter will operate in a fashion similar to Reporters in England and Wales. The Reporter should be appointed by the Commissioner and would be chosen from amongst persons that have served at least three years as an Ofwat-named Reporter. The Executive will meet the cost of the Reporter.

In England and Wales it is water industry practice for Ofwat to use consultant engineers (known as Reporters) to audit regulatory returns. The Reporter audits the information provided to the regulator by the companies and highlights any issues or inaccuracies.

We appointed a Reporter for the water industry in Scotland in December 2003. This has already improved the regulatory process in Scotland and will ensure that customers can have confidence that Scottish Water is subject to effective regulation.

In England and Wales the water companies pay for their Reporter. In Scotland, the Scottish Executive is meeting the cost of the Reporter from public expenditure.

The Reporter's duties cover all aspects of Scottish Water's regulatory returns. This will include auditing the annual regulatory return submitted by Scottish Water, its business plan submissions, and reviewing Scottish Water's proposed investment programme. Such scrutiny has played an important role in improving the quality and

reliability of information provided to Ofwat by the companies in England and Wales.

Principle 5

Measurement of Scottish Water's comparative and improving efficiency will take place on the basis of the method established in the Strategic Review of Charges. Appropriate costs (subject to audit by the Auditor General) incurred in the pursuit of activities not undertaken in 2000-01 will be removed from regulatory operating expenditure to the extent that these costs are funded by revenues from these new activities.

This links closely with Principle 6 below. Consistency and comparability of information between years is essential to the regulatory process. We need to compare like-for-like if our performance reports are to be objective. It follows that if the accounting rules used by Scottish Water change between years, then the financial information provided to us must be adjusted to ensure that it can be compared on a like-for-like basis.

Our analysis of Scottish Water's business plan highlighted the importance of ensuring that Scottish Water is fully aware of how we adjust costs for regulatory purposes. We are keen that Scottish Water understands the reason for each adjustment to the accounting information provided to us.

Principle 6

Subject to the agreement of the Auditor General, the Commissioner and the Auditor General for Scotland will work closely to establish the nature of prospective regulatory adjustments, prior to the Auditor General commencing audit of Scottish Water's accounts. It is intended that the broad nature of forthcoming regulatory adjustments may be set out in a note in the accounts in addition to (but not substituting) information contained within the existing accounting requirements. The Commissioner will request that the Auditor General for Scotland audit the process by which the Commissioner

⁶ Except trade effluent.

makes adjustments to information contained within the accounts and regulatory return made by Scottish Water to the Commissioner. After consulting the Commissioner and Scottish Water, the Executive will seek the views of the Director General of Ofwat on the nature and scope of adjustments that should normally be made to audited accounts for purposes of regulatory comparison.

This links to Principle 5 above. In order to provide transparency to the process of making regulatory adjustments to the information contained within Scottish Water's accounts, the Auditor General for Scotland⁷ will audit the process. The Scottish Executive will also consult with Ofwat on the equivalent process in England and Wales. This will provide assurance to customers and stakeholders that the regulatory adjustments made are robust and appropriate.

Principle 7

Scottish Water will agree to work with the Commissioner to put in place a range of measures to assist the improvement in their relationship. This is likely to include various matters, including for example, the sharing of reports prior to publication (for the purposes of factual comment), the provision of regulatory and other information to the media, and other mutual mechanisms for resolving routine working issues as they arise.

In his letter of 25 March 2003, the Minister for Environment and Rural Development, Ross Finnie, MSP, had expressed disappointment that our Office and Scottish Water could not agree performance targets.

We accept that the relationship was not ideal but would note that managers of monopoly utilities are not likely to welcome regulation nor consider it fair. It is not the regulator's duty to criticise or to argue with the regulated company, but to establish a framework which ensures that customers receive, on a sustainable basis, the best possible value for money. It is therefore our policy to maintain a professional, objective approach in our dealings with Scottish Water. It is perhaps inevitable that tensions will arise from time to time.

The measures outlined in this principle aimed to increase communication between our Office and Scottish Water. In particular, it was hoped that providing Scottish Water with an advance copy of performance reports would be helpful in reducing tensions. There has been a marked improvement in the relationship between Scottish Water and this Office. However, we will continue to criticise Scottish Water where we perceive that customers are not receiving the cost savings or standards of service they deserve.

Principle 8

Non-core activities that are new in nature or additional in extent to those passed to Scottish Water by the former Authorities may be pursued by Scottish Water (subject to the approval of Scottish Ministers) on the basis that they are funded by performance in excess of the agreed minima, taking into account progress towards the target for the end of the period.

We have stressed the importance of Scottish Water focussing on its core business. We believe that non-core activity is, at best, a distraction of management time for uncertain returns and, at worst, a potential waste of customer revenue. We remain of the view that customers of the core business should be fully protected from the potential risks of non-core activity. This would be best achieved by a robust and transparent ring fence of the core activities of Scottish Water.

In the forthcoming Strategic Review of Charges we will be able to focus solely on the core activities of Scottish Water. This change reflects the provisions of the Water Industry Act 2002. This Act restricted our role to promoting the interests of customers of the core business. As part of this ring fence, we have begun to establish regulatory accounts. These will ensure that customers of the core business pay only for core services. This work will be completed during the current financial year.

This principle allows Scottish Water to continue to pursue non-core activity but sets a clear framework that limits the potential impact on customers of the core business.

⁷ The Auditor General is appointed by the Crown, is independent and reports to the Scottish Parliament. His role is to examine how public bodies spend public money, to ensure that they manage their finances to the highest standards and that they achieve value for money.

Principle 9

The Executive will investigate setting up a prospective appeal mechanism to the Competition Commission.

The 2002 Act requires us to provide advice to Ministers in a Strategic Review of Charges. This advice should cover the factors to be taken into account or left out of account in the setting of charges. It is then up to Ministers to decide an appropriate level of funding for the industry. There is no formal appeal mechanism for Scottish Water.

In announcing the proposals outlined in the draft Water Services etc (Scotland) Bill, the Minister indicated his intention to create a Water Industry Commission and to provide it with powers to take decisions about prices within a guidance framework provided by Ministers. This effectively means that the Commission will mirror the role of other utility regulators in the UK. Scottish Water will have a right of appeal to the UK Competition Commission. Again, this is consistent with other utility regulation models.

We welcomed this proposal. It ensures that challenges to regulatory decisions can be assessed in an objective and independent way. It will also help reinforce the requirement on our Office to ensure that regulatory decisions are consistent with the recommendations of the Better Regulation Task Force, ie that they are transparent, accountable, consistent, targeted and proportionate.

Principle 10

Scottish Water will engage with the Commissioner in improving the quality of data supplied to the Commissioner.

Information is vital to effective economic and customer service regulation. Scottish Water is required to provide us with a wide range of information, covering all aspects of its water and waste water business. This information allows us to monitor and report on Scottish Water's performance and to make comparisons with other

service providers, particularly the water and sewerage companies in England and Wales. It is therefore essential that the information we receive from Scottish Water is appropriate, accurate and timely.

Specifically, we need accurate and reliable information on which to base our decision-making when we set efficiency targets for Scottish Water. We also need accurate information in order to be able to assess Scottish Water's actual performance in meeting the targets. This is most likely to be achieved if Scottish Water works closely with this Office to understand our requirements. For our part we are keen to explain our analyses to Scottish Water.

6.5 Impact of the ten principles

In reaching agreement on the ten principles, we were adamant that any proposal should be consistent with the customer interest. We believed that this process should either improve our ability to undertake regulation, or improve the likelihood that Scottish Water would achieve its efficiency targets. The ten principles achieve these objectives by providing a framework for improving regulatory information and by establishing a common understanding of Scottish Water's targets.

A number of the principles came into force immediately once they were agreed between the parties. For example, the principles clarified the level of, and basis for, some financial and economic targets.

A number of the other principles required further action before they could be implemented. In particular, one principle concerned the introduction of a Reporter and another committed the Scottish Executive to consider setting up an appeal mechanism to the Competition Commission.

A Reporter for the water industry in Scotland was appointed in December 2003. Chapter 14 discusses the role of the Reporter and his contribution to effective regulation in more detail. This will include assessing the reliability of information provided by Scottish Water, and identifying areas where Scottish Water can improve the

quality of its information. Knowledge of industry best practice allows the Reporter to indicate feasible improvements and how they might be achieved.

Principle 9 committed the Scottish Executive to consider an appeal route to the Competition Commission. The Draft Water Services (Scotland) Bill, which was introduced in June 2004, proposes a number of important changes to the regulatory framework, including granting us powers of determination and allowing Scottish Water a right of appeal to the Competition Commission.

The ten principles have helped clarify the roles of the economic regulator and of Scottish Water. We welcome their introduction as an important step forward in improving the regulatory process for the water industry in Scotland. This brings significant benefits to customers and stakeholders.

6.6 Conclusions

During the latter half of 2003 and first half of 2004, Scottish Water appears to have made good progress in relation to its efficiency targets. We consider that it is likely that this improvement has been encouraged by our agreement on regulatory targets.

The process of reaching agreement was not easy. It has, however, provided a sound framework for regulation of the water industry in Scotland.

Section 1: Chapter 7

The use of borrowing in the Scottish water industry

7.1 Introduction

This chapter examines the issue of the debt owed by the Scottish water industry, which is an increasingly topical subject. This covers both the debt owed to the industry by customers and the increased debt level of the industry.

There has been a great deal of discussion about whether or not the industry should borrow more and reduce prices to customers. This chapter reviews the arguments that have been raised in favour of a higher level of borrowing and concludes that a sustainable and prudent level of borrowing would be in customers' interests. Before concluding that borrowing a lot more now is in the interests of customers both now and in the future, it is important to consider not only the short-term price benefit that could result from increased borrowing, but also the additional exposure to risk, the potential disincentive to improve efficiency and the future level of prices.

The Scottish water industry is cash negative: that is to say it spends more than it receives in customer charges. This situation is likely to continue for the foreseeable future. As debt increases, so too does the total interest bill that must be met by customers. Managing debt at prudent and sustainable levels is therefore critical if the industry is to be able to respond to operational shocks.

The replacement cost of Scottish Water's assets has been estimated at £32 billion. Scottish Water has to invest consistently each year in maintaining its assets, and also has to cover significant operating costs. And it currently has an interest bill of £137 million. Table 7.1 summarises Scottish Water's expenditure in 2003-04.

Table 7.1: Outline of expenditure

	2003-04 £m
Capital expenditure	389
Operating expenditure	308
Public Private Partnerships	113
Spend to save	72
Interest	137
Total	£1,019

This chapter addresses the following issues:

- debt as a source of funding;
- debt in the Scottish water industry;
- transparency in the level of debt;
- the risk of a large debt burden;
- a proper use of borrowing; and
- the optimal level of debt.

7.2 Debt as a source of funding

Debt is a potential source of funds for a business; a company will borrow when it is short of cash. This may be for short-term operational reasons (for example to cover working capital until goods or services are paid for) or for investment. If a company borrows for operational reasons, the company has to budget for the interest costs and the repayment of principal. If a company uses debt as a source of funds for investment, management has to make sure that the additional return on the investment covers the interest payment and, ultimately, repays the capital.

In either case, the company is committing its future income to pay for today's cash resources. It is important to remember that debt is not an additional source of revenue.

Consideration of the prudence of increasing debt is more complicated in a regulated business. An economic regulator seeks to ensure that customer charges are set at the lowest level consistent with a sustainable business. The regulator will therefore typically only allow an increased return (ie increased revenue from customers) to be earned by a company if there has been a net increase in the total asset base. As such, borrowing any more than this net increase in the total asset base would not be prudent.

If a company continued to borrow in excess of the net new assets created, it would not take long for the revenue that its regulator allowed to be less than its outgoings (not including new investment). In a private sector context, insolvency would follow.

7.2.1 The funding of a public sector company

Public sector companies have two principal sources of funds: customers and loans provided by Government. When we set revenue caps in the *Strategic Review of Charges 2002-06*, we expected that Scottish Water would generate trading surpluses in each year. Our assumption was that these surpluses would be used to part fund the £1.8 billion investment programme. Unlike in the private sector, there are no shareholders who expect to receive a dividend (a share of the profit) and therefore all surpluses are re-invested.

Public corporations can also borrow from Government. Governments do not make lending decisions in the same way as bankers. A banker will primarily be concerned with whether the borrower will meet the interest payments and be able to repay the principal. The availability of government loans will depend principally upon public expenditure priorities and the state of the national economy. Government may therefore lend when a banker would not, and vice versa.

7.2.2 Additional funding options in the public sector

A possible alternative to borrowing from Government is to enter into a Private Finance Initiative or Public Private Partnership. These agreements can allow the public sector to reduce the extent of project risk that they face and to make use of the management and financial resources of a private company. In essence these contracts are very similar to a secured debt. The public sector organisation commits to buying a service on agreed terms for an extended period. These payments are made at least annually. The payments replace the annual interest payments and the operating costs that would have been incurred.

One of the advantages of such contracts is that they allow the public sector to access resources for investment, which may not otherwise be available because of restrictions on public expenditure. Quite significant set up costs are often involved with these contracts and, as such, major investment programmes will tend to be more suitable.

One important consideration is the cost of capital. The cost of capital is lower in the public sector than in the private sector. This cost disadvantage will require the private sector partner to accept risk, or be able to offer greater innovation or efficiency for the arrangement to represent value for money.

7.2.3 The funding of a private sector company

A private company has three potential sources of funds. It too can use previous surpluses and new debt to invest, but it also has the option of selling a part of itself in order to raise funds. Debt and equity funding are external sources of funds (the current owners actually pay now for these funds). Retained surplus (profit) is an internal source of funds, the use of which incurs only an opportunity cost in immediate income foregone.

A private company faces a number of different considerations when it comes to debt. The price (interest rate) that a company will pay for debt finance will depend on the banker's view of the likelihood of the company meeting interest payments and being able to repay the principal. The banker will set a higher price for debt when he perceives that there is a risk of default (not meeting interest payments or not being in a position to repay principal). The risk of default depends on the underlying trading of the company and other calls on its operating profit. A banker will require a higher interest rate when a company already has significant borrowing.

The second significant difference is that a company can face a refinancing risk. A refinancing risk occurs when a company reaches the end of a loan agreement and wishes to borrow to repay the principal on the previous debt. There are two main risks: first that a company is

simply not able to borrow (circumstances have changed and the banks consider that the risk of default is too high); and second that the company may face a higher real interest rate (the actual interest rate less the rate of inflation). This would also be the result of a reassessment of the risks of default.

The second source of external funds for a private company is equity. This involves selling a part of the company. The current owners sell a share of the future profits of the company to a third party. This third party becomes a joint owner and has the same rights and responsibilities as other owners.

The retained surplus in the private sector differs from the public sector in that, in most cases, a share of the profit (dividend) will be paid out each year to the owners. If the company has the potential to grow its business significantly, owners may prefer to accept a lower share of the profits today in order to receive a higher share in the future. Likewise, they may choose to increase the use of debt (assuming that its cost is less than the expected return on the investment project) in order to maximise their share of the profit relative to the internal funds they have invested. Private investors will typically want to maximise the return on their investment.

7.2.4 Funding a regulated company

In the private sector the regulator will set a cost of capital that he considers sufficient to allow an effectively managed company to finance its functions. In establishing the cost of capital, the regulator will make an explicit assumption on an appropriate gearing ratio. The cost of capital is a weighted average of the cost of debt and the cost of equity (retained earnings and contributed capital). A company may try to improve the return for its equity holders by increasing its debt. Initially increasing debt may improve the return relative to risk, but as debt increases further it is likely that the return relative to the risk for the equity holder would get worse.

In a public sector model, the trade-off between debt and equity returns is not an issue. All retained earnings will remain in the business and will be used to the benefit of

customers. In a regulatory capital model, customers pay a charge that depends upon the level of investment, the depreciation of the asset base, a rate of return on the regulatory capital value and allowable operating costs. The level of debt does not influence charges directly.

As new investment is added each year, the total value of the regulatory capital value will increase each year. Charges will gradually increase over time to reflect the larger capital value that needs to be remunerated. Customers do not therefore pay for the use of an asset before it has been added to the regulatory capital value. If the proportion of debt to regulatory capital value stays the same, there is no inter-generational wealth transfer. Moreover, if the cost of capital allowed on the regulatory capital value is the same as the borrowing cost of the public sector company, there should be no advantage from wanting to increase debt (beyond increases allowed as the regulatory capital value increases), and therefore risk future customers paying either too much or too little for the service that they receive.

7.3 Debt in the Scottish water industry

7.3.1 Scottish Water's current debt situation

Scottish Water was formed on 1 April 2002. It inherited debt of nearly £2.1 billion from the three former water authorities. In the *Strategic Review of Charges 2002-06*, we expected Scottish Water to increase its borrowing quite significantly in its first three years.

Table 7.2: Strategic Review of Charges debt profile

Financial year end	2002-03	2003-04	2004-05	2005-06
Net debt	£2,293m	£2,395m	£2,442m	£2,436m

Table 7.3: Actual debt profile

Financial year end	2003	2004	2005	2006
Net debt	£2,149m	£2,279m	-	-

As Tables 7.2 and 7.3 show, in Scottish Water's first two years, debt has increased less quickly than was anticipated in the *Strategic Review of Charges 2002-06*.

This is principally due to a slower start in delivering the capital programme.

In Table 7.4, we repeat an analysis of forecast debt that was provided to the Finance Committee during its investigation. We would expect to update this forecast based on information contained in Scottish Water's first draft business plan. However, it will almost certainly be considerably higher than the £2.4 billion targeted in the Strategic Review. The principal cause of higher debt will be delays in achieving the efficiency targets. Higher capital inflation may also be a factor.

A comparison of the current actual debt position with the assumptions in the Review is shown in Table 7.5.

Table 7.4: Debt forecast provided to Finance Committee

Closing debt – 31 March	2003-04 £m	2004-05 £m	2005-06 £m
	£2,279	£2,509	£2,709

Table 7.5: Variance analysis

Financial year end	2002 £m	2003 £m	2004 £m	2005 £m	2006 £m
Inherited debt	2,098				
Revenue		(7)	0	-	-
Operating costs		27	43	34	7
Investment		(84)	(11)	85	137
Spend to save		(14)	(35)	40	10
Interest payable		(12)	(12)	(3)	7
PPP Contracts		(6)	(3)	-	-
Other		(3)	45	28	45
Total debt		2,149	2,279	2,509	2,709
Cumulative debt Variance		(144)	(116)	67	273

7.3.2 Debt commutation

Many commentators have asserted that the Scottish water industry was treated unfairly in the amount of debt that was commuted when the industry was reorganised in 1996. They argue that the water authorities in England and Wales had all of their debt written off before they were privatised, whereas less than half of the total water

and sewerage debt accumulated by the Regional and Island Councils was commuted. This assertion does not bear scrutiny; indeed, the Scottish water industry appears to have received a significantly better deal than the industry south of the border.

It is important to understand that debt cannot be commuted without cost implications for taxpayers and water customers. Only the original lender or a third party can remove the obligation to pay interest and repay principal at the end of the debt term. In the case of the original lender a loss of the original capital has to be accepted as well as a loss associated with the interest payments that are foregone. If a third party wants to eliminate the debt, they can repay in full or may choose to pay the interest charges and make gradual capital repayments or make 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. Since domestic customers will typically benefit more directly from public services, such a commutation of debt is likely to benefit the commercial sector more than households. Therefore even if there were significant benefits in lower water charges, it is unlikely that this would be in the interests of all customers. Customers may mistakenly accept modestly higher increases in bills (effectively reduced only as a result of the debt commutation) because the full cost that they actually face (other public services foregone or increased taxes) is not immediately apparent. Moreover, there is a material risk that such an increase in the affordability of new debt for Scottish Water would reduce the pressure on management to improve efficiency.

At privatisation in England and Wales, net debt of £4.95 billion was commuted. In addition, the Treasury provided a cash injection (known as the 'green dowry') of £1.57 billion. The total cost of the transaction before the proceeds from privatisation was £6.52 billion. This is

equivalent to £275 for every household in England and Wales. Privatisation raised £5.22 billion. The net cost to the Treasury of the reorganisation of the water industry, therefore, was £1.3 billion. The net cost per household was approximately £55. The Treasury also transferred accumulated tax losses of £7.76 billion to the companies, although this did not have a cash cost to the Treasury.

Financial reorganisation in Scotland was more straightforward. When the three water authorities were created in Scotland, the Treasury commuted some £700 million of a total of £1,700 million of local Regional and Island Council debt relating to water and sewerage activities. This left £1 billion of debt on the starting balance sheets of the three authorities. Clearly there were no receipts from privatisation to reduce the costs of the restructuring, so the total cost to the Treasury from this reorganisation was £700 million. This amounts to more than £330 per household. The cost to the Treasury was therefore around six times greater than that incurred from reorganising the water industry in England and Wales.

At the time of the Strategic Review, the industry in Scotland had £1.7 billion in tax losses. These were proportionately more than in England and Wales. These tax losses were transferred to Scottish Water by the Water Industry (Scotland) Act 2002.

It has also been argued that the Scottish water authorities were unfairly treated because of the high cost of embedded debt after 1996. This argument also does not stand detailed scrutiny. The average coupon (interest charge) on the embedded debt was 8.40%. However, this compares very favourably with the dividend yield of between 8.10% and 9.68% that had to be offered to potential shareholders in order to ensure that privatisation was a success¹. In both cases, customers have to meet these costs.

The public sector industry in Scotland will also continue to have a cost of capital advantage. The interest rate charged by the Scottish Consolidated Fund is usually

around 0.2-0.4% lower than the equivalent rate for the highest quality private sector debt.

The impression that customers in Scotland have been put at a disadvantage can only result from operational and capital inefficiency.

7.3.3 The cause of increasing debt

The total net debt of the three water authorities increased from £1 billion in 1996 to £2.1 billion in 2002. Debt increased because revenue was insufficient to cover the operating costs, capital investment and interest charges incurred by the three authorities. It could be argued that if the net debt added was less than the value of new investment, then the net asset value of the authorities was increasing. This would be misleading.

In economic terms, there are two important additional considerations: first, it would not be prudent to enter into debt (a real liability) to finance an asset that was worth less than the amount paid (eg an asset purchased inefficiently); secondly, a company must be able to earn a return on an asset if it is to meet the interest costs and repayment of principal associated with the purchase of the asset. In a regulated business this requires the regulator to allow sufficient return on the purchase price to meet the financing costs.

In the Strategic Review of Charges, our analysis identified that the efficiency of the Scottish industry lagged considerably behind that of the English and Welsh companies. In our Costs and Performance Reports² we began to look at the costs per customer of inefficiency. In our most recent report, we noted that out of an average domestic bill of £241, £80 or 33% was the direct result of inefficiency. Presented in revenue terms, this means that customers paid more than £300 million to finance inefficiency. The costs of this inefficiency were greater than the net new debt taken on by the three authorities. In real terms, the customer has received no value for the extra debt accumulated and it follows that the industry's finances have been made less sustainable by the increase in borrowing.

¹ The effective cost of interest payments is lower than immediately presented in this comparison because interest is an allowable expense for tax purposes, dividends are not. The post-tax comparison is 5.60% versus 8.10% to 9.68%.

² See our *Costs and Performance Reports 2001-02* and *2002-03*.

It is clear that the three authorities sought to delay price increases by increasing total net debt. Such an approach will increase customers' bills to a level higher than would otherwise have been necessary. The additional cost is at least the net present value of the annuitised interest payments (approximately equal to the amount borrowed). When a regulator sets prices using the regulatory capital value method, revenue is allowed only when an asset has been added; if interest obligations increase quicker than the allowed revenue, the company's financial position will worsen increasingly quickly. Ultimately, the company's solvency would be affected.

7.4 Transparency in the level of debt

From a customer perspective, it is important that the industry is managed on a sustainable basis. This requires the levels of revenue and debt to be kept in balance. In other words, management must face a hard budgetary constraint. This constraint is essential if customers are to have confidence that management will focus on improving efficiency.

A hard budgetary constraint will also impact on the owner of a business. The owner needs to take difficult decisions in the event that performance (for whatever reason) lags behind what is expected. The provision of some more short-term capital may be part of the solution, but there will also be a need to ensure that other steps are taken to ensure that performance reverts back to an acceptable standard. The ten principles (as discussed in Chapter 6) are a good example of such decisive action.

7.5 The risk of a large debt burden

7.5.1 The cost of debt can increase

Interest rates are currently at or around recent historical lows. The premium charged for longer term borrowing remains low. Consequently, additional borrowing and the refinancing of maturing debt has less of an impact on customers than it might have in the future. If interest rates increase and a premium for longer-term debt is

re-established, then the impact of Scottish Water's greater borrowing will start to increase prices.

Some might argue that we should borrow more now because interest rates are low. This is, of course, an option so long as we are prepared to increase prices more quickly and probably to a higher level than would otherwise have been the case.

7.5.2 Exposure to operational shocks

The water industry is generally highly predictable. However, operational shocks can occur and can be a significant drain on resources. A good example is the cost of the drought in 1995 for Yorkshire Water (approximately £250 million), which had to be absorbed by equity holders of the company. In a public sector context there are no equity holders to absorb this risk. The result is either a direct increase in prices immediately or an increase in debt with a smaller, though permanent, increase in price to customers. In effect, addressing such a shock through increased debt will penalise future customers – unless the industry has been managing its debt level to take account of the possibility of an operational shock. This is discussed in more detail in our paper to the Finance Committee³.

In addition, the private sector provides a further level of risk management that can benefit customers. The higher cost of capital required by the private sector increases bills to customers. However, customers benefit because within the private sector model there are strong incentives that help to reduce the exposure of customers to financial risk. The commercial interests of the company are served by ensuring that management takes action to minimise the impact of external shocks on the business.

7.6 A proper use of borrowing

7.6.1 To smooth peaks in investment

Borrowing can and should play an important role in smoothing the cash needs of Scottish Water over periods of particularly high investment. However, the

³ *Ensuring a financially sustainable water industry in the public sector*, 13 February 2004.

borrowing should only be used when legislative, practical, or operational deadlines require accelerated capital spending. There appears to be no realistic likelihood of efficient capital spending declining in real terms in the foreseeable future. It is argued that we should borrow to pay as we receive the benefit of the use of the assets. The burden of payment is therefore spread across those who benefit. This works for projects that are one-off: for example, the building of local swimming pool. The water industry is quite different in that it owns a huge portfolio of assets.

It is generally agreed that 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 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 involve relatively 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 principle 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 have an asset 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 maintained.

On occasion there will be a need to improve the water and waste water assets that 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 money raised and the asset replacement liabilities back into balance.

7.7 Conclusions: the optimal level of debt

7.7.1 A level of debt consistent with sustainably affordable prices

It is important to take full account of the consequences of decisions about borrowing. If borrowing increases prices for future generations simply to delay price increases which the current generation should bear (for example, not paying for inefficiency) then this penalises future generations. If the costs of borrowing are less than the extra return that a regulator will allow for the addition of an efficient new asset, then there is no problem with an increase in borrowing.

Importantly, borrowing should not be seen as a short-term solution to underperformance unless other measures are also taken. Borrowing to fund underperformance does not create any additional value for customers. No new customers are added to the network, no improvements are made to the environment and public health performance of the assets and no improved maintenance regime is introduced. The borrowing could be justified, however, if steps are taken to ensure that performance improves. Management's interests must be aligned with those of the customers: an affordable sustainable industry.

7.7.2 Debt must be prudent

It is important that a company retains financial flexibility so that it can respond effectively to any operational or legislative shocks. There are fewer financing options in the public sector, so any shocks will typically impact on customers more immediately than in the private sector. It would therefore benefit customers if the management takes borrowing decisions such that all of the costs of a shock do not fall on future generations of customers.

7.7.3 Treasury rules

In the public sector, it is important that borrowing is consistent with the Treasury's 'Golden Rule'. Although the Golden Rule applies to the management of the Government budget, its broad principle could also be

applied to a public sector water business. The Golden Rule is that:

“over the economic cycle, the Government will borrow only to invest and not to fund current spending”.

The Treasury's Golden Rule was introduced to ensure that, as a country, we measure the level of our current consumption accurately. The rule warns against turning to borrowing to meet the costs of current consumption. It states that to borrow in order to fund current consumption would be unfair on future generations who would be left with the bill.

In a long-term industry, such as water, it is desirable to apply the same principles. This would require us to take a prudent view of current consumption. Of course, it is not straightforward to assess the full economic costs of providing a water and sewerage service to the current generation. However, few would argue that these costs ought to include the true underlying deterioration in the asset base of the water industry in Scotland.

Some commentators have interpreted the Golden Rule as implying that borrowing should, as a matter of course, be used for all investment that adds any value to the asset base. This, however, would not be a correct interpretation. The Golden Rule does not require that borrowing must be used in every case of investment that adds any value to the asset base. The Golden Rule requires that account is taken of the likely capital spending over the investment cycle – which for the water industry can vary from the medium to the very long term. In particular, the Golden Rule requires a proper distinction to be made between what is really current consumption and what is genuine long-term improvement of assets. In other words, before borrowing, we should be sure that we are genuinely investing sufficiently to improve the average quality of the asset base.

In this regard, it is important to note that most observers expect that investment will continue to have to increase. Moreover, the Golden Rule does not in any way sanction borrowing irrespective of the ability to pay back

both the principal and interest on a loan within the investment cycle.

As outlined above, much of the investment in 'new' assets reflects ongoing trends, in that society's expectations about water purity and environmental cleanliness continue to rise, and 'new' assets will always be needed to match changes in customer numbers and location. It could reasonably be argued that the Golden Rule would require such ongoing recurrent costs to be met without long-term borrowing. Given that we know there will be an ongoing need for investment in improving the environment and public health for at least the next 10-15 years, it would be inconsistent with the Golden Rule to borrow to meet the costs of any part of the new investment that has an expected asset life of less than 10-15 years.

I did not adopt such a strict interpretation of the Golden Rule in the Strategic Review of Charges. I did, however, apply a financial constraint, as explained below, to ensure that Scottish Water could cover its costs.

These indicators are not an attempt to force companies to adopt a particular capital structure. Ofwat views these indicators as consistent with its cost of capital – if a company manages its finances differently this may impact adversely on its cost of capital and hence the sustainability of its financing.

7.7.4 Prudent borrowing in England and Wales

When setting a cost of capital, Ofwat consults extensively with the credit rating agencies and the providers of finance. Ofwat will take account of these expectations in setting prices. Ofwat sets the key financial ratios that it regards as consistent with the sustainable financing of the industry⁴.

Ratio	Threshold
Historic cost interest cover	minimum 2.0x
Average debt/capital 2000-2005	45%-55%
Cash interest cover (EBITDA)	minimum 3.0x
Cash interest cover (EBIDA)	minimum 2.0x
Debt payback period (EBITDA)	maximum 5 years
Debt payback period (EBDA)	maximum 7 years
Cashflow to capex ratio (EBDA)	minimum 40%

⁴ *The tide turns for the UK water sector: Assessing the impact of the regulatory review*. Moody report, page 7, 17 August 1999.

Section 1: Chapter 8

Finance Committee Inquiry

8.1 Introduction

This chapter describes the background to the Finance Committee's investigation into the Scottish water industry; the evidence that was presented; the Committee's conclusions and the response of this Office to those conclusions. We also summarise the Scottish Executive's response. This response, and their detailed proposals included in the Water Services etc (Scotland) Bill, are also covered in more detail in Section II.

8.2 Background

In June 2003, the Finance Committee of the Scottish Parliament agreed to write to various organisations to establish the current position of the water industry in Scotland with a view to pursuing an investigation into Scottish Water at a later date. The Committee wrote to a number of organisations including:

- Scottish Water
- The Water Industry Commissioner for Scotland
- Scottish Council for Development and Industry
- CBI
- Federation of Small Businesses
- Forum of Private Businesses
- Scottish Trades Union Congress
- Convention of Scottish Local Authorities
- Water Customer Consultation Panels
- Drinking Water Quality Regulator
- Communities Scotland.

In November 2003, the Committee appointed two of its members, Jim Mather, MSP and Jeremy Purvis, MSP to act as reporters on behalf of the Committee. The

Committee agreed the following remit for the reporters' investigation.

"To investigate the following issues:

- accountability – looking at the role of the Water Industry Commissioner, the relationship with Scottish Water, the Scottish Executive and local authorities;
- structure – looking at water charging and debt management;
- investment – looking at capital projects, the profile of procurement and borrowing, billing and financial management; and to suggest potential areas for the questioning of Scottish Water and the Water Industry Commissioner...."

The Committee published its report in April 2004. The Scottish Executive made an initial response almost immediately and a further response on 14 June 2004. We responded to the Committee at the beginning of June 2004.

8.3 Reasons for the investigation

An increasing amount of press attention had been given to water industry issues during 2003. These included:

- delivery of investment and an apparently increasing number of development constraints;
- disagreements between this Office and Scottish Water about its performance;
- the large increases in charges that some small businesses had faced – this had become a high profile issue, with representative organisations such as the Federation of Small Businesses and the Scottish Forum for Private Business raising concerns; and
- a paper written by Analytical Consulting Ltd, and submitted to the Finance Committee, suggesting that public expenditure rules had been incorrectly

applied and that customer charges were higher than necessary as a result.

8.3.1 Delivery of investment and development constraints

In its consultation on the level of investment during the *Quality and Standards II* period, the Scottish Executive set out three distinct investment strategies. Only the 'enhanced' option contained any significant money for development constraints, although it was recognised that some of the infrastructure renewals and quality investment programme would help ease development constraints in some areas. After the consultation, the Scottish Executive decided to adopt the middle option, but to add a further £50 million to address demand for first time water and sewerage connections in rural areas.

In the Strategic Review of Charges 2002-06, we advised Ministers that Scottish Water should be able to deliver the required investment outputs for £1.8 billion. This was a reduction of some £500 million on the total cost of the programme that had been estimated by the three former water authorities. The progress in delivering the investment programme in the first year was slow. This slow progress undoubtedly increased the frustrations of local developers and planners.

Concerns about development constraints did not relate to a single area of Scotland, but came from both rural and urban areas and from across the country. These concerns were exacerbated by a misunderstanding of the capital expenditure efficiency targets that underpinned our advice to Ministers in the *Strategic Review of Charges 2002-06*. We believe that an efficiency in no way compromises output or risk profile. As such we continue to believe that the combination of customers' charges and new debt from the Scottish Executive should ensure that Scottish Water has sufficient resources to meet all of the outputs of *Quality and Standards II*.

8.3.2 Disagreements about performance

In the *Strategic Review of Charges 2002-06*, we recommended that Ministers "...require the publication by

..[this] 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". We were concerned that performance should be measured objectively and that customers should have access to reliable information about the quality and cost of the service they receive.

When we completed our analysis in 2001, it was clear that the industry in Scotland would have to make considerable progress in order to meet the service level or the cost performance of the companies south of the border. There was clear evidence from England and Wales that objective annual statements of performance had stimulated companies to seek to improve their relative position. We understand that no management will ever want to be shown to be at the bottom of the league in performance terms. However, recognising the required level of improvement is a vital first step in making the progress that customers have the right to expect.

We want Scottish Water to be successful since this will ensure that customers receive value for money. These reports will continue to play an important role in encouraging Scottish Water to improve.

8.3.3 Increases in charges to small businesses

Many small businesses faced large percentage increases in their bills between 2002-03 and 2003-04. Small customers in the former West of Scotland Water Authority area were worst affected. Three factors came together to cause these increases. It is unfortunate that comment on these increases focused mainly on the increase in standing charges.

The Strategic Review of Charges had recommended an increase of 7.8% in the revenue cap of Scottish Water. The three authorities would have required a larger increase in their revenue (at least 10.3%) had the creation of Scottish Water not been approved by the Parliament. Most smaller businesses would have seen an increase modestly in excess of the revenue cap if there had been no harmonisation and no move towards cost-reflective pricing.

In the Review we highlighted the potential risk to Scottish Water's revenues (and hence the charges of all bar the largest water users) from competition. This risk could be mitigated if Scottish Water improved its efficiency and cost allocation. It was also likely to be important that Scottish Water's tariffs should reflect the cost of providing the service.

Cost-reflective tariffs were likely to mean relatively higher standing charges and relatively lower volumetric charges. The main costs of supplying a water and waste water service are fixed; that is, they only vary slightly with the amount of water used or waste discharged. It is therefore reasonable that a cost-reflective charging structure should have a relatively high standing charge.

It was clear that prices in the former North of Scotland Water Authority area were going to rise faster and further than charges in the southern half of Scotland. One of the perceived benefits of the creation of Scottish Water was that charges could be harmonised across the country. The costs of harmonisation would be felt most in the former West of Scotland Water Authority area. It would also have an adverse impact on small business customers in the former East of Scotland Water Authority area that had a high rateable value, but benefit identical customers in the former North of Scotland Water Authority area.

The very high percentage increases resulted for customers who had very low bills (it would often have been more economic to provide the service free of charge to avoid billing costs). These customers faced an upward move in their bill as a result of the underlying increase, the harmonisation and the move towards a more broadly cost-reflective charging system.

8.3.4 Error in implementing public expenditure control targets under resource accounting

The Finance Committee considered a paper from Analytical Consulting Ltd¹ in January 2004. The paper suggested that customers' bills were higher than

necessary because of an error in implementing the public expenditure control targets under resource accounting.

Analytical Consulting Ltd believed that there was an error either in the way the Scottish Executive had set borrowing limits in their commissioning letter and/or in the way that we had interpreted these limits. Their paper, our response and the response of the Finance Committee are covered more fully in Chapter 4 of this document.

8.4 Evidence

In oral evidence to the Committee we were asked about our use of financial ratios. Financial ratios are difficult to use consistently when the financing arrangements and capital and ownership structures of the organisations to be compared are quite different. Our evidence used ratios that we believed to be broadly consistent as measures of the relative sustainability of both models.

During their evidence to the Committee, Analytical Consulting Ltd took issue with these financial ratios and suggested that this had resulted in customers being overcharged. We submitted a detailed paper *Ensuring the sustainable financing and operation of a public sector water industry*, which we considered addressed these criticisms².

8.5 The Committee's findings and our responses

A copy of the Committee's report is available on the Scottish Parliament's website (<http://www.scottish.parliament.uk/finance/index.htm>). The Committee made 21 recommendations as a result of its inquiry.

We welcomed the Finance Committee's report, and its scrutiny of the water industry in Scotland. In our view the report should help ensure that all customers will benefit from a more sustainable water industry. We would like to

¹ Analytical Consulting Ltd, *Did flaws in the application of resource accounting and budgeting distort the Strategic Review of Water Charges in Scotland*, unpublished, available at <http://www.scottish.parliament.uk/finance/reports/fir04-02-vol02-03.htm#7>

² This paper is available on our website at <http://www.watercommissioner.co.uk>

register our agreement with many of the points made in the report.

In particular, we welcome the recommendation from the Finance Committee that the regulatory framework in Scotland should be strengthened and better resourced. It is noteworthy that the Committee also commented upon the importance of significantly improving the efficiency of the water industry in Scotland. Matching the efficiency of the water industry south of the border will take time, but customers will only benefit from the industry remaining within the public sector once the current gap is narrowed very considerably.

The comments of the Committee regarding the improvement in the quality of financial, customer and asset information are also welcome. We believe that this Office has made considerable progress in developing the information systems that underpin effective regulation. This information is supplied to us by Scottish Water in an annual regulatory return and is available in full on our website. The quality of this information has improved significantly over the past three years and we would expect that such improvement will continue over the next few years. Our Office has recently appointed a leading firm of consulting engineers to review the information provided by Scottish Water. This appointment of a Reporter follows the example of Ofwat in England and Wales.

We agree that the strengthened regulatory regime should be more clearly accountable to customers. The current role of the Water Industry Commissioner for Scotland, as defined by statute, is to advise Scottish Ministers and to approve schemes of charges proposed by Scottish Water so long as they are consistent with the advice provided to, and accepted by, Scottish Ministers. This advice is provided within a defined policy framework (for example, that there should be a link between domestic water and sewerage charges and Council Tax bands).

In evidence, we suggested that economic regulation should work in broadly the same way as for other utilities. This model requires that Ministers provide clear guidance on social, environmental and public health

priorities and that the regulator should then manage a transparent process, which leads to decisions on the maximum prices that can be levied on customers. Scottish Water should have the right of appeal to the Competition Commission. This very clear process is likely to reduce the current uncertainty amongst stakeholders on roles and responsibilities. As a minimum, it would be easier to explain the roles and responsibilities of each stakeholder.

We also responded in detail to individual points raised by the Committee. The Committee's conclusions and our responses are detailed below.

28. It is clear that the optimistic forecasts of minimal price impacts from harmonisation of prices across Scotland were not realised. Efficiency gains from the greater economies of scale should have minimised any price impact. Instead between 2001-02 (the last year of the three separate authorities) to 2004-05 (the current year and harmonisation of prices at £338.31) customers in the East are paying 25.3% more (£68.31), customers in the West are paying 27% more (£71.91) while the North is paying marginally less -3.4% (-£11.87). This is at variance with the estimate provided by the WIC. The Committee is not convinced of the WIC's estimate and explanation of the impact of harmonisation on customers in the East and West

We have reviewed again our calculation of the impact of harmonisation on the average household in the East and West. We can confirm that the estimate that we supplied to the Committee, on the impact of harmonisation on the value of the average domestic bill, is accurate. There would appear to be two principal reasons for the misunderstanding. Firstly, the Report includes a table that details changes in the Band D bill – this is significantly higher than the average domestic bill, which is between the Band B and the Band C levels. Secondly, the substantially increased level of investment included in *Quality and Standards II* resulted in an overall increase in prices that could only be partially offset by the efficiency targets that were set for capital and operating costs. It would not be reasonable to include

the increase in prices resulting from the higher level of investment in an assessment of the impact of harmonisation for domestic customers. Moreover, both domestic and non-domestic customers in all three water authority areas would have faced even greater increases in their bills if Scottish Water had not been created.

In our response to your question about the costs of harmonisation for the average household in the East and West, we referred to a lack of detailed information to calculate the exact impact of harmonisation. The Committee should note that this related only to the detail of the exact number of Band D equivalents for the areas previously served by the three authorities (ie the spread of properties by band and the incidence of discounts). Such differences are not hugely material and as such it is likely that this information would have had only the most minimal impact on our assessment of the cost of harmonisation for the average domestic customer.

In the three authority model the prices paid by non-domestic customers with similar usage patterns or rateable values could be quite different. Consequently the impact on the prices paid by some customers resulting from harmonisation could potentially be greater for non-domestic customers than it was for domestic customers. We highlighted some of these differences in the Strategic Review of Charges when we provided examples of typical customers.

Differentiating between household and business customers is not straightforward: households with meters have historically been regarded as non-domestic properties and there can also be issues with businesses run from home, care homes, owners living in a flat above a hotel or farmhouses and crofts. There is still a material incentive to many lower water users living in higher banded domestic properties to switch to a meter. Such switching will result in higher prices for other customers.

35. The Committee is concerned that there does not appear to be agreement between the WIC and Scottish Water on how much progress is being made with regard to efficiency savings and operating costs and is also concerned over what

the impact could be if the necessary savings are not met.

The Committee is correct to be worried about the impact on future prices of a failure to meet the efficiency targets that were set in the Strategic Review of Charges. We believe that it is important to reiterate our definition of efficiency – it is the delivery of a defined level of service for less money. Consequently, adjustments to costs incurred are made to ensure that we are making like-for-like comparisons and therefore an objective assessment of efficiency. It is not in the customer interest to allow changes in accounting practices to be considered an efficiency – they would not, of course, reduce the revenue required from customers.

In the Strategic Review, we set three efficiency targets: in base operating costs (set separately for each of the three authorities); a further reduction in operating costs because of the benefits that should accrue from the creation of Scottish Water; and in capital expenditure. These three efficiency targets, taken together, amounted to some £400 million per year in 2005-06 and limited the increase in revenue required from customers to just under 20% from over 70% over the four years.

It is not uncommon for there to be disagreement between the regulator and the regulated organisation about both the level of the efficiency target and progress towards that efficiency target. Our role is to monitor progress of Scottish Water on a fair and objective basis. As such, our comparisons reflect the actual underlying progress in improving value for money for customers. Customers can therefore be assured that comments from this office will be supported by appropriate evidence and underpinned by a consistent methodology.

59. While the Committee understands the Scottish Executive's reasons for promoting the equalisation of domestic bills across Scotland, the consequences in terms of increased charges were not adequately explained to consumers and appear to have been underestimated. Astonishingly, the impact of the harmonisation of business charges on low volume business

users appears not to have been foreseen. No economic justification for business charge harmonisation was given either by Ministers or the WIC, despite its significant impact on firms adversely affected. The failure to openly debate and consult on harmonisation and the specific harmonisation methodology that was implemented for business users, as well as the failure to introduce such a significant change on a phased basis, has caused a great deal of distress to small businesses.

The desirability of harmonised charges was recognised in the discussion that followed Sam Galbraith's announcement to the Transport and Environment Committee in February 2001 of the Scottish Executive's intention to create Scottish Water.

We accept that many of those who faced sharp increases in bills believe that there was insufficient debate and consultation about the change in tariffs. Any such change in tariffs is likely to be unpopular with those who end up paying more and accepted as right and proper by those who benefit. In this regard, while we can sympathise with businesses who were asked to pay more, we also believe it is important that we remember that there were many businesses that benefited from the change in tariffs and that they had been paying relatively higher (than others of a similar type and pattern of usage but located in another authority area) bills since 1996. After the creation of Scottish Water it would have been very difficult to justify continuing to charge a significant water user in the North nearly 100% more per cubic metre of water and nearly 500% more for surface drainage.

In the Strategic Review of Charges, we indicated that the non-domestic sector in Scotland paid a greater share of total industry revenues than in England and Wales (42% of revenue in Scotland versus 20-30% in England and Wales) and found little reason to believe that such a marked difference should exist. At that time, a lack of detailed cost information meant that Scottish Water's costs in providing service to non-domestic customers could not be assessed reliably. As any reduction in non-domestic revenue would have to be

offset by an increase in domestic bills, we concluded that an adjustment could only reasonably be made when Scottish Water was able to present clear evidence to justify increasing domestic charges relative to non-domestic tariffs. This is in line with standard regulatory practice where the onus is on the company to show that a rebalancing of costs between customer groups is justified.

During our programme of consultation, we received many representations from businesses and business representatives that differential charging based on location was unfair.

For example, Fife is a relatively high cost area but benefited from lower charges because it was in the former East of Scotland Water Authority, but customers based in Dundee, which has a relatively low cost of supply, faced much higher prices since they were supplied by the North of Scotland Water Authority.

Discrepancies of this type were particularly apparent to customers paying water charges for similar properties located in each of the three areas. Maintaining different tariff regimes for different parts of Scotland would have been both expensive to administer and likely to have encouraged 'cherry-picking' of larger customers in the high tariff areas. It is important that competition brings benefits to all customers by encouraging efficiency and innovation. We were aware of a number of anomalies in the tariff regimes of the former authorities that increased the risk of 'cherry-picking': for example, a supermarket chain, with large stores located in Dundee, Glasgow and Edinburgh would have faced substantially different bills in different parts of Scotland. There is no cost justification for such variations.

The table below shows the bills that applied in 2002-03 for each of these stores:

Table 8.1: Example of typical Bills 2002-03

40mm meter, water volume 13,000m ³ , RV = £1,145,000 ³	Dundee	Glasgow	Edinburgh
Total bill	£83,068	£55,515	£37,418
% of Dundee bill	100%	67%	45%

³ Customer characteristics are typical of those for a large supermarket based in a Scottish city.

In evidence, the Finance Committee heard that “.. it is an unusual notion that would take a strategic asset like water and say that, no matter whether someone lives in Rannoch or the top of the Cairngorms, the same pricing policy will exist for all” (paragraph 57). However, other utility businesses operating in Scotland do precisely that. Scottish Gas and BT apply the same charges across the whole of Scotland, whilst the Scottish electricity companies (Scottish Power and Scottish Hydro-Electric) each apply the same tariffs throughout their respective areas. It would seem not unreasonable, therefore, for Scottish Water to apply uniform tariffs, regardless of location. Certainly considerable thought should be given to the implications of the location signals that would be given to developers of encouraging a major water user to locate, say, in North Fife (a high cost water area) rather than in, say, Dundee (a low water cost area).

There is an alternative approach, which would be to set prices that reflected the local costs of supply. Such an approach would be likely to disadvantage more remote areas or areas where there are problems with the supply/demand balance of water. The islands, the southwest of Scotland and the north Fife area would have been most disadvantaged.

The main reason for the large increases for most smaller businesses was not so much harmonisation, but the move towards more cost-reflective tariffs. In the Review of Charges we highlighted the benefits that accrue from developing charges that broadly reflect costs. These benefits can be split into two main categories: reduction of vulnerability to competition and improved revenue collection.

Off-network competition is more likely to occur where a customer pays a bill that is greater than the costs of supplying them. If a large customer moves off the public network then the total revenue from that customer is removed, however, the fixed costs of supplying the customer remain. These costs must be borne by the remaining customers of the supplier. Clearly, moving towards cost-reflective tariffs reduces the likelihood of groups of customers moving off the public network by

ensuring that customer groups pay a price related to the cost.

In the water industry the main costs of supply are fixed – they relate to the cost of developing and maintaining a network to cope with peak demand. There is a relatively low amount of cost that varies directly with the average water volume consumed over a longer period (such as a year). A cost-reflective charging structure is likely therefore to contain a large element of fixed charge.

For customers who paid a price determined by their rateable value this meant that a minimum charge was introduced. This impacted a large number of customers in the former West of Scotland Water Authority and North of Scotland Water Authority although it tended to benefit such customers in the former East of Scotland Water Authority.

The effects of moving to broad cost-reflectivity, for some customers, were increased by the removal of abatements and the phasing out of charitable relief.

We agree that there should have been better communication of this change in the tariff structure. It is, however, important to make two points.

The overall increase in revenue from non-domestic and domestic customers across Scotland was broadly the same. Just over 20% of businesses saw a fall in their bill, about 10% were not impacted and about 70% faced higher bills.

Some businesses faced bills that were unrealistically low. For example, businesses with identical usage characteristics to a household could be paying quite significantly less than that household. There were also many examples of hotels, guesthouses and even a manufacturer of ice who paid bills which were less than a Band A household.

80. The Committee recommends that to give the public greater confidence in the quality of the consultation carried out, both Scottish Water

and the WIC should operate under clear consultation codes with consistent approaches to publication of responses. In particular, all consultation submissions made to the WIC should be made public before any of his statutory reports are released and the WIC should address the relevant issues raised by consultees within the reports themselves. In this way, the public can be reassured about the conduct of the relationship between the WIC, Scottish Water, its customers and the Scottish Ministers.

We agree that the introduction of such a code would be of benefit. Our Office will prepare in draft and consult on such a code. It would be useful to formalise this in Statute in the forthcoming bill.

83. The Committee believes that it would aid the accountability and transparency of the WIC in the view of many customers if he had to give a formal response to submissions from the Panels, which could also be lodged with the Parliament.

We would agree that this proposal could bring benefits. There would however be a resource implication associated with preparing an appropriate detailed written response to all submissions.

84. The WIC is both financial adviser and guardian of the public interest but was unable to provide the Committee with a clear illustration of how the public interest is determined where different interests have to be balanced. For example, weighing lower prices to the customer against the long-term sustainability of the water supply network is an important decision that has been taken with little public debate.

In our evidence to the Committee, we explained that our role is technical, not political nor representational of particular groups (as opposed to customers as a whole). This technical role should ensure that the aims of Ministers are delivered, for the lowest justifiable cost to all customers.

The Strategic Review drew on guidance from Ministers on the level of performance expected from the water and sewerage network. *Quality and Standards II* provided the vehicle for this guidance. *Quality and Standards II* was itself the subject of a wide public consultation and the final outcome was refined to reflect the views expressed by consultees. We were not required, nor did we seek, to weigh lower prices against long-term sustainability of the water supply network. Indeed, unlike Ofwat, we did not seek to question the views or priorities of the quality regulators (SEPA and the Drinking Water Quality Regulator) and ensured that Scottish Water was fully funded to meet all the priorities set by Ministers in their response to *Quality and Standards II*.

In this regard, it is again important to stress that our efficiency targets are met when all the investment outcomes are met, on a sustainable basis, for the reduced cash budget made available. Delaying a project to the next regulatory period or changing the scope of a project and reducing its benefits are **not** efficiencies. The efficiency targets were set after a detailed consideration of what had been achieved in England and Wales and a full review of current practices in Scotland. The setting of efficiency targets therefore should not have resulted in any reduction in the investment outcomes set by Ministers. One such outcome was that there should be no deterioration in the performance of the underground infrastructure. This clearly implies that Scottish Water would be expected to manage any operational risks within their revenue settlement.

The Committee should also note that even if Scottish Water achieves the efficiency targets set for the current regulatory period, around 20% of the average bill (for both domestic and non-domestic customers) results directly from inefficiency in the delivery of capital investment and in operating costs.

85. The Committee is concerned that there is a lack of transparency in the way in which the roles of the WIC as regulator and customer champion are combined and that there is a perception in the minds of at least some stakeholders that there may be a conflict of interest between the WIC's

stated role as a champion of current consumers and being a vital element in the drive for the water industry's long-term efficiency.

The statutory duty of the Water Industry Commissioner for Scotland is to promote the interests of customers. Our principal weapon in promoting customer interests is to challenge the industry to improve its efficiency and to improve its level of service. We do this by trying to ensure that we advise Ministers on the steps necessary to ensure that all current and future customers will benefit from a sustainable water and sewerage industry.

Specifically, the remit of the Office does not extend to supporting the interests of one group of customers when this would disadvantage others. To this extent, some may consider that we are not the 'champion of customers' – but it is not the role of a regulator to favour one or another group. Such decisions regarding the price of a public service provided by a public sector organisation are political and should, rightly, be taken by Ministers and the Parliament.

Our role is to operate in line with guidance issued to me by Ministers and the advice accepted by Ministers. We therefore seek to ensure a broadly cost-reflective allocation of costs between customer groups and then, through promoting efficiency, to reduce costs to all customers. In this way, we could reasonably be considered as the 'champion of all customers'.

Throughout the regulated industries, the recognition of the potential conflict of interest between regulator and 'customer champion' to which the Committee seems to refer has led to the creation of separate customer bodies such as Energywatch, Postwatch, Rail Passengers' Council, WaterVoice and, in Scotland, the Water Customer Consultation Panels (WCCPs). We welcomed the creation of the WCCPs as it brings clarity to the role of promoting customer views and the representation of particular customer groups.

87. The current WIC told the Committee that a subsequent WIC may take a wholly different approach to providing advice on a charging structure. This is not conducive to long term

planning for the industry, continuity of the office and neither does it display much thought to the representative nature of the WIC in making advice.

Please see my answer under 84 above. The nature of my role is to promote the interests of all customers now and in the future. WICS does not have a representative role; the WCCPs has a duty to represent the views of customers.

My principal weapon in promoting customer interests is to challenge the industry to improve its efficiency and to improve its level of service.

88. The Committee believes that an improved structure and support for the WIC is needed to ensure independent regulation and transparency across the industry. Modelled on some of the English and UK regulators, an Office of the Water Industry Commissioner, including a non executive membership, could provide greater accountability and continuity for the Scottish water industry. Consideration should be given to whether certain decisions should be taken by the WIC in the context of advice from Ministers rather than the reverse.

We agree. We have been advocating for some time that, in the interests of customers, the water industry in Scotland should be regulated in a way that is more transparent and accountable, consistent with UK regulatory policy.

We welcome the proposals announced by the Minister in response to the Finance Committee report with regard to the creation of a regulatory board structure with non-executive membership. This will strengthen the regulatory function and increase transparency to the benefit of all customers.

A regulatory board would be an invaluable source of advice and support to the executive staff of WICS. It may also help to depersonalise the interactions between WICS and Scottish Water. We had sought to gain some of the long-term benefits of a regulatory board by

establishing an advisory panel. This panel includes experts from the legal, regulation, business, academic and public service worlds. Unfortunately, owing to budgetary constraints, we have had to disband this Panel for the time being.

In particular we would advocate a move to a regulatory regime, more consistent with UK regulatory policy, in which the regulatory board sets price caps and determines charges based on guidance from Ministers. This will improve clarity of roles within the industry and help ensure that customers can benefit from the potential advantages of the public sector model.

129. When the WIC was before the committee, he implied that his financial limits were not particularly stringent in the light of what the English regulator did and in the light of the sorts of ratios that were achieved by water companies in the commercial sector in England and Wales. However, there was concern expressed by members of the Committee that the basis of comparison appeared to be different and therefore the committee sought clarification from the WIC about the basis of comparison between financial ratio targets set in Scotland compared with those in England and Wales and found that there were very considerable differences between the bases on which these targets were calculated, invalidating the comparisons which had been suggested. In a letter to the Committee dated 27 February 2004, ACL highlighted that the basis used for Scotland is “revenue – less operating expenditure”. Whilst broad financial ratio analyses can add clarity in making comparisons, they can be misleading where non-comparable bases are used to assess performance. The Committee found unacceptable the WIC’s use of comparisons between Scotland and England and Wales without making clear the impact of different bases of calculation. Where different bases are used this should be fully explained to ensure transparency.

Having reviewed our oral evidence, we would agree that we should have been clearer about the basis of calculation of the respective ratios in Scotland and south of the border. The comparison was designed to indicate the ability of the industry in Scotland and south of the border to withstand shocks and as such, it would not follow that the comparison was invalid. Moreover, it would not be appropriate to suggest – as other evidence to the Committee may have implied – that the same ratio applied to two quite different models should be interpreted in the same way. The rationale for the comparison has to be properly understood. For example, just because a supermarket has lower margins than a chain of department stores does not mean that it is necessarily less profitable or less attractive from the perspective of the provider of capital. Much also depends on the cost of capital and the sustainability of, or risks to, revenue.

It was certainly useful to have the opportunity to provide a detailed written submission to the Committee on this important issue. In my paper ‘Ensuring the Sustainable Financing and Operation of a Public Sector Water Industry’, we asked the Committee to bear in mind (page 18) the differences in structure between the private and the public sectors, which render the detailed comparison of financial ratios difficult. We also pointed out (page 20) that there is no universal definition of such ratios. Our remit is both to ensure that the interests of customers are safeguarded and to ensure the sustainability of the finances of the water industry in Scotland. Consequently, we shared comparisons with the Committee, which served to illustrate the extent to which customers in Scotland and south of the border were potentially exposed to operational or legislative shocks.

In this paper, we discussed how, from a customer perspective, it is vital that the water industry – an essential public service – operates on a sustainable footing. In the private sector, the water company needs to be able to access finance on an on-going basis. This ensures that the customer is insulated from the impact of an operational or legislative shock. In the public sector model, the water undertaker should seek to finance its operation and investment in such a way so as

to maintain the lowest sustainable price for a given level of service to customers. The 1.0 free cash flow cover of interest that we targeted for the end of the current Strategic Review was designed to protect the interests of customers both now and in the future.

A further important comparison will reinforce the relevance of the comparisons used in the oral evidence to indicate the sustainability of the financing in Scotland and south of the border. This relates to the absolute level of debt and the ability to service that debt. This is what lay behind the financial assumptions included in the advice to Ministers. The only comparison that can be applied equally to both the public and private sector models is a comparison of EBITDA⁴ or EBIT⁵ with the actual level of debt. This is because debt principal and interest have priority over the payment of dividends.

The view of Ofwat on the maximum prudent level for these ratios is outlined in Table 8.2. The Committee will note that Ofwat does not differentiate between the size of companies or between whether they were privatised or had always been private companies. This is important because the water-only companies did not benefit from any green dowry or the conversion of debt into equity.

Table 8.2: Debt payback ratios: Ofwat target⁶

	Water and sewerage company	Large water only company	Small water only company
Debt payback period (EBITDA basis)	Max 5 years	Max 5 years	Max 5 years
Debt payback period (EBDA ⁷ basis)	Max 7 years	Max 7 years	Max 7 years

In Table 8.3 we have calculated the debt payback ratios based on the revenue caps included in the advice to Ministers. The table also shows these ratios based on the profile of improvement in efficiency that is currently expected. It is clear that the revenue caps contained in the advice were as low as was consistent with the prudent financing of the industry. The re-profiling of

efficiency improvement has more than used up the limited flexibility in the second half of the regulatory period.

Table 8.3: Scottish Water debt payback ratios

Debt payback period in years	2002-03	2003-04	2004-05	2005-06
Strategic Review of Charges:				
EBITDA	5.2	4.9	4.1	4.0
EBDA	7.9	7.2	5.5	5.3
WICS estimates: ⁸				
EBITDA	4.8	5.2	4.9	5.2
EBDA	7.0	7.7	6.9	7.5

This is confirmed in Table 8.4. In this table we show the impact of having reduced the revenue required from customers by 5% in the first year of the Strategic Review of Charges. It is clear that Scottish Water would have had to achieve all its targets and that there was no operational shock, for its debt payback ratios to have complied with the Ofwat targets.

Table 8.4: Scottish Water revenue capped at 2.5% (not 7.5%) in 2002-03

Debt payback period in years	2002-03	2003-04	2004-05	2005-06
Strategic Review of Charges:				
EBITDA	6.0	5.7	4.8	4.8
EBDA	9.8	9.1	6.8	6.7
WICS estimates: ⁹				
EBITDA	5.6	6.2	5.8	5.7
EBDA	8.6	10.0	8.9	8.6

This analysis demonstrates conclusively that the revenue caps for Scottish Water were set at the lowest level consistent with the potential for efficiency improvement that could reasonably be expected and the overarching goal of ensuring that the finances of the industry were placed on a sustainable footing by the end of the current regulatory period.

The Committee is correct to point out that borrowing should only be used in line with the principles of the Treasury's Golden Rule. It is important to highlight that

⁴ EBITDA: Earnings before interest, tax, depreciation and amortisation.

⁵ EBIT: Earnings before interest and tax.

⁶ Ofwat, Final determinations: Future water and sewerage charges 2000-05; page 151. Table 28: Ranges for critical financial indicators.

⁷ EBDA: Earnings before depreciation and amortisation.

⁸ Based on Regulatory Returns.

⁹ Based on Regulatory Returns.

no extra value has been created for customers as a result of the increase in borrowing beyond the targets set in my Strategic Review of Charges. No new customers were added to the network, no improvements have been made to the environmental and public health performance of the assets and no improved maintenance regime was introduced (beyond those already funded by the Strategic Review of Charges).

publicly on proposed charge limits before setting these limits.”

In Section II of this document we examine in detail the changes to the regulatory framework.

8.6 Scottish Executive's response to the Committee's report

The Scottish Executive made two responses to the Finance Committee's report. There was an immediate initial response followed by a letter dated 14 June 2004.

The initial response outlined in general terms some of the measures that the Scottish Executive proposed to include in its Water Services etc (Scotland) Bill. The second response provided more details and dealt with other matters relating to public expenditure.

The Scottish Executive's proposed changes are¹⁰:

- *“To give Ministers clear statutory duties to set publicly the standards and objectives that Scottish Water should achieve and the principles to be applied in setting charges for customers.*
- *“To transfer the functions of the Water Industry Commissioner from an individual to a small board of non executive experts and a chief executive, to be known as the Water Industry Commission for Scotland.*
- *“To empower the new Commission to set limits on Scottish Water's charges, rather than advise Ministers on them as happens at present, and to do so on the basis of Scottish Water being funded to deliver Ministers' objectives at the lowest overall efficient cost to the customer.*
- *“To set out in statute a transparent process by which the new Commission, working within a policy framework established by Ministers, will consult*

¹⁰ The Scottish Executive's response to the Finance Committee dated 23 April 2004.

Section 1: Chapter 9

Lessons learned from the Strategic Review of Charges 2002-06

9.1 Introduction

The *Strategic Review of Charges 2002-06* was the first detailed analysis of the performance of the water industry in Scotland. Our Review was handed to Scottish Ministers by the deadline set in the commissioning letter. In November 2001, we received confirmation that the Minister had decided to accept our advice on revenue caps and our other recommendations that were designed to create an environmentally and financially sustainable industry in the public sector.

The Strategic Review of Charges highlighted a number of challenges:

- the need to improve efficiency;
- the potential threat of competition;
- the need to improve understanding of the condition and performance of assets; and
- the desirability of improving the financial sustainability of the industry.

The industry has responded well to all of these challenges and customers can look forward to much improved value for money as a result. Not surprisingly, some stakeholders have criticised the Review and some of the steps that have been taken to meet the challenges highlighted in our analysis.

The areas of criticism have included:

- the process of harmonising charges;
- the increase in fixed charges;
- the industry should have been allowed to borrow more;
- the efficiency targets were unreasonable;
- a lack of clarity in roles and responsibilities; and
- a lack of explanation.

We will address each of these areas of criticism. For each we will summarise the criticism and provide a response. In preparing the *Strategic Review of Charges 2006-10*, we are keen to learn lessons from the criticism that has been made. We do not expect that all stakeholders will like all of the contents of the next Review, but we are keen to improve understanding of our role. The chapter concludes with an outline of some of the changes that we intend to make to our process and to our methods to take account of the comments that we have received from stakeholders.

9.2 Criticisms of the Strategic Review of Charges 2002-06

9.2.1 The process of harmonising charges

Issues raised by stakeholders

There are three main criticisms that have been made about the harmonisation of charges. These are that the process was completed too quickly, that there should not have been harmonisation for non-domestic customers and that there was insufficient communication.

Our response

In the Strategic Review of Charges, we highlighted the impact that harmonisation would have on different types of business. However, we accept that many of those that were adversely affected by harmonisation feel that there was insufficient communication. We believe that Scottish Water, the Scottish Executive and this Office can learn from the perceived lack of communication.

We have reviewed the argument that there should not have been harmonisation for business customers. Our view is that there are two alternatives: the first is to harmonise for all non-domestic customers; the second is to opt for fully cost-reflective tariffs for all non-domestic customers. The first approach is consistent with the pricing of other utility or public good services (for example Royal Mail). It avoids the risk of a 'post code' lottery where the price of the water and sewerage service could vary quite dramatically depending on where the customer lives. Fully cost-reflective charges

are an option, but could make the service prohibitively expensive for those who live in remote areas. This could also have an adverse impact on smaller businesses located in more urban areas. If a larger customer were to decide on an 'off-network' solution, this could have a dramatic impact on the bills of those customers located in the same water supply zone. We remain convinced that harmonisation for all customers was in the long-term interests of all customers.

We have also reviewed the argument that harmonisation was introduced too quickly. Our analysis suggested that the impact would be less, and would affect fewer customers, if harmonisation was implemented swiftly. This was because the tariff regimes were so different in each of the three authorities. We also consider that it would have been difficult to justify much higher prices to some customers when an identical customer in a different part of Scotland was paying much less. This did not just affect smaller businesses. The following example of a supermarket chain, with large stores located in Dundee, Glasgow and Edinburgh, would illustrate.

Table 9.1 shows the bills that applied in 2002-03 for each of these stores.

Table 9.1: Example of typical bills 2002-03

40mm meter, water volume 13,000m ³ , RV = £1,145,000 ¹	Dundee	Glasgow	Edinburgh
Total bill	£83,068	£55,515	£37,418
% of Dundee bill	100%	67%	45%

9.2.2 The increase in fixed charges

Issues raised by stakeholders

In the Strategic Review of Charges, we highlighted that cost-reflective prices would be important in ensuring that larger water users chose to maintain a connection to the public system. Some stakeholders have objected to this. One of the objections is that the fixed charges were

introduced too quickly and were not communicated sufficiently well. The other objections are different for metered and un-metered customers.

Standing charges were increased for metered customers. Metered customers with relatively low usage will suggest that they should pay for what they use. They assert that this is what happens in other utility services.

A minimum charge was introduced for un-metered customers. The un-metered customer had always paid a fixed sum for the water and sewerage service. The amount depended on the rateable value of the property served. The un-metered customer was therefore objecting to the level of the bill, rather than the fact that the bill did not vary with volume.

Our response

We would again accept that many customers felt that there was insufficient communication of the impact of increasing fixed charges. There are lessons that we can learn. These will be discussed in more detail below.

We have looked again at the issues raised by metered customers. Our view remains that the cost of supply is a function of peak consumption, rather than simply the total consumption. It seems to us that it is appropriate that all connected customers should make a contribution to the maintenance of the water supply and sewerage infrastructure. The increase in fixed charges is consistent with this. To delay the implementation of fixed charges would have been to accept that larger users would continue to make a greater contribution to the costs of maintaining the network.

Our view is that there is little merit in charging for water and sewerage services by rateable value. This means that a small city centre shop might pay more than a much larger shop in a rural area (even though the latter is probably much more expensive to supply). We believe that the minimum charges proposed by Scottish Water and agreed by us were not unreasonable. Many rateable value customers paid less than Band A households.

¹ Customer characteristics are typical of those for a large supermarket based in a Scottish city.

9.2.3 The industry should have been allowed to borrow more

Issues raised by stakeholders

Some stakeholders have argued that if the industry had been allowed to borrow more, then charges could have been kept at a lower level. They will sometimes further argue that it would have been better to borrow more.

Our response

We discussed issues relating to debt in Chapter 7. It is true that borrowing more during the 2002-06 regulatory period could have reduced bills for customers – but only at the expense of higher bills in the future. In effect, customers would have swapped an investment backlog for an increased debt. We can see no merit in increasing debt faster than the economic value of net new assets. This could only make the industry less able to respond to shocks.

9.2.4 The efficiency targets were unreasonable

Issues raised by stakeholders

The unions have consistently argued that both our approach to setting efficiency targets and our assessed scope for efficiency were unreasonable. They argue that comparing performance with England and Wales does not take account of: the industry being in the private sector, the geography and customer base, and the higher level of investment that has been made south of the border.

Our response

Our efficiency assessments take full account of differences in asset and customer bases and geography. The Costs and Performance Reports and the Strategic Review of Charges describe these assessments. We can see no reason why customers should be asked to pay more because the industry remains in the public sector in Scotland. Indeed, given the cost of capital advantage of the public sector, it is possible to argue

that bills should be lower on a like-for-like basis in Scotland.

9.2.5 A lack of clarity in roles and responsibilities

Issues raised by stakeholders

Some stakeholders have expressed frustration because no-one seemed to want to take responsibility, nor was it clear who was taking which decisions.

Our response

We agree that there was a perceived lack of clarity. This was due to the nature of the regulatory regime that is in place. This Office has a statutory duty to advise Ministers on the matters to be taken into account and left out of account in setting charges for customers. Ministers can accept this advice, can amend it (and give reasons) or can substitute their own advice (and give reasons). Ministers will commission such advice relatively rarely. The last advice was in 2001. The next advice (if the system does not change) would be due in 2005.

Each year we are required to agree the detailed tariffs that Scottish Water proposes to charge. In proposing these tariffs, Scottish Water has to have taken due account of the advice that has been accepted by Ministers. We have to accept these tariffs if we believe that they are fully consistent with the advice accepted by Ministers. Ministers have no role in the setting of annual tariffs unless Scottish Water and this Office do not agree. While the legislative position is clear, we would accept that it can be difficult to understand that this Office has little decision-making discretion, and that Scottish Water is bound to take account of our advice and yet Ministers cannot easily intervene unless they commission new advice.

Stakeholders should also be aware that any regulated company will, at times, find it convenient to blame its regulator for some of the difficult decisions that it has to take. We would suggest that stakeholders ask why Scottish Water believes it does not have discretion to

act. We set targets at a macro level precisely because we do not want to have to manage the operations of Scottish Water.

9.2.6 A lack of explanation

Issues raised by stakeholders

Some stakeholders have commented that they have found our explanations to be incomplete or confusing.

Our response

We tried to document our assumptions, logic and answers as completely as possible in the *Strategic Review of Charges 2002-06*. Given the amount of information that we use and the complexity of the analysis it is difficult to explain each issue as fully as we might like. We had to strike a balance between the detail and length of the *Strategic Review of Charges 2002-06* and the completeness of our presentation of our assumptions, logic and answers. We plan to address this for the next Strategic Review.

9.3 Lessons learned

We are pleased that the *Strategic Review of Charges 2002-06* has stimulated debate about the challenges faced by the water industry in Scotland. The publication of the Scottish Executive's consultation document *Paying for water services 2006-10* is another important step. A large number of cross-subsidies exist between customer groups. Some of these are intentional (for example the link between domestic bills and the Council Tax band of the property and the harmonisation of charges across Scotland). Others have arisen over time and may not now be considered appropriate. Decisions about the appropriateness of cross-subsidies are political and it is not appropriate for either regulators or regulated companies to take these decisions. We look forward to clear guidance from Ministers on this issue.

Similarly, we welcome the strengthening of the regulatory framework for the water industry in Scotland. This will clarify the roles and responsibilities of this Office, Scottish Water and the Scottish Executive. The price-setting process should be more understandable.

The establishment of a Commission should also serve to depersonalise regulation and to facilitate more effective communication with stakeholders.

These structural changes will not prevent (indeed they may increase) comments from Scottish Water that its regulator is forcing it to do (or not to do) something. It is certainly not the intention of this Office to dictate to Scottish Water how it should manage its business. We may force Scottish Water to live within a defined budget, but we do not tell it how to live within that budget.

We believe that the *Strategic Review of Charges 2002-06* set a framework that was appropriate and in the interest of customers now and in future. There has been a marked improvement in the industry's efficiency and in its understanding of the assets. We believe that the Review made a significant contribution to encouraging these improvements.

Over the past year we have looked at the advice and the recommendations contained in the Review on three separate occasions: in reviewing Scottish Water's representations (see Chapter 6), in providing evidence to the Finance Committee (see Chapter 8) and in beginning to prepare the *Strategic Review of Charges 2006-10*. On each occasion we have concluded that we would not make any material changes either to the advice or to the recommendations.

However, we do believe that there are a number of steps that we can take to improve the transparency, accountability and perceived proportionality of regulation.

9.3.1 Transparency

Improving process

In July we published *Our work in regulating the Scottish water industry: Setting out a clear framework for the Strategic Review of Charges*. This described in some detail our work plan and all of the information that we collect from Scottish Water. It also provided information about the opportunities for stakeholders to learn more about our work and to ask questions.

We are committed to publishing most of the information that we receive from Scottish Water and all of the tools that we use in our analysis. We will also explain these tools so that stakeholders can understand how they are used.

The work plan for the Strategic Review of Charges also highlights the dates when we will require inputs from Scottish Water and from the Scottish Executive. We hope that everyone will strive to meet these deadlines.

Perhaps the most important part of the process begins with publication of our draft advice/determination at the end of June next year. This will be followed by a period for representations about this answer from stakeholders. Our final advice/determination will be published at the end of November. These prices will take effect from the beginning of April 2006.

Better explaining our approach

We have arranged a large number of stakeholder information days over the period between June 2004 and February 2005. These are half-day sessions when we will explain where we are in completing the Strategic Review of Charges. We hope that these sessions will also provide an opportunity for stakeholders to raise their concerns with us. We will respond to all of the issues that are raised at the stakeholder information days.

The *Strategic Review of Charges 2002-06* was regarded as ministerial advice. It was therefore published only after the Minister had taken his decision. In preparing the *Strategic Review of Charges 2006-10*, we will publish a number of documents, presentations, information submissions and analytical tools. We trust that publishing all of the key inputs to this Review will allow stakeholders to gain a full understanding of both our approach and the final answer.

Ensuring that stakeholders can understand the answer

There are three important ways in which we can ensure that stakeholders can understand the answer. Publishing all of the key inputs to the Review will be important. However, we will also endeavour to present the answer

in a way that will allow stakeholders to understand what the answer means for them and for customers as a whole. We will also outline our reasoning and make clear the evidence upon which we have relied to come to our answer.

We also note comments from some commentators that they found that our reasoning in the last Strategic Review of Charges was not complete. The next Strategic Review of Charges will provide sufficient information for all of the major findings of the Review to be replicated.

Providing opportunities for comment

There are three main ways in which we will provide stakeholders with opportunities to comment. These are the stakeholder information days; the publication of our proposed methodology; and the period for representations after publication of the draft advice/determination. Each of these will play a valuable role in allowing us to hear stakeholders' views. We encourage stakeholders to use these opportunities.

In the work plan for the *Strategic Review of Charges 2006-10*, we also outline our plans for two further consultation documents. These consultations will discuss firstly the general principles that we should consider when issuing a license to a new entrant to the Scottish water industry and secondly the detailed license conditions that should be placed on Scottish Water's retail business. These two consultations will depend upon the progress of the Scottish Executive's proposed framework for competition in the water industry in Scotland.

9.3.2 Accountability

Explaining the role of this Office and other stakeholders

We believe that the Scottish Executive's proposals to strengthen the regulatory framework in Scotland will help improve both actual and perceived accountability. The establishment of a Commission should depersonalise regulation – a Commission arriving at a joint decision is always likely to be considered more accountable than an individual with a similar power.

The proposal to give the Commission the power to decide prices subject to ministerial guidance is welcome. This will ensure that authority and responsibility are aligned. The responsibility for each decision will be clear and unambiguous. This should be more comprehensible than the previous system where Ministers had to take decisions on the basis of a Commissioner's advice.

Providing opportunities for comment

As explained above, we have included a number of opportunities for stakeholders to learn about our work and to make their representations to us. We believe that this will also play an important role in improving the accountability of this Office.

9.3.3 Proportionality

There has been a concern from some quarters (principally Scottish Water in its first year and the trade unions) that our analysis lacked proportionality. The assertion was that we had adopted regulatory tools from south of the border and had blindly applied these in Scotland, taking little or no account of the maturity, geography and asset base or the public sector nature of the water industry in Scotland. Similarly there was a concern about how quickly we had asked Scottish Water to narrow the efficiency gap.

We accept that we perhaps did not explain in sufficient detail all of the steps that we had taken to ensure that Scottish Water was treated fairly. These steps included (but are not restricted to): changes to the models to reflect the large number of small assets in Scotland; the provision of £200 million of spend to save from customers; and the fact that we did not adjust Scottish costs to reflect the lower service levels offered in Scotland. We are confident that we took full account of all of the factors that could have disadvantaged Scottish Water.

We did explain our method for assessing how quickly Scottish Water should close the efficiency gap in some detail. Looking back, it might also have been helpful to

re-emphasise the importance of spend to save in making our rate of catch-up less demanding.

In the *Strategic Review of Charges 2006-10*, we will pay particular attention to issues around comparability of companies, costs and levels of service. We will seek to set targets that are proportionate and to take full account of factors that would both increase or reduce the targets.

9.4 Conclusions

We believe that the *Strategic Review of Charges 2002-06* set a framework that has contributed to a significant improvement in the value for money that customers have received and can expect to receive in the next several years. Scottish Water is now well on its way to reducing its operating costs on a like-for-like basis by some £145 million. This alone will mean that customers' bills will be some 15% less than they would otherwise have been.

The Review was also the catalyst to significant improvements in the industry's understanding of its customers and its assets. This is a solid foundation for further improvements in value for money in the next regulatory period.

We are pleased that the *Strategic Review of Charges 2002-06* has played a part in reversing years of deteriorating efficiency in the water industry in Scotland. However, we recognise that there are a number of areas where we could and should improve.

We have adopted the principles of the Better Regulation Task Force and intend that this next Review will be as transparent as possible. We hope that our actions and the proposals by the Scottish Executive to strengthen the regulatory framework will also ensure that our Office is seen to be accountable to stakeholders.

Section 2: Chapter 10

Powers of determination

10.1 Introduction

In Section 1 we discussed the current framework for regulation of the water industry in Scotland. In this section we look at proposed developments in the regulatory process that are likely to impact on the *Strategic Review of Charges 2006-10*.

Perhaps the most significant of these developments are proposals by the Scottish Executive to strengthen our powers and structure. Currently, our powers are 'advisory' in that we provide advice to Ministers and it is then up to Ministers to make decisions. Our powers are also currently vested in one individual, the Water Industry Commissioner. The provision of appropriate advice is the sole responsibility of the Commissioner.

The Water Services etc (Scotland) Bill, introduced in June 2004, proposes a number of important changes to the regulatory framework, including granting our office 'powers of determination' and allowing Scottish Water a right of appeal to the Competition Commission. The Bill also proposes the establishment of a Commission to regulate Scottish Water, instead of regulation by an individual.

In simple terms, the 'power of determination' means the legal right of the regulator to set prices and other targets. Such powers carry responsibilities for the regulator, especially when establishing charge levels. These powers are exercised within a framework established by law and ministerial guidance. To counterbalance these powers, the regulated company would expect to have the right of appeal to an independent body, normally the Competition Commission. The Water Services etc (Scotland) Bill proposes introducing this right of appeal for Scottish Water.

In this chapter we discuss the background to these proposals. We describe in detail what powers of determination are and how they are exercised by other regulators. We outline other sectors' regulatory structures and explain the Scottish Executive's

proposals in the Draft Bill. Finally we identify the possible implications of the proposals for our *Strategic Review of Charges 2006-10*.

10.2 Current legal framework

Under current arrangements, we have a statutory duty to advise Ministers on the matters to be taken into account and left out of account in the setting of charges to customers. Ministers therefore commission this advice, either in the form of a Strategic Review or in ad hoc requests. Ministers can accept this advice, amend it (and give reasons), or substitute their own advice (and give reasons). The advice and any amendments are to be published by this Office. It is up to Ministers to decide an appropriate level of funding for the industry. There is no formal appeal mechanism for Scottish Water.

In addition to advising on overall funding levels, each year we are required by law to agree the detailed tariffs that Scottish Water proposes to charge customers. In proposing these tariffs, Scottish Water should take account of the advice agreed by Ministers. Our role is to ensure that the tariffs in total will generate the required level of revenue and that any proposed change in the balance of revenue from different customer groups is appropriate and consistent with the advice.

10.3 Ten principles

In Chapter 6 we discussed the events leading up to the development of the 'ten principles'. The 'ten principles' were agreed by the Scottish Executive, the Commissioner and Scottish Water.

Principle 9 states:

The Executive will investigate setting up a prospective appeal mechanism to the Competition Commission.

Principle 9 committed the Scottish Executive to consider an appeal route for Scottish Water to the Competition Commission. This was seen as a possible necessary addition to the existing regulatory framework which

would allow the management of Scottish Water to challenge targets that they considered to be inappropriate.

The Water Services etc (Scotland) Bill, introduced in June 2004, proposes the creation of a water industry commission with powers of determination and a right of appeal for Scottish Water to the Competition Commission.

This proposed right of appeal for Scottish Water would ensure that challenges to regulatory decisions can be assessed in an objective and independent way. It would also help reinforce the requirement on our Office to ensure that regulatory decisions are made in a robust, auditable and transparent manner.

10.4 Finance Committee Inquiry

In Chapter 8 we discussed the inquiry by the Finance Committee of the Scottish Parliament. Part of its remit was to investigate accountability, looking at the role of the Water Industry Commissioner, and relationships with Scottish Water, the Scottish Executive and local authorities.

In evidence to the inquiry we suggested that economic regulation for the water industry in Scotland should work in broadly the same way as for other utilities. Under this model, Ministers would provide clear guidance on social, environmental and public health priorities and the regulator would then, through a transparent process, set maximum prices that can be levied on customers. Scottish Water would have the right of appeal on regulatory decisions to the Competition Commission. We said that this very clear process would reduce uncertainty amongst stakeholders on roles and responsibilities.

The Finance Committee published its findings in April 2004. The report included a recommendation to strengthen the regulatory regime:

88. The Committee believes that an improved structure and support for the WIC is needed to ensure independent regulation and transparency

across the industry. Modelled on some of the English and UK regulators, an Office of the Water Industry Commissioner, including a non executive membership, could provide greater accountability and continuity for the Scottish water industry. Consideration should be given to whether certain decisions should be taken by the WIC in the context of advice from Ministers rather than the reverse.

In our response to the Committee's findings, we said:

We agree. We have been advocating for some time that, in the interests of customers, the water industry in Scotland should be regulated in a way that is more transparent and accountable, consistent with UK regulatory policy.

We welcome the proposals announced by the Minister in response to the Finance Committee report with regard to the creation of a regulatory board structure with non-executive membership. This will strengthen the regulatory function and increase transparency to the benefit of all customers.

A regulatory board would be an invaluable source of advice and support to the executive staff of WICS. It may also help to depersonalise the interactions between WICS and Scottish Water. We had sought to gain some of the long-term benefits of a regulatory board by establishing an advisory panel. This panel includes experts from the legal, regulation, business, academic and public service worlds. Unfortunately, owing to budgetary constraints, we have had to disband this Panel for the time being.

In particular we would advocate a move to a regulatory regime, more consistent with UK regulatory policy, in which the regulatory board sets price caps and determines charges based on guidance from Ministers. This will improve clarity of roles within the industry and help ensure that customers can benefit from the potential advantages of the public sector model.

The Scottish Executive gave an immediate initial response to the Committee's report, followed by a letter dated 14 June 2004.

The Scottish Executive outlined its proposal to establish a commission with determinatory powers in its Water Services etc (Scotland) Bill.

The Scottish Executive's proposed changes are set out in detail later in this chapter. Before reviewing these proposals, it is helpful to examine the components of UK regulatory policy which the Scottish Executive is proposing to introduce to the water industry in Scotland.

10.5 Powers of determination

Broadly, powers of determination are the powers vested in regulators to determine the charges levied by regulated companies. At a more detailed level, powers of determination are more far-reaching than simply the setting of charges. Typically, regulators' powers would also include areas such as:

- imposing conditions of appointment on industry participants;
- resolving disputes between industry participants and customers;
- determining the basis and extent of charges; and
- dealing with the insolvency or failure of an industry participant.

These are wide-ranging powers, which will impact directly on industry participants and customers. As a counterbalance to powers of determination, regulated companies have a right of appeal. There are two avenues for appeal – the Competition Commission and judicial review.

10.5.1 Appeal to the Competition Commission

If a regulated company disputes the regulator's price limits, it can require the regulator to refer the determination to the Competition Commission.

The Competition Commission is an independent public body with the technical, economic and legal expertise to adjudicate in disputes between companies and their regulators. Its involvement helps to ensure that the charge-setting process, carried out in the knowledge of a possible referral, is robust and transparent. If a case is referred to them, their decision will be binding. This check also ensures that regulators' decisions are subject to appropriate expert scrutiny.

Following a referral, the Competition Commission would initiate a process of determination of the price limits. Its functions are set by statute. Neither the regulator nor the water company requesting referral can narrow down or broaden out the Commission's functions. The matters that the Commission must take into account are the same as those taken into account by the regulator.

The Competition Commission's conclusions are binding. Until the Commission makes its decision the regulator's original determination stands. In practice, this means that all companies have to implement the determination of price limits set in the regulator's determination until such time as the Competition Commission has reached a conclusion.

Once the Competition Commission has completed its inquiry and made its determination, the price limits set by the regulator are replaced. The new limits would apply for the remaining years of the determination period.

10.5.2 Judicial review

In the UK, the exercise of 'powers' by a public body is subject to judicial review. In principle, the purpose of judicial review is to protect citizens from abuse by ensuring that the powers and duties of government and other public bodies are exercised consistently and within their legal bounds. This procedure can be seen therefore as another means by which a company – or any third party with some interest in the water industry – could appeal against a regulator's decision.

Judicial review is the mechanism used by the courts to review the way in which government Ministers or

departments, local authorities and/or other public bodies exercise their powers and carry out their duties. It is concerned with reviewing not the merits of the decision that has led to the complaint, but the decision-making process itself.

The procedure may be invoked by a company, an individual or even an interest group that considers itself to be adversely affected by misuse of a public body's powers, provided there is no other suitable means of redress available and the application is made to the court promptly.

In addition to bringing judicial review proceedings, interested parties may intervene and be heard on applications for judicial review. Judicial review is being used increasingly as it is seen, often through well-publicised cases, as an effective means of control of government and other public bodies.

10.6 Implications for regulatory process

Regulators have a duty to act fairly and to take into account all relevant matters when making a decision. They also have to exercise powers reasonably and lawfully; and meet legitimate expectations for proper procedure. An example is the requirement to give full written reasons for decisions.

If a party thinks that one or more of these duties have not been met in arriving at a decision then it can ask for judicial review of the process or refer the decision itself to the Competition Commission.

In Chapter 9 we discussed the lessons learned from the *Strategic Review of Charges 2002-06*. We believe that the proposed introduction of powers of determination is consistent with the clear process that we have established for the *Strategic Review of Charges 2006-10*.

The proposed introduction of a right of appeal will also further reinforce the requirement to record carefully the information that we use to determine charges and our rationale for the detailed assessments and decisions

that we have to make. We believe that the proposed changes to this Office and its powers, and our clear framework for the *Strategic Review of Charges 2006-10*, will improve the robustness and ease of understanding of the Review.

10.7 Review of other regulators and their powers

Regulators have duties and powers that are defined in statute and through licences that govern the operation of the companies.

In large part, the powers available to regulators reflect their duties. Most UK regulators have powers of determination, reflecting the fact that their duties might otherwise have been exercised by Ministers. These powers are wide-ranging and involve more than just fixing charges. We can illustrate this by examining Ofwat's other duties and powers.

Ofwat's general duties are those of the Director General as specified in the Water Act 1989 and the Water Industry Act 1991. Under these Acts, the Director General has a duty to:

- ensure that the functions of the companies are properly carried out;
- ensure that the companies can finance the carrying out of their functions;
- protect the interests of existing and potential customers;
- promote economy and efficiency on the part of the companies; and
- facilitate competition where appropriate.

In carrying out its statutory duties, Ofwat has a variety of powers. For example, the 1989 and 1991 Acts grant powers to:

- impose conditions when appointing water or sewerage undertakers¹;

¹ Water and sewerage companies and water only companies require an Instrument of Appointment, which gives the legal right to provide water and sewerage services. Ofwat is responsible for granting, modifying and renewing Instruments of Appointment.

- enforce compliance with provisions made in the company Instruments of Appointment;
- resolve disputes on whether standards of performance required by statute in the provision of water services and sewerage services have been met;
- determine the terms and conditions for non-domestic supplies where agreement cannot be reached between the parties;
- determine the terms on which cross boundary sewers discharge into a company's sewer where agreement cannot be reached between the parties;
- determine the interest rate applicable where money is borrowed to finance the provision of a water main or where sums of money have been deposited with the company as security for an obligation;
- request a special administration order, ie an order directing that the company be managed by a person appointed by the High Court;
- require undertakers to give and take bulk supplies (on the application of a water undertaker).

The most visible power exercised by Ofwat is the power of price determination, but it also has many other powers. The powers available to this Office will obviously be different and more limited, reflecting the public sector nature of the industry.

10.8 Regulatory structures

Other regulators have either already adopted Board structures or are moving towards them. Where they have been set up, Boards not only depersonalise regulation (through collective responsibility) but also bring relevant professional experience to bear on the work of the regulator (through non-executive directors with relevant professional expertise).

For example, the Gas and Electricity Markets Authority determines strategy and makes major policy decisions

for Ofgem to implement. It comprises a Board of five executive and nine non-executive members, appointed by the Secretary of State. The non-executive directors have backgrounds in commercial, financial, public sector and energy industry sectors.

In the water sector in England and Wales, the Water Act 2003 made provision for the Water Services Regulation Authority to be set up. This Board will replace the Director General of Water Services. However, it will not be established until after Ofwat's current price review, due to be completed later this year.

In the communications sector, Ofcom's Board provides strategic direction for Ofcom. It comprises three executive and six non-executive directors. The non-executive directors have backgrounds in telecommunications, news media, journalism, property and economics.

The Office of Rail Regulation is led by a Board appointed by the Secretary of State for Transport. It has five executive and six non-executive directors. The non-executive directors have backgrounds in law, regulation, finance, customer service and railways.

10.9 Proposals for Scotland

The proposals in the Water Services etc (Scotland) Bill 2003 mirror some of the features of UK regulatory policy described above.

Its objective is to strengthen the regulatory framework for the water industry, and to ensure that there is a robust and transparent regime that operates in the interests of all customers. The Bill includes measures to improve the accountability and transparency of the regulator, including replacing the current individual Water Industry Commissioner with a corporate body, the Water Industry Commission for Scotland. The Bill then goes on to give the Commission powers of determination over Scottish Water's charges.

The provisions in the Water Services Bill introduce a range of measures to establish reasonable limits on the new Commission's powers of determination, including:

- a) the statutory requirement to take guidance from Ministers;
- b) the right of Scottish Water to appeal to the Competition Commission following a determination; and
- c) the possibility of an interested party initiating a judicial review of the Commission's exercise of powers.

In detail, the Bill establishes the following steps in the determination of charges in the water industry.

- Within the limits and controls established by the policy framework set by Scottish Ministers, the Commission is first required to assess the total revenue that Scottish Water needs. This assessment must be based on the principle that the revenue raised by the scheme of charges, when taken with the borrowing and grants available to Scottish Water from Ministers, is sufficient for the purpose of enabling Scottish Water to perform its core functions effectively. In calculating this limit, the Commission must take account of all circumstances that might have a bearing, either positive or negative, on Scottish Water's ability to meet its obligations.
- The Commission will then determine maximum charge limits for Scottish Water's charges for its core functions. These charge limits will be based on the objectives set by the Minister and will reflect the cost to Scottish Water of maintaining its whole infrastructure across the country, irrespective of the actual cost of serving individual customers which will vary, for example, with distance from treatment works. The amounts determined would apply in relation to such periods as the Scottish Ministers may specify.
- In parallel, the Bill requires the Commission to consult on the process by which it carries out charge determination. The Commission must consult the Scottish Ministers, Scottish Water and any other person that might help in defining the optimal

charges policy. The Commission then makes and publishes a draft determination, after having taken into account the representations received. In doing so, the Commission must have regard to any complaint made to the Commission regarding the proposed scheme by such time as the Scottish Ministers may specify. The Commission must send a copy of the provision to the Scottish Ministers, Scottish Water and every water services and sewerage services provider. It must also publish details of every departure from the charges scheme initially proposed by Scottish Water.

- Following this consultation, the Commission will make a final determination of charge limits. The determination might make different provisions for different groups of customers or categories of services. Similarly to the current set up, a charge determination will be made for a medium-term period².

The Bill also provides for determinations to be reviewed, in advance of the date set for the next determination, if there is a substantial change in circumstances which results in a significant increase or decrease in the amount of revenue Scottish Water requires to carry out its core functions.

As discussed above, an important component of the new Bill is the introduction of a right of appeal to the Competition Commission on decisions made by the Commission.

Under the proposals, once the Commission has set maximum limits for Scottish Water's charges, Scottish Water will be required to propose a detailed charges scheme, which must adhere to the maximum charges set out in the Commission's determination. It is expected that Scottish Water will be asked to propose charges schemes on an annual basis.

An important feature of the proposals is that Scottish Water will no longer have discretion to make agreements with specific customers about their charges. Instead, all charges must be made by reference to a charges

² The first one is expected to cover charges in 2006-10.

scheme. Any departures from the charges schemes will have to be specifically authorised by the Commission on the basis that the charge-payer has taken actions that reduce the cost to Scottish Water of providing services to them. The Bill makes specific provision for existing agreements to be continued until they expire, and provision that they may not be renewed or extended.

Once the Commission approves a charges scheme, Scottish Water must make arrangements to allow any person to inspect the scheme at any reasonable time and to obtain a copy of the scheme or part of it on payment of a reasonable fee, as it may determine. Scottish Water also needs to publicise those arrangements and publish a summary of these schemes.

10.10 Impact of the proposals

Effective regulation is in the interests of customers and industry stakeholders. The proposals outlined in the Bill provide an opportunity to strengthen further the regulatory process in the water industry in Scotland. The creation of a Water Industry Commission for Scotland to take collective responsibility for the Commissioner's functions is in line with the restructuring proposed for the water regulator in England and Wales, and is consistent with the Board structures already established for other regulators. Like other sectors, the Commission will benefit from a high level of relevant experience from its future non-executive members.

Proposals regarding the introduction of powers of determination contain some material differences from the equivalent powers in England and Wales. From the standpoint of customers, the most significant difference involves Scottish Water's ability to borrow money. In most other regulated sectors, companies are freely able to access debt, subject only to conditions in the debt markets. Most other regulators do not have to adjust prices to take account of constraints on new borrowing.

The current proposals for Scotland would mean that Scottish Water is still subject to public expenditure limits. It is possible that in the future, it may be prudent for Scottish Water to borrow more than Ministers may be able to allocate in public expenditure. This would lead to an increase in customer charges beyond that included in the *Strategic Review of Charges 2006-10*.

10.11 Conclusion

The proposed measures to strengthen the regulatory framework for the water industry in Scotland will clarify the roles and responsibilities of this Office, Scottish Water and the Scottish Executive. The price-setting process should be more understandable. The establishment of a Commission should also serve to depersonalise regulation and to facilitate more effective communication with stakeholders.

The proposals in the Bill should also help ensure that challenges to regulatory decisions can be assessed in an objective and independent way. They will reinforce the requirement on our Office to ensure that regulatory decisions are consistent with the recommendations of the Better Regulation Task Force, ie that they are transparent, accountable, consistent, targeted and proportionate.

Section 2: Chapter 11

The core/non-core split

11.1 Introduction

This chapter explains the implications of the change in our remit under the Water Industry (Scotland) Act 2002. The Act introduced a distinction between Scottish Water's core and its non-core activities, and established that our remit should cover only Scottish Water's core activities and promote the interest of customers being provided with those activities. The chapter also outlines why the separation of core and non-core business is in the customer interest. Separation should ensure that customers of the core business pay only for the services they use.

In this chapter we examine:

- developments under the former water authorities;
- the findings of the Transport and Environment Committee's Inquiry in 2001;
- concerns expressed in the *Strategic Review of Charges 2002-06*;
- changes in legislation – the Water Industry (Scotland) Act 2002;
- further changes in legislation proposed by the Scottish Executive;
- potential impact of non-core activities on core customers in Scotland;
- protecting core service customers;
- separation of core and non-core activities in Scotland; and
- issues arising.

11.2 Developments under the former water authorities

In 1996, three regional water authorities were established in Scotland¹. Through their own initiative, and in response to customers, the authorities developed activities beyond the traditional provision of water and

removal of waste water. During the years that followed, there was mounting pressure on the authorities to control increases in bills to customers. By developing non-traditional activities, the authorities hoped to generate income that could offset, in part, increases in bills to customers for water and sewerage services.

Some activities provided a 'value-added' service to existing commercial customers. By providing services such as waste minimisation and consultancy for businesses, the authorities hoped to retain customers that might otherwise be tempted to find alternative ways to obtain water or treat waste water. The income from any customers who left the network would be lost, and could have an adverse impact on bills for customers who remained on the network.

The authorities also recognised that in many cases they could make more effective use of their assets by providing additional services, such as offering services using their scientific laboratories.

In 2001, Ministers announced the potential merger of the three authorities to form Scottish Water. At that time, the authorities continued to see opportunities in the growth of non-traditional activities. They felt that such growth could be used to attract commercially minded individuals into the business, helping cultural change that would ultimately benefit all customers through improved efficiency.

11.3 Findings of the Transport and Environment Committee's Inquiry in 2001

In 2001, the Scottish Parliament's Transport and Environment Committee Inquiry into water and the water industry recognised the issues around the distinction between core and non-core business, but sounded a note of caution.

The Committee's report stated:

"In supporting the authorities' ability to invest in commercial ventures the Committee wishes to emphasise the importance of continuing to focus on

¹ Local Government etc (Scotland) Act 1994.

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.”²

We supported the view that Scottish Water (or the authorities at the time) should be able to develop new business, particularly if this limited the risk of losing revenue from the largest commercial customers. But we also strongly supported the protection of the core business and its customers.

11.4 Concerns expressed in the Strategic Review of Charges 2002-2006

In the *Strategic Review of Charges 2002-06*, we reviewed the experience of the privatised water and sewerage companies in England and Wales in generating additional sources of business from non-core activities. We also looked at the development of non-core activities in Scotland and their success or otherwise.

We concluded that investment in new business by Scottish Water would need to be approached very cautiously. There was insufficient evidence that it had the potential to be of significant benefit to customers for the risks to be justified. These risks were not only the capital that is invested (either in cash or in capital investment) in any new venture; there were also risks associated with the diversion of management time away from the main task at hand – improving relative efficiency and developing more cost-reflective tariffs. Even if the profits of such ventures could have reached several million pounds, the benefits would be limited relative to the successful achievement of efficiency targets.

11.4.1 Experience of non-core activities in England and Wales

The Review examined the situation south of the border, where customers' money is not used to fund non-core business. Shareholders of the privatised companies bear all of 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 of the risk associated with non-core activity and, quite equitably, take all of 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 licence condition).

² Scottish Parliament, Transport and the Environment Committee, 9th Report 2001, Report into Water and the Water Industry, SP paper 362.

11.4.2 Risk of distraction

In the *Strategic Review of Charges 2002-06*, we said that it was easy to be distracted by thoughts of profits from non-core activities. This can overlook the extent of the sustainable revenue that needs to be generated and the costs incurred (particularly in the early years). We said that our role required us to monitor any non-core business activities that had the potential to affect revenue.

We concluded that it was important that customers in Scotland enjoyed similar protection to customers south of the border. 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. Our view was that commercial opportunities should be carefully assessed, because even if the venture appeared to generate a return relatively quickly, there may be hidden costs (such as costs to exit the business), which could adversely impact on customers' bills in the future.

We recommended that there should be an accounting separation of Scottish Water's activities into at least three areas: retail water services; networks and treatment; and non-core business activities. We noted that there would not necessarily be any need for regulation of non-core activities of the authorities after an accounting separation. This would require a clear arm's length relationship between the core and non-core businesses. 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.

Ministers accepted our recommendation for accounting separation.

11.5 Changes in legislation – the Water Industry (Scotland) Act 2002

Section 70(2) of the Water Industry (Scotland) Act 2002 defines what constitutes Scottish Water's core and non-core functions. In effect, it provides that Scottish Water's

core functions are the duties and powers conferred on Scottish Water by any enactment, including the 2002 Act itself, the Sewerage (Scotland) Act 1968 and the Water (Scotland) Act 1980. It excepts from this category functions exercised by Scottish Water by virtue of the powers conferred by subsection 25(1) of the 2002 Act, along with any functions conferred by subsection 25(2) that are exercisable in relation to 25(1). It is these functions which are the non-core functions.

In practice this means that Scottish Water's core functions comprise a wide range of defined powers and duties, all of which are set out in statute. Its non-core functions amount to a general power to act without the specific authority of statute, but subject to the condition, at 25(1), that any such action is "not inconsistent with the economic, efficient and effective" exercise of the core functions. In brief, if an activity is defined by and carried out under the authority of any Act it is core, if not it is non-core.

11.5.1 Scottish Water's commercial powers

Section 25 of the 2002 Act as a whole provides Scottish Water with the statutory basis on which to pursue its core and non-core functions through a variety of commercial means. It provides that Scottish Water can:

- form or promote (whether alone or with others) companies (within the meaning of the Companies Act 1985);
- subscribe for share or loan capital of any person;
- guarantee the discharge of any obligation (whether financial or not) of any person;
- form partnerships, enter into arrangements or agreements and co-operate in any way with any person; and
- enter into a contract with any person for the provision or making available of assets or services, or both (whether or not together with goods) whether by Scottish Water or by that person.

As regulator, we will monitor the core activities carefully to ensure that customers' bills are not impacted by any non-core initiatives pursued by Scottish Water.

11.5.2 Change to the remit of the Water Industry Commissioner

At the time of the *Strategic Review of Charges 2002-06*, our remit, as defined in statute, was to look after the interests of customers of the three former water authorities. Legislation did not distinguish traditional, or core, activities from non-traditional, non-core, activities. Our Review covered the whole of the authorities' activities, expenditures and income.

As noted above, in 2002 our remit changed. The legislation now defines the Water Industry Commissioner's role by reference to Scottish Water's core functions.

The Water Industry (Scotland) Act 2002 sets out the Commissioner's role:

*The Commissioner has the general function of promoting the interests of customers of Scottish Water in relation the provision of services by it in the exercise of its core functions.*³

Also, the Commissioner's advice on charges is to have regard to:

*the economy, efficiency and effectiveness with which Scottish Water is using its resources in exercising its core functions.*⁴

This is a useful clarification, as it brings Scotland into line with England and Wales where the regulator's responsibility is in regard to customers of the 'appointed' (licensed) business, which can be broadly considered as equivalent to Scottish Water's core functions.

Our focus on core functions will require us to:

- define core functions at a detailed level;

- monitor the allocation of Scottish Water's costs between core and non-core functions; and
- ensure that core and non-core revenues reflect the allocation of costs.

11.6 Further changes in legislation proposed by the Scottish Executive

The Water Services (Scotland) Bill, which is currently before the Scottish Parliament, includes provisions for the creation of a Water Industry Commission to succeed the office of the Commissioner.

The Commission would have the additional functions of:

- determining the limits to be placed on the charges that Scottish Water levies customers for the provision of its core functions; and
- administering a regime to license the provision of retail water and sewerage to non-domestic customers.

Scottish Water's retail activities would fall to be licensed under provisions in the Bill that would empower Ministers to require the creation of a separate subsidiary to perform these activities. The Bill also provides that were such subsidiary to be created, its functions would be treated as non-core. We discuss the wider implications of this in Chapter 3. However, the Bill could well have implications for the way we define and separate core and non-core.

Effective regulation of the core business will depend on clear definitions of the activities included in the core business and robust allocation of costs to those activities.

11.6.1 Differences with England and Wales

The Water Industry Act 1991⁵ sets out the duties, rights and powers of the companies in England and Wales. They have a duty to provide water and sewerage

³ Water Industry (Scotland) Act 2002 section 1.

⁴ Water Industry (Scotland) Act 2002 section 33.

⁵ Amended by the Competition and Service (Utilities) Act 1992.

services, although the legislation does not define exactly the limits or the extent of the core business.

In addition to the legislation, companies in England and Wales operate under licence. Licence Conditions F and K require that a company reports separate accounts for the appointed business⁶ as if its sole business is to be a water undertaker (including sewerage). A company must also ensure that there is no cross-subsidy between the appointed business and other activities of the appointed business and associated companies. Any dealings must be at arm's length. The appointed business must be ring fenced (that is, kept separate from any impact arising from the non-appointed business) to ensure that it has sufficient rights and assets to carry out its regulated activities or to be passed on to a special administrator.

This requires Ofwat to have a view on what forms the core business. Its approach is set out in its Regulatory Accounting Guidelines (RAG). RAG 3.05 includes the following definitions:

"Appointed Business

Definitions

- The Licence separates the activities of an Appointee into:
 - the appointed business which is defined to be the regulated activities of the Appointee; and
 - the non-appointed business which is defined to be the non-regulated activities of the Appointee.
 - Regulated activities are defined in Condition A of the Licence to be the "functions of" and the "duties imposed on" a water and sewerage undertaker by the Water Industry Act 1991. Regulated activities are consequently those activities that are necessary in order for an Appointee to fulfil the functions and duties of a water and sewerage undertaker.
 - In general, non-regulated activities are activities for which either the water and sewerage undertaker is
 - not a monopoly supplier (for example, the sale of laboratory services to external organisations) or the activity involves the optional use of an asset owned by the Appointed Business (for example, the use of underground assets for cable television)."
- The guidelines provide further details, by way of examples, on the division between appointed and non-appointed activities based on these criteria (although Ofwat notes that the examples are not intended to be exhaustive).
- "Appointed activities:
 - water supply (including bulk supplies and large user customers)
 - sewerage
 - sewage treatment and disposal
 - management and holding of protected land
 - supply of non-potable water
 - rechargeable work for which Appointee is monopoly supplier
 - conservation
 - recreation and amenity uses of those waters and lands which the Appointee employs for the purposes of water supply, in order to comply with the Water Act 1989, for example rambling.
 - Non-appointed activities:
 - sale of non water and sewerage services to third parties including the Environment Agency, for example laboratory, computing, billing, engineering, meter reading, support and transport services
 - plumbing services
 - consultancy

⁶ The appointed business is that which holds an Instrument of Appointment, the terms of which are set out in the licence.

- external sales of energy
- billing commission
- stores sales to third parties
- rechargeable work for which Appointee is not monopoly supplier
- recreation and amenity uses of non appointed assets in conjunction with those waters and lands which the Appointee employs for the purpose of water supply, beyond the duties imposed by the Water Act 1989, for example water skiing and restaurants.”

Ofwat’s guidelines also recognise that ambiguities may arise:

- “Despite these definitions, exceptions will arise to the general rules. (For example, trade effluent treatment is regulated under the Licence but undertakers are not monopoly suppliers of this service.) The consistency and accuracy of the definitions applied will become increasingly important as appointed companies continue to diversify. Appointees are therefore required to detail in the notes to the regulatory accounting information their definition of appointed and non-appointed businesses adopted for the purposes of those accounts. This note should be, as far as is practicably possible, in line with the guidance provided above.”

We expect to draw heavily on Ofwat’s work as we too seek to ensure that there is a detailed definition of core activities.

11.7 Potential impact of non-core activities on core customers in Scotland

The current absence of a clear ring fence between the two types of activity could mean that the pursuit of non-core activities would have an impact on customers of the core business. These customers might find that their

bills were higher because they had to subsidise non-core activities or that the risk in the business was greater, leading to higher costs and hence higher bills. This may be the situation in Scotland today.

Customers can be affected in other ways. A lack of clear separation between the core and non-core activities of Scottish Water could have an impact by:

- poor allocation of costs between core and non-core activities, leading to cross-subsidy; and
- management being distracted from the core business in pursuing non-core business.

Cost must be allocated correctly between core and non-core business because it can affect bills. Core customers should broadly pay charges that reflect the cost of providing a service to them; the higher the cost, the higher the bill. If costs incurred in non-core activities are allocated to the core business, customers of that core business will meet those costs in addition to the costs of the core business.

It is therefore in customers’ interests that there is a clear separation of core and non-core business and that any interaction between these two areas is carefully recorded and monitored. For example, a member of staff of the core business could do some work for a non-core business. The cost of the person’s time spent on non-core business should properly be paid to the core business.

The extent of such hidden cross-subsidies could be significant. Scottish Water’s management has to spend time on both core and non-core activities. The core business is by far the largest part of Scottish Water and we would expect management to spend most of its time on the core. However, non-core business could take up a not insignificant proportion of time in relation to its overall value to the business. We believe that robust accounting separation will ensure that there is a proper focus on core activities.

Non-core activities might in the future provide a source of retained profit for Scottish Water. This profit could have been used to lower charges within the core business. However, in the shorter term there is a risk that non-core business will not generate a profit and will increase bills for core customers. The separation of activities does not mean that the owner could not choose to use future profits to subsidise customers of the core business.

It would therefore appear to be clearly in the customer interest for there to be an appropriate level of separation between core and non-core activities.

11.8 Protecting core service customers

Public ownership of the water industry in Scotland should provide some degree of protection. In particular, all non-core activity must satisfy the test that its pursuit by Scottish Water is not inconsistent with “the economic, efficient and effective exercise” of Scottish Water’s core functions. In addition, under section 56 of the 2002 Act, Ministers are required to give Scottish Water directions as to how it conducts its non-core activities.

We believe that it is useful to examine whether customers of the core business of the water and sewerage companies in England and Wales have been successfully insulated from the risks of non-core activities.

11.8.1 The core water and sewerage business is ring fenced within its group

In England and Wales, the ring fence protects the assets and resources of the regulated business from other activities of the Group. This is achieved by means of Licence conditions and accounting rules. Licence Condition F requires Directors of the appointed business to provide an annual statement that the ring fenced business has adequate financial and managerial resources to carry out the regulated activities. Moreover, if the appointed business (or an associate business) is proposing to embark on any activity which might be material to its ability to carry out regulated activities, it must notify Ofwat.

11.8.2 Accounting separation

The company’s auditors and Reporters will scrutinise the accounts of the ring fenced business. They ensure that the accounts are consistent with the Regulatory Accounting Guidelines.

These audited regulatory accounts are in addition to the holding company accounts. Moreover, the Reporter scrutinises all of the regulatory information provided to Ofwat.

11.8.3 Transfer pricing rules

Transfer pricing is the price charged for goods and services (including staff and consultancy) traded between the core and non-core parts of the holding company. Ofwat examines the price paid for goods and services to ensure that price limits are set on the basis of the actual costs of providing water and sewerage services to customers and not costs inflated by cross-subsidy. This is of particular importance where the core water and sewerage business overpays. This could be an attempt to move money to the non-core to take it out of reach of the regulator. This would benefit shareholders at the possible expense of customers.

The rules for transfer pricing are set out in Ofwat’s Regulatory Accounting Guidelines RAG 5.03. The guiding principles are that:

- the appointed business pays a fair price for services and products received;
- companies are based on market price or less – where no market exists, transfer prices are based on cost;
- market testing is used to establish market prices for supplies, works and services provided to the Appointee; and
- costs are allocated in relation to the way resources are consumed.

Ofwat requires the licensed companies to demonstrate, through the application of these principles, that there is no cross-subsidy.

Ofwat monitors carefully the companies' compliance with the guidelines. Where there is an area of concern about a particular company, Ofwat sends a team to examine transactions between the appointed business and other group companies.

11.8.4 Has the regime in England and Wales been effective?

Ofwat strictly enforces ring fencing, accounting separation and transfer pricing. The license conditions and Ofwat's monitoring regime fully protect customers from any trading problems in the companies' unregulated activities. The regime is especially important in England and Wales because of:

- the creation of multi-utilities, eg United Utilities;
- ownership of water and sewerage companies by other concerns, eg Thames Water by RWE; and
- diversification, eg South Staffordshire Water and Severn Trent Water.

The effectiveness of the ring fence was clearly demonstrated when the collapse of Enron, which owned Wessex Water, had no impact on core business customers.

The ring fence has protected the interests of customers and provided stability for the core business in the event of takeovers, mergers and diversification.

11.9 Separation of core and non-core activities in Scotland

The effect of the Water Industry (Scotland) Act 2002 is to require us to take steps to identify separately core and non-core activities for regulatory purposes. It is likely that implementation of the Water Services Bill will require a separation of the non-domestic retail function.

In order to ensure that we promote the interests of customers of the core business, we will have to take the following steps:

- clearly identify core activities;

- establish a set of rules governing transfer pricing between the core and non-core activities; and
- ensure that reporting is consistent with these rules and that this reporting is subject to rigorous monitoring and audit.

11.9.1 Definitions of core activities

We have begun to identify core and non-core activities. Our regulatory information returns will be updated to reflect this understanding. This will impact on information about costs, assets, customers, the investment programme and financing. Our initial activity definition is set out in Table 11.1.

Table 11.1: Definitions of core activities

	Retail	Non-Retail
Core	<ul style="list-style-type: none">• Retail contract management & systems• Customer information systems• Customer account management (key account management)• Customer meter reading• Customer billing• Customer revenue collection• Customer debt collection• Customer debt write-off• GMS appropriate to billing, complaints etc.• Metering• Disconnection notification	<ul style="list-style-type: none">• Abstraction, treatment, storage, conveyance & distribution of potable water• Conveyance, treatment & disposal of sewage including public septic tanks• Quality control• Call centre for interruptions, quality problems, flooding• Customer information systems• GMS appropriate to interruptions, flooding, and infrastructure etc.• Supply pipe repair• Supply installation• Physical disconnection• Communication/education of flush/don't flush, reservoir safety
Non-core	<ul style="list-style-type: none">• Added value services – insurance, bottled water etc.• Non-domestic septic tank emptying• Communication/education• Tailored service consultancy• Grey water• General engineering consultancy• Film location services• Forestry	

11.9.2 Regulatory accounting

We have begun work to introduce regulatory accounts for Scottish Water. Regulatory accounts use standards, breakdowns and definitions designed to allow the regulator to fulfil his functions. They are used in most regulated utilities in the UK. These regulatory accounts will ensure that we are able to monitor effectively the separation of core and non-core activities.

We have set out draft tables and definitions, consistent with regulatory accounting, for Scottish Water to report its operating costs. These separate core and non-core business, and retail and wholesale activities. We will continue to discuss our requirements with Scottish Water with a view to agreeing final versions of these tables by the end of 2004.

We will need to produce further tables and definitions covering areas such as the balance sheet, cashflow, assets and investment. This work will have to be complete by the end of this year so that Scottish Water can prepare its second draft business plan on this basis.

An important area of work in introducing regulatory accounts will be the definition of transfer pricing rules. We would expect that these rules would be broadly similar to those used by Ofwat.

11.9.3 Monitoring

We currently receive a monthly RAB (resource accounting and budgeting) report from Scottish Water. This sets out Scottish Water's income and expenditure against the budget for the period. It makes a broad distinction between core and non-core operating costs and reports costs recharged to new non-core operations. This has allowed us to keep track at a high level of core/non-core costs but does not provide the necessary detail to examine individual activities. These tables will have to be updated so that they are consistent with the regulatory accounts. Our other information returns will also require significant updating.

11.9.4 Independent audit

We introduced an independent auditor (called a Reporter) at the start of 2004 to check that all of the information Scottish Water returns to us is accurate. The role of this auditor is in most respects the same as that of the reporter for the companies in England and Wales. The remit of the Reporter is described in detail in Chapter 6.

Part of the function of the Reporter is to examine and provide an opinion on the detailed accounting information provided by Scottish Water in its annual

regulatory return. In particular, we ask the Reporter to comment on Scottish Water's cost allocation systems that would underpin any accounting separation.

Once we have implemented the accounting separation, we will use the Reporter to monitor transfer pricing rules and report any issues.

11.9.5 Business plans

Scottish Water will produce a draft and then a second draft business plan to inform the *Strategic Review of Charges 2006-10*. The plans will be submitted to us and to the Scottish Executive in October 2004 (first draft) and April 2005 (second draft). The framework for these plans is described in Chapter 14. We expect Scottish Water to set out its assessment of non-core activities and its plans for pursuing non-core business in these documents. The business plans will help identify issues that need to be resolved for accounting separation to go forward successfully and we will work with Scottish Water to find solutions.

The information presented in the final version of the business plan will be accounting separation, transfer pricing and regulatory accounts initiatives.

11.10 Issues arising

11.10.1 Assessing performance

Separating core and non-core business will help us to regulate Scottish Water effectively. If it is undertaken properly, and costs are allocated correctly, we will be able to make judgements based on a truer picture of the core business that we regulate.

Our introduction of regulatory accounts will facilitate our monitoring and comparison of Scottish Water's performance against that of the appointed businesses of the water companies in England and Wales. Separation of Scottish Water's core business will allow us to do this without having to make adjustments for non-core activities. Regulatory accounts will ensure that we compare levels of cost in England and Wales and in Scotland on a like-for-like basis.

An appropriate separation of core and non-core business will therefore increase comparability in the benchmarking process and result in more robust efficiency targets. The greater degree of clarity will benefit the regulator in monitoring progress towards achieving the efficiency targets. It will also increase regulatory transparency and so give the management of Scottish Water a greater degree of comfort that the efficiency targets are realistic and achievable.

11.10.2 Issues for Scottish Water

Scottish Water is aware of the potential difficulties of accounting separation. It is already implementing systems for allocating costs that would appear to be well-suited to identifying core and non-core operating costs. We are hopeful that these systems will be sufficiently robust to meet the requirements of accounting separation. Extending the allocation of core and non-core activities to the remaining areas of financial reporting is likely to be a significant challenge for Scottish Water.

Scottish Water also faces choices – to what extent should it maintain existing non-core business, and in what areas might it be prudent to pursue new non-core activities.

Perhaps the most significant issue, however, is how Scottish Water will ensure that its policies on non-core activities, and especially the pricing of those activities, are immune from successful challenge from other firms under competition law.

11.10.3 Reporting obligations of Scottish Water

Scottish Water compiles annual accounts that are consistent with guidance provided by the Scottish Executive. This guidance is broadly consistent with UK accounting standards. These 'statutory accounts' require no separation of core and non-core activities.

The separation of core and non-core activities is likely to affect the annual statutory accounts. This separation will increase the reporting obligations of Scottish Water to both its regulator and to the Scottish Executive. This burden will, however, be no greater than that faced by companies south of the border.

11.10.4 Funding of non-core activities

Financing of any non-core activity by Scottish Water will currently have an impact on the core business, at least in the short run. This is because the start-up resources could have been used to improve the level of service to customers or the environmental or public health compliance of Scottish Water. If the non-core activity continues to be cash negative, this could consume additional cash that could have been used by the core business and, within the current framework, would have an adverse impact on customer charges or taxpayers. Since the taxpayer only provides access to borrowing, ultimately this cash outflow will have to be funded by customers of the core business until sufficient retained profit is available to remunerate initial investment. Customers therefore have a clear interest in ensuring that there should not be investment in any non-core activity that impacts on the level of service or charges to customers of the core business.

If separation of core and non-core activities is to be implemented effectively, it will be important for both Scottish Water and the Scottish Executive to have decided how non-core activities will be financed. It should not, however, be at the expense of customers of the core business.

11.11 Conclusion

Core business in England and Wales is ring fenced and customers' bills are not affected by non-core business activities. We welcomed the changes in the 2002 Act because we believed that there should be the same level of protection for customers in Scotland. It remains our view, expressed in the last Strategic Review, that non-core business is intrinsically risky, and that the focus of Scottish Water should stay on core activities.

The introduction of accounting separation of core and non-core activities will help ensure that customers in Scotland enjoy the same protection as those in England and Wales. It will also serve to focus attention on the nature and scale of non-core activities, which should help Scottish Water make informed decisions about its non-core activities. The improvements to cost allocation that will be driven by the regulatory accounts will also

help Scottish Water to understand its core costs better. This should help accelerate progress on efficiency.

Implementing accounting separation is not a simple matter, and we will need to work closely with Scottish Water to ensure that it is successful. This is in the interests of all customers.

Section 2: Chapter 12

Introduction of a framework for retail competition

12.1 Introduction

Regulation of the water industry in Scotland continues to evolve and improve. In the previous two chapters we discussed two proposed developments that will strengthen the regulatory process: the introduction of determinatory powers for the new water industry commission and the separation of core and non-core functions for Scottish Water.

In this chapter we look at a third major development that is planned for the water industry in Scotland: the introduction of a framework for retail competition. We explain the proposed changes in detail and look at the likely implications for customers. We also look at the impact of the proposals on Scottish Water: in particular, the implications for the structure of Scottish Water, the way in which it operates and how it is regulated.

The Water Services etc (Scotland) Bill includes provisions requiring the Water Industry Commission to introduce and administer a regime to license retail competition for 'non-household' (business and commercial) customers. Subject to the Scottish Parliament approving these provisions, we propose that the licensing regime should be in place in Scotland by April 2008.

Prior to that date, we expect that the Scottish Executive will require Scottish Water to establish a subsidiary to manage its 'non-household' retail activities, which the Commission will license from the outset. In these circumstances, we expect that retail competition will have an impact on the whole of the period covered by the next Strategic Review of Charges.

12.2 Background to the proposed competition framework in Scotland

The Competition Act 1998 came into force in March 2000. This brought UK competition law into line with European law. The Act contained two prohibitions. Chapter One prohibits anti-competitive behaviour by companies and prevents them from entering into agreements that distort, restrict or prevent competition. Chapter Two prohibits a company from abusing its dominant position.

The Office of Fair Trading (OFT) enforces the Competition Act 1998. This power is shared with the economic regulators of utilities. For example, Ofgem has concurrent powers for the enforcement of competition law in the gas and electricity industries throughout Great Britain and Ofwat has similar powers with respect to the water and sewerage industry south of the border.

These regulators may use either competition powers or sector-specific powers to investigate the behavior of a company. Information gathered using sector-specific powers can be used for the purposes of an investigation under the Competition Act 1998 and vice versa.

The OFT has sole responsibility for the enforcement of the Competition Act 1998 in the water and sewerage sector in Scotland.

'In the market' competition has multiple service providers competing for individual customers. Service providers, who may be licensed, can enter and exit the market. Customers will choose their supplier based on the mix of price and service that they feel best meets their individual needs. Market participants succeed or fail depending on their ability to meet customers' needs better than their competitors.

'For the market' competition exists where service providers compete for the right to supply a service. A good example of 'for the market' competition is the water industry in France. In France, water and waste water services are the responsibility of individual local authorities. They seek to enter into an agreement with a water and sewerage service provider who will operate, maintain and upgrade the network and provide a service to customers in that area. These contracts are time limited.

Customers do not have choice in this model. They must pay the price for the service level that will be governed by the contract.

Another example is out-sourcing. A business might feel that it is not capable of carrying out a particular function efficiently. It can overcome this by outsourcing the function to have another party do it for them. It is possible to outsource several parts of the supply chain

to different contractors. This has been the model adopted by some other utilities, including water companies. Contractors can carry out the capital programme, operations and customer service. The experience of other sectors also shows that this model can co-exist with 'in the market' competition.

In the *Strategic Review of Charges 2002-06*, we conducted a detailed review of the structure of the industry. We concluded that 'in-the-market' competition was only likely to exist in the retail (customer services and billing) market. The experience of the energy markets demonstrated some of the potential benefits and also highlighted some of the potential pitfalls. These pitfalls can probably be effectively managed through the licensing system.

A paper by Professor Stephen Littlechild¹, electricity regulator at the introduction of competition in that market, examines retail competition in electricity. He notes that the largest customers benefit from better prices, value-added service and terms. The benefits for smaller customers include bundling with other utilities and more flexible tariffs and payment terms. He also notes that a dynamic retail market exerts upward pressure on wholesalers to be more responsive and efficient. It was clearly possible to consider 'for-the market' competition in other areas but this would be a decision for the industry.

Our analysis suggested that there were three principal risks faced by the water industry in Scotland as a result of the Competition Act. It was clear that the industry needed to improve its efficiency and allocate its costs accurately. We also believed that it would be better to establish a clear framework for how competition would work in the Scottish water industry. Inaccurate cost allocation or inefficiency represented a risk because it could lead a customer or a supplier to accuse Scottish Water of breaching the prohibitions under the Act. Likewise, we considered that a framework, which made it clear what Scottish Water was allowed to do and clarified the policy position on environmental and public health protection, could also reduce the risk of a challenge under the Act.

12.3 The introduction of competition to the water industry in Scotland

The Scottish Executive launched an initial consultation² on the development of competition in the Scottish water sector in June 2000. It set out possible changes to the statutory framework for the water industry in Scotland, including allowing new entrants to have access to the public water and sewerage networks. It proposed establishing a licensing regime for new entrants, which would be overseen by the Water Industry Commissioner.

In our response to this consultation we commented that:

"Competition in the water industry has the potential to bring significant benefits to customers, and will be in addition to the benefits brought by customer service and economic regulation. Comparative competition within the water industry has shown to be one way of providing the impetus for improvements in efficiency and customer service. The introduction of real competition would provide further pressure and potential rewards, thus leading to better value for money for all customers."

In October 2003, the Scottish Executive published a consultation on a draft Water Services (Scotland) Bill. It set out proposals for the introduction of limited competition to the water industry in Scotland. In the consultation, the Scottish Executive recognised that competition can bring benefits to customers through choice and encouraging efficiency, keener prices, greater customer responsiveness, innovation and improved standards.

The consultation discussed two key aspects of the proposed competition framework:

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

¹ Stephen C Littlechild, Competition in Retail Electricity Supply, Journal des Economistes et des Etudes Humaines, September 2002.

² "Managing Change in the Water Industry", A Consultation paper. Published by the Scottish Executive on 15 June 2000.

Retail competition — where Scottish Water would have sole responsibility for treatment and distribution on the public networks. It would treat water or waste water for a third party ‘retailer’ and would distribute it to or from the competitor’s customers using the public networks. In such cases the role of Scottish Water would differ from its present role of supplier in that while it would continue physically to supply water and sewerage services, it would do so on behalf of the retailer. It would be the retailer rather than Scottish Water who would have the direct commercial relationship with the customer.

The consultation noted that common carriage could encourage competition in the provision of water and waste water treatment services by enabling third parties to develop new treatment facilities that relied on the public networks to supply and serve their customers. There would also be scope to use retail competition as a means of providing customers with more choice in how they pay for water and sewerage services. The Executive added, however, that these options also posed a range of risks.

The key elements proposed in the consultation were as follows:

Prohibiting common carriage on the public networks

The Executive proposed that common carriage on the public networks should be prohibited. It believed that there would be risks to public health and the environment posed by third parties having access to the networks. It believed this would compromise Scottish Water’s ability to manage the network safely. It suggested that the consequences could include contamination of the public water supply, interruption to the supply and damage to the public infrastructure, threatening public health. Similarly, on the waste water side, there could be pollution, including sewage flooding, interruption to the supply and again damage to the public infrastructure – threatening public health and the environment.

The Executive concluded that these risks to public health and the environment would outweigh any foreseeable benefits that might arise from competition in treatment services. It decided, therefore, in the interests

of safeguarding public health and the environment, that the regulatory framework should be revised to preclude the possibility of anyone other than Scottish Water using the public networks to carry out the physical supply of water or sewerage services.

Prohibiting retail competition for households

The Executive also set out its view that retail competition posed risks for households. It held that these risks arose from the nature, and impact on customers, of the current arrangements by which households pay for water and sewerage charges. In particular, it highlighted the link between charges and the Council Tax band of the property served and the discounts applied (for example to single adult households). The aim of this arrangement is to provide that charges broadly reflect ability to pay.

The Executive reasoned that there is no feasible means by which the range of discounts could be retained. Consequently, there is a serious risk that retail competition for households could mean new entrants to the market ‘cherry picking’ high-banded properties, leaving low-banded properties and those attracting discounts to be served by Scottish Water. This would reduce Scottish Water’s revenues, leaving it little option but to increase charges to those customers who remained with it.

It concluded that it would be unlikely that competition would develop in a manner that would benefit all customers. It decided that the regulatory framework should also preclude the possibility of there being retail competition in the household sector.

Licensing retail competition for non-household customers

The Executive proposed to introduce a licensing regime to ensure that the ‘non-household’ retail market would be opened to competition in an orderly way. Anyone wishing to provide retail water services or sewerage services would be required to apply for a licence. In order to ensure that there was a level playing field, the retail subsidiary established by Scottish Water would also have to apply for a licence.

In our response to the consultation, we broadly supported the Executive's proposals on the introduction of retail competition for non-household customers.

We were pleased to see that the Executive proposed that all service providers (including Scottish Water's retail subsidiary) would be licensed. We believe this is necessary to provide protection for customers, to create a level playing field for service providers and to reduce the likelihood of a challenge under the Act.

We considered that in the absence of a threshold that the market was sufficiently large to encourage new entrants into the market. New entrants may include companies that provide retail energy and telecommunications services, water and sewerage companies, and smaller specialised water and waste water services companies. We noted that we were aware of companies that have expressed an interest.

Most importantly, we were pleased to note the proposed structural changes to Scottish Water. This is likely to improve Scottish Water's understanding of its costs. We believe that this could improve the efficiency of both the retail and the wholesale businesses and would be to the benefit of all customers.

12.3.1 Provisions in the Water Services etc (Scotland) Bill

Following the consultation, The Water Services etc (Scotland) Bill³ was introduced before the Scottish Parliament in June 2004.

The key provisions in the Bill are as follows:

- Prohibitions on common carriage and on the provision of water and sewerage services to households by anyone other than Scottish Water – effectively ruling out the possibility of competition in these respects.
- A regime, to be introduced and administered by the Water Industry Commission, which will license 'providers' of retail water and sewerage services to

non-household (ie business or commercial) customers, effectively permitting competition in this respect, subject to the control and supervision of the Commission.

- A power for Ministers to require Scottish Water to establish a separate retail business – effectively establishing Scottish Water's retail business as a 'provider' that will be subject to the same licensing regime as all other 'providers' of water and sewerage services.

As a result of the planned creation of Scottish Water's retail subsidiary, Scottish Water will have two main roles. Firstly, it will sell water and sewerage services to retail entrants to the market on a wholesale basis. This will involve the treatment and delivery of water to the premises of the retailers' customers. It will also involve the removal, treatment and disposal of waste water. Secondly, it will continue to provide water and sewerage services to household customers.

Initially, Scottish Water's retail subsidiary will be the sole supplier for all non-household customers. It will buy water and sewerage services wholesale from Scottish Water.

12.3.2 Timetable for the provisions

Our proposed timetable for the introduction of licensing of retail competition is subject to the Water Services etc (Scotland) Bill being approved by the Scottish Parliament. Subject to that approval, and to Ministers requiring the creation of Scottish Water's retail subsidiary, we propose to license the retail subsidiary with effect from April 2006. Thereafter the key dates would be:

- November 2007 – potential entrants can apply for licences,
- April 2008 – retail competition starts.

From experience in other utilities⁴, the introduction of competition in the utility sector can be logistically complex. The drafting of appropriate licences and the

³ Scottish Parliamentary Bill 23.

⁴ See *Strategic Review of Charges 2002-06*, Section 3: Chapter 12, page 129.

development of computer facilities to maintain a central database of customers and their supplier will all require significant time and resources. It will therefore be important to ensure that this Office has sufficient resources to meet the proposed timetable.

12.4 Implications of the provisions for the Strategic Review of Charges 2006-10

One of the key challenges for the *Strategic Review of Charges 2006-10* will be to set a reasonable wholesale and retail price. This Review will set retail tariffs not only for household customers, but also for the 'non-household' sector. In effect this will require us to decide the appropriate cost and profit of a retailer (ie the difference between retail prices and wholesale prices). This is likely to continue into the next regulatory period.

When retail competition was introduced into the energy market, regulators continued to set a limit for retail prices for a period after the introduction of competition. Regulation of retail prices until competition is properly established is important as it will help to ensure that there is an orderly, sustainable market.

12.4.1 Charge limits versus revenue caps

The commissioning letter for the *Strategic Review of Charges 2006-10*⁵ asks us to set 'charges limits' rather than 'revenue caps'. This is a welcome development from the *Strategic Review of Charges 2002-06*. A revenue cap allows the balance of revenue between customer groups to be altered and also for tariffs to be increased to reflect the loss of part or all of a customer's business. Scottish Water should seek to reduce costs to counter any fall in revenue. However, under a revenue cap Scottish Water could seek to increase tariffs to non-competitive customers to maintain its revenue. This would clearly not be in the customer interest.

A charge limit can prevent such rebalancing. It limits the increase in a particular tariff rather than the increase in revenue (all of the prices multiplied by all of the services provided).

12.4.2 Transparency and cost allocation

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

We have outlined a very detailed work plan for the *Strategic Review of Charges 2006-10*⁶. Our work plan takes full account of the need to set the wholesale price and explain our reasons in some detail. We are also seeking to involve stakeholders so that all interested parties can understand how we set the wholesale price.

This is important for the following reasons:

- New entrants will need reassurance that Scottish Water is not able to subsidise or offer favourable terms to its new retail entity in order to retain customers. Without this reassurance, new retailers will be discouraged from entering the market or may challenge the incumbent under competition law.
- If the wholesale price is not properly set, there will be an unintended cross-subsidy either to or from non-household customers in the new competitive market – at the expense, or to the benefit, of Scottish Water's household customers.

The factors that we will take into account in setting the wholesale price will be described in detail in the third of our publications describing our work in completing the *Strategic Review of Charges 2006-10*, which is due to be published in September 2004. However, they are likely to include:

- the allocation of costs within Scottish Water:
 - between the core and non-core elements of Scottish Water (see Chapter 11);
 - between Scottish Water and its new retail entity;
- a review of transfer prices.

⁵ Letter from the Minister for Environment and Rural Development, Ross Finnie, MSP, dated 26 May 2004 to Alan Sutherland, Water Industry Commissioner for Scotland.

⁶ *Our work in regulating the Scottish water industry: setting out a clear framework for the Strategic Review of Charges 2006-10*, July 2004.

12.4.3 Licensing

Significant preparatory work and consultation with stakeholders will also be required if the Commission is to be able to issue a licence to Scottish Water's retail subsidiary. We are proposing a two-stage consultation process. The first consultation, which will cover the principles to be included in licences, will run from April to July 2005. There will then be a second consultation, covering the draft licence conditions for Scottish Water's retail subsidiary, which will run from October 2005 to January 2006.

Our early thinking about the licensing regime would suggest that the licence will need to:

- define the service to be provided;
- set out expectations for behaviour by market participants;
- govern participation in the market;
- govern relationships between:
 - wholesaler and retailer,
 - retailer and customer,
 - regulator and retailer (particularly the provision of information to the regulator);
- allow for regulatory intervention;
- provide a vehicle for enforcement, sanction or ultimately removal of the licence and expulsion from the market.

We also recognise that water and waste water services are very important for most non-household customers. They will wish to be reassured that retailers are fit and proper to provide the services. We are therefore beginning to consider the scope of our consultation on the process for issuing a licence. Some of the criteria we suggest are likely to include the following:

- Financial – do they have the financial resources to enter the market and compete sustainably?
- Managerial – do they have retail/utility experience?
- Technical – do they have access to the tools for the job?

12.5 Conclusions

The proposals announced by the Scottish Executive for the introduction of retail competition could be an important step in improving the regulatory framework of the water industry in Scotland. Clear separation of the costs of the retail activities is likely to help improve the efficiency of the industry. This will benefit all customers.

Section 2: Chapter 13

Trade effluent charging

13.1 Introduction

In Chapter 11 we explained that the Water Industry (Scotland) Act 2002 changed our remit to promoting the interests of customers of the core business. In the *Strategic Review of Charges 2002-06*, we advised Scottish Ministers on the revenue caps that should apply to the industry in Scotland. These revenue caps included core and non-core activities. Scottish Water prepares a scheme of charges consistent with the advice that has been approved by Scottish Ministers. This Office will approve the proposed tariffs, provided that they are consistent with the advice.

Trade effluent is a special case. To date, tariffs for trade effluent have not been included in a scheme of charges and we have not played any role in regulating them. Instead, Scottish Water, exercising powers under section 29(3)(j) of the Sewerage (Scotland) Act 1968, has set these charges. In practice this has meant that the total amount raised from customers in trade effluent charges has been limited to the difference between the agreed revenue cap and the amount raised from the tariffs approved in the scheme of charges.

The provisions of the Water Services etc (Scotland) Bill 2004 provide for the Water Industry Commission to determine charges for all of Scottish Water's core services. As trade effluent is a core activity of Scottish Water, trade effluent charges are within these provisions. Consistent with that approach, the Bill provides for the repeal of section 29(3)(j) of the Sewerage (Scotland) Act 1968, thereby removing Scottish Water's power to set trade effluent charges separately.

Against that background and in light of the Ministers' requirement that we manage the Strategic Review of Charges in anticipation of the Bill becoming law, the Review will set charge limits for the reception and treatment of trade effluent.

In 2004-05, Scottish Water expects trade effluent revenue to be almost £30 million. This is illustrated in Table 13.1.

Table 13.1: Trade effluent revenue by size of customer¹

Total trade effluent charges paid by customer	Number of customers	Total trade effluent revenue
>= £250,000	22	£11.7m
< £250,000	103	£9.3m
< £50,000	281	£5.1m
< £10,000	889	£2.4m
< £1,000	1,210	£0.2m
Total	2,505	£28.7m

Trade effluent charges are an important source of income. We will need to understand how they are composed so as to ensure that future charges are set in a manner that is consistent with the statement on the principles of charging that Ministers will set for the period 2006-10 and which determine the approach that we will take in setting charge limits and approving annual charges schemes.

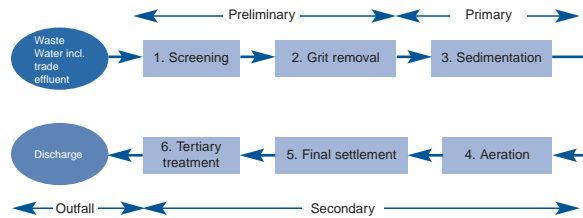
The Water Services etc (Scotland) Bill 2004 requires the Ministers' statement on charges to be based on all charges being harmonised across Scotland. Further, the Executive's consultation paper *Paying for water services* proposes, subject to any particular requirements of Ministers, that harmonised charges for a particular group should be set to recover as closely as possible the fixed and variable costs of serving that group. We agree with these aims, but recognise that it will be difficult first to understand existing cross subsidies and second to adjust charges to trade effluent customers so that they reflect Scottish Water's costs.

In this chapter we discuss what trade effluent is, how it is regulated now in England and Wales, and the reasons why regulating trade effluent charges would be in customers' interests. We also describe how Scottish Water calculates charges for trade effluent customers.

13.2 What is trade effluent?

Waste water is collected in the public sewer network and conveyed to treatment plants. Figure 13.1 shows the various stages of waste water treatment before the water is discharged to the environment.

¹ Scottish water response to WIC22: period to 31 March 2004.

Figure 13.1: Waste water treatment processes

There are three types of waste water: surface water draining to sewers, foul sewage and trade effluent.

Surface water refers to the rainwater that drains from roofs, yards, pavements, roads and so on.

Foul sewage refers to waste water (either domestic or non-domestic customers) from toilets and washing facilities (sinks, wash basins, showers, baths, etc).

Trade effluent is liquid waste from industrial or other commercial activity. It covers a wide variety of liquid waste, including:

- waste chemicals, including oils;
- liquid process wastes;
- detergents;
- condensate water from compressed air installations;
- cooling water;
- biodegradable liquids;
- wash water;
- liquid wastes or wash waters, other than domestic sewage, discharged using sinks, basins or toilets; and
- contaminated mine or quarry water.

Trade effluent is more difficult to treat and can represent a hazard. Businesses must have the consent of the

sewage company before discharging trade effluent into public sewers. This is important because an unauthorised discharge could affect the operation of the sewerage system and threaten the environment and public health. The authorisation to discharge is called a consent.

Sewerage companies set consents at levels appropriate to:

- protect the sewerage system, treatment works and the personnel involved in their operation;
- prevent the generation of explosive, flammable and poisonous gases in the sewerage system;
- prevent sewer blockage;
- prevent hydraulic overloading of the sewerage system;
- ensure that mixed sewage (surface water, foul sewage and trade effluent) can be treated effectively and economically at the receiving sewage works; and
- ensure that the products of wastewater treatment in the form of effluent and sludge have no detrimental effect on the environment².

Scottish Water is responsible for managing discharges to sewer by customers. It has a legal duty to identify and manage trade effluent customers. Scottish Water will usually review a consent only once every two years unless the customer writes requesting a review. However, Scottish Water will monitor discharges regularly to check that the consent is appropriate and that the discharges are compliant with the consent.

13.3 Current regulation of trade effluent

The responsibility of Scottish Water for trade effluent is defined under the Sewerage (Scotland) Act 1968 and amendments. In England and Wales, the responsibility of the sewerage companies for trade effluent is defined in the Water Industry Act 1991 (as amended).

² <http://www.envirowise.gov.uk/envirowisev3.nsf/textkey/MBEN4PBHR3>

As we explained above, charges for trade effluent in Scotland are currently not regulated. They are limited only to the extent that the revenue cap fixes a ceiling on total revenue and the scheme of charges for regulated tariffs raises an amount lower than the revenue cap. This means that Scottish Water could raise trade effluent charges to compensate for any fall in revenue from other non-core activities not included in the scheme of charges, but included in the original revenue cap. Under the Water Industry (Scotland) Act 2002, we do not have powers to approve charges relating to the collection, treatment and disposal of trade effluent. If a customer disagrees with Scottish Water on issues related to trade effluent, they can appeal to Scottish Ministers or to the Office of Fair Trading.

The provisions in the Water Services etc (Scotland) Bill giving us the power to approve trade effluent charges brings the situation in Scotland broadly into line with that in England and Wales.

In England and Wales, trade effluent customers can appeal to Ofwat. However, the appeals procedure:

- does not cover disputed charges within the sewerage companies' published charges schemes, but does cover disputes about the conditions imposed and charges which fall outside the charges scheme; and
- does not cover appeals against any conditions governing reception, treatment or disposal of 'special category effluent'.

We understand that most disagreements arise over the practical implications of the consent conditions imposed, the timescale in which such conditions must be met, or the costs which meeting the conditions imposes on the customer. In the event of an appeal Ofwat will seek representations from both sides. In most cases the disagreement is resolved by discussion, although Ofwat can issue a decision.

In Scotland we would seek to consult with trade effluent customers, appropriate representative bodies and Scottish Water about the appropriate way to regulate

trade effluent charges as part of the determination of charges that we will be required to make.

13.4 Paying for trade effluent

Historically, trade effluent charges in the UK were based on the volume of the discharge. In 1976, the National Water Council and the Confederation of British Industry (CBI) agreed the Mogden formula as a basis for trade effluent charges. This formula sought to increase the cost reflectivity of the charges that were made for the treatment of trade effluent. The formula sets a higher charge for more concentrated effluent that will require a higher level of treatment.

In simple terms, the Mogden formula has four variables:

R (Reception) – this part of the formula is designed to cover the cost of the waste water system. The charge is in direct proportion to the volume of the discharge.

V (Volumetric costs) – this part of the formula covers costs for preliminary and primary treatment. It takes account of the amount of suspended solids in the discharge.

S (Solids costs) – this part of the formula covers costs for treating the sludge resulting from primary treatment. It takes account of suspended solids in the discharge.

B (Biological costs) – this part of the formula covers costs for secondary treatment. It takes account of the organic load in the discharge.

The basic Mogden formula is: $\text{Charge} = R + V + \alpha S + \beta B$. It is widely used both in Britain and internationally.

The price of trade effluent will therefore vary depending on the type of discharge. It will also vary depending on the sewerage company's prices for each of the four elements of trade effluent collection and treatment.

Different sewerage companies may want to alter their pricing of individual elements of the formula to reflect the costs of the service they provide.

Scottish Water's trade effluent customers currently pay a standing charge and a volume charge. This is different from the purely volume driven approach used by most companies south of the border.

Scottish Water levies a fixed charge based on the size of the customer's water meter. This charge is designed to reflect the costs incurred by reserving capacity in the sewerage system for the customer. The customer will also pay a volumetric charge that will depend on the volume and strength of their discharge to the sewerage system.

Scottish Water uses two derivatives of the basic Mogden formula to assess the standing charge and the volumetric charge.

To assess the volumetric charge, Scottish Water uses the following formula:

$$Co = [Ro + Vo + Bo \times (Ot/Os) + So \times (St/Ss)] \times AVD$$

Where:

Ro = Reception charge (pence per cubic metre)

Vo = Volumetric charge (pence per cubic metre)

Bo = Biological/secondary treatment charge (pence per cubic metre)

So = Sludge/solid treatment charge (pence per cubic metre)

Scottish average sewage system

Os = average settled chemical oxygen demand (COD) for the Scottish sewerage system

Ss = average total suspended solids for the Scottish sewerage system

AVD = Actual volume discharged

Ot = fixed strength of trade effluent discharged

St = fixed strength of trade effluent discharged

The formula assesses the volumetric charge based on the actual volume and strength of the trade effluent discharged. Ro, Vo, Bo and So are all charge factors (pence per cubic metre) set by Scottish Water. The factor Ot/Os reflects the relative COD or biological treatment needed by the trade effluent in comparison to

the system average. The factor St/Ss reflects the discharged trade effluent's required treatment of solids relative to the system average.

Scottish Water assesses the standing charge using the following derivative of the Mogden formula:

$$Ca = [CDV \times (Ra+Va) + (Ba \times sBODI) + (Sa \times TSSI)] \times 365$$

Where:

Ra = Reception charge (pence per cubic metre per day)

Va = Volumetric/primary charge (pence per cubic metre per day)

Ba = Biological/secondary capacity charge (pence per kilogram of load per day)

Sa = Sludge/solid capacity charge (pence per kilogram of load per day)

CDV = Consented daily volume according to the trade effluent consent

sBODI = Settled biochemical oxygen demand load according to the trade effluent consent

TSSI = Total suspended solids load according to the trade effluent consent

This formula assess a standing charge that reflects the customer's agreed access to the sewerage network and treatment process.

Most of the sewerage companies south of the border apply a derivative of the Mogden formula where the charge is primarily a function of the volume and strength of the discharge.

$$Charge = \{R + [(V + BV) \text{ or } M] + B \times Ot/Os + S \times St/Ss\} \times AVD$$

Where:

R, V, B, S, Ot, Os, St, Ss are the same as defined in the formula to assess the volumetric charge in Scotland (except, of course, that Os and Ss refer to the system average of companies in England and Wales).

In different sewerage company areas, there are variations to the general formula to reflect local circumstances. These include:

BV = Additional volume charge if there is no biological treatment

M = treatment and disposal where effluent goes to a sea outfall³

Some companies include a standing charge 'R' that favours large-volume trade effluent customers. All of the companies appear to impose a minimum charge varying from between £79 and £257.25 a year.

Our initial review of the charging structures south of the border suggests that only United Utilities will base charges on the costs of reserving capacity. In the United Utilities area, the customer can choose either a volumetric or reserved capacity-based method of charging. As with Scottish Water, the reserved capacity method includes both a standing charge and a volumetric element.

We can see merit in making a proportion of the charge paid by the customer depend on the capacity de facto reserved in the sewerage system by the agreed consent. This should allow Scottish Water to manage its assets more effectively. It would also seem appropriate that the larger irregular user of the sewerage system should meet the opportunity costs incurred by Scottish Water in not being able to connect other properties to the sewerage network because of previously agreed consents.

We intend to look at the costs associated with trade effluent in more detail to understand whether the formulae used by Scottish Water are appropriate and, if so, whether the balance between the tariffs for each element of the formulae is broadly cost reflective.

13.5 Competition for trade effluent customers

Unlike other water and sewerage services, trade effluent treatment is not a monopoly business. Competition can arise in two forms: on-site treatment (where a company treats its effluent before discharge and consequently lowers its bill by discharging a lower strength effluent), or by allowing a third party to collect and dispose of its

effluent. The economies of scale and scope that are enjoyed by a sewerage undertaker are likely to tend to limit both forms of competition.

Subject to the requirements placed on us in the Ministers' statement on charges, we expect, in regulating trade effluent charges, that we will want to be sure that there is a fair allocation of costs to trade effluent and that the price is broadly reflective of these costs. We would want to be sure that higher costs were not allocated to foul sewerage or to surface drainage in order to reduce the price of trade effluent. This would further limit the opportunities for competition for trade effluent and would not be in the general customer interest.

13.6 The balance between charges for trade effluent and other sewerage services

We intend to complete a range of analyses in order to assess whether there is an appropriate allocation of costs to the various waste water activities.

The first option that we will use is to compare the price of trade effluent with the price for domestic foul sewage. We would expect that for a given volume of effluent, the only difference in price should relate to strength; likewise, for a given strength of effluent the only difference in the charge should relate to volume.

A second approach will be to compare the balance between sewerage, surface drainage and trade effluent charges in different companies. We will do this by reference to a number of standardised customers. This will allow us to compare the bill that these standardised customers would face in different parts of Great Britain. A comparison of this with relative bills for other services could be informative.

We will also look at the customer base of different companies to understand whether there are factors relating to the mix of customers that impact either on the costs of the sewerage system as a whole or on the costs of treating effluent in particular.

³ Ofwat Tariff structure and charges 2004-05 report

There may be other analyses that we should consider, and would welcome any suggestions from stakeholders on this issue.

13.7 Impact of changes on customers

We are aware that Scottish Water currently offers two different caps on year-to-year changes in trade effluent charges:

- A harmonisation cap – where quality and quantity parameters remain the same, the year on year increase is limited to 15%. This has been used to offset the effects of harmonisation on some customers; and
- A treatment cap – customers in locations where treatment is being upgraded or provided for the first time will be subject to a 100% cap. That is, charges can at most double because of new treatment.

We will seek to understand the rationale for these caps and the impact that these caps are having both on other trade effluent customers and on the customer base as a whole. Again, subject to the requirements placed on us in the Ministers' statement on charges, we do not expect that it would be considered appropriate for domestic and non-domestic customers to pay more for foul sewage or for surface drainage as a result of these caps.

However, as *Paying for water services* explains, there may be a case for phasing changes in tariffs. We will make any changes in accordance with Ministers' requirements in this respect.

If any changes in trade effluent charges are to be phased, decisions would need to be made about who should meet the cost of this phasing (i.e. other trade effluent customers or customers as a whole). We would welcome views on this issue.

Section 2: Chapter 14

Business plans and the Strategic Review of Charges 2006-10

14.1 Introduction

This chapter explains the background to business planning in the Scottish water industry and describes the rationale, process and framework for business planning that we are putting in place.

Customers and other stakeholders are entitled to expect Scottish Water to have well-developed, sound and clear plans for the business going forward. We require a clear business plan to inform our Strategic Review of Charges.

The chapter begins by explaining what a business plan is and its aims. We outline the lessons to be learned from our request for business plans from the three authorities to inform the last Review. We then describe the role of business plans in the water industry in England and Wales and explain how we have drawn on experience south of the border to introduce a robust business planning format for Scottish Water.

We set out the timetable for the business planning process and a brief summary of the information that we expect Scottish Water to provide. We then describe the process we intend to follow to ensure that we have fully and correctly understood Scottish Water's business plan. Finally we outline how we intend to use the business plans.

14.2 The role of a business plan

A business plan is a company or organisation's statement of its strategy for the future. It should present clearly its forecast of revenue and costs. These forecasts should take account of the company's view on its customer base and the appropriate price of its services. It should provide clear evidence on costs. The business plan should also examine the challenges facing the company and assess the risks. The plan should set objectives and outputs. The company should also suggest how it intends to finance its investment.

A good business plan should reflect the circumstances of the business. The water industry is a long-term business. It has to look well into the future in order to

ensure that this essential service will be available for future generations and at an affordable cost. It needs to plan to deal with long-term demographic, social, economic and other trends. Its assets – pipes, sewers, treatment work buildings, reservoirs, etc are long-term assets.

14.3 Scottish Water's business plan

In order to inform our analysis of revenue caps we have asked Scottish Water to provide us with a business plan. We hope that this plan will take a long-term view and will address all of the challenges the organisation faces. The business plan is Scottish Water's opportunity to set out its strategy.

The business plan is an important opportunity for Scottish Water to influence the outcome of the Strategic Review of Charges. The business plan has the following aims:

- To communicate Scottish Water's long-term strategic plans.
- To help us to calculate charge limits for 2006-10.
- To help us to set charge limits that will allow Scottish Water to carry out its core functions at the lowest reasonable cost to customers and whereby efficiencies and savings are passed to customers.
- To reassure us that there is effective stewardship of the assets.
- To reassure us that Scottish Water can maintain service to customers.
- To allow us to fund the agreed requirements of the Scottish Environment Protection Agency and the Drinking Water Quality Regulator.
- To allow us to fund any other requirements stipulated by Ministers.

The business plan is necessary to provide transparency. It also plays an important role in increasing the

transparency of the Strategic Review of Charges. To this end we will require Scottish Water to publish its business plan. Stakeholders will be able to see what Scottish Water plans to do and what this might mean for bills. We would encourage stakeholders to comment on these proposals.

14.4 Background

The three former water authorities were required to produce annual corporate plans for the Scottish Office and later for the Scottish Executive. These plans had, to a limited extent, some of the features of a business plan, but were a good deal less comprehensive in scope. Since they were produced each year, they mainly concentrated on short-term objectives.

Until the introduction of the Quality and Standards process there was no coordinated approach to the assessment of the industry's investment needs. As a result, investment decisions were arrived at on a relatively ad hoc basis. The corporate plans included little detailed information about investment plans, and certainly not enough to have allowed any effective monitoring of value for money.

14.5 The Strategic Review of Charges 2002-06

When this Office was established at the end of 1999, it was clear that we would need to establish a clear framework for regulation. An important element of this framework was an annual regulatory return from the then three authorities. This Annual Return was to be consistent with Ofwat's June Return. We tendered an information project to assist us with the development of this framework. The information project deliverables were as follows:

- An Annual Return of data for regulatory purposes: this included cost allocations, performance measures, and customer information.
- 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 strategic business plan: this was to inform us about how the authorities saw their environment. Our intention was that this should be analysed across five parameters: customers, competitors, costs, competencies and compliance.

The purpose of the strategic business plan was for each authority to set out the external influences on the business, the strategic policies being adopted and their impact on the authority. The strategic business plan for the *Strategic Review of Charges 2002-06* had two main sections:

1. The authority's view of its operating environment and a statement of the authority's strategy including:

- the macro-economic view of the region and the impact of changes in the economic factors on the customer base, the water and waste water services and other services provided;
- the impact of anticipated new legislation and options for change in the commercial structure of the water industry in Scotland;
- the impact of competition, the likely new entrants and their impact on the customer base;
- the scope and quality of the authorities' services
- customers' needs and the scope to extend services to customers.

2. A series of tables setting out a forecast of key indicators for the business including:

- population;
- volumetric projections of water delivered and waste water collected;

- financial summary of all costs, revenue and other sources of funds;
- financial assumptions such as inflation and interest rates;
- investment summary for water, waste water, support services and the Private Finance Initiative;
- income projections for water, waste water and other activities;
- proposed expenditure on the various drivers for the quality programme such as the Drinking Water Directive and the Bathing Water Directive;
- income and expenditure account projections;
- balance sheet projections.

The authorities were asked to provide this forecast information for the period up to 2010.

Unfortunately, the three authorities were unable to produce robust strategic business plans that could inform the *Strategic Review of Charges 2002-06*. There were particular problems in their ability to forecast changes to the customer base and the likely impact on their revenue.

It was also clear that their investment plans were inconsistent and needed to be more detailed.

The experience of having requested the authorities to provide strategic business plans for the *Strategic Review of Charges 2002-06* has influenced our approach to this Review:

- We have issued much more specific guidance to Scottish Water on what we expect from the business plan.
- We have provided detailed definitions for the forecast data that we want Scottish Water to provide.

- We have also tried to make the business plan relate more closely to the Annual Return where possible.

This last point is important because Scottish Water now has several years experience of providing us with Annual Return information. The authorities had no such experience before the *Strategic Review of Charges 2002-06*. Scottish Water also now has systems in place to collect and verify this information. The Reporter will check that Scottish Water is reporting consistent, robust information in its business plan.

We have also sought to require Scottish Water to define reasonable outputs of its planned investment programme. These outputs will help us to judge whether the proposals in the business plan will deliver value for money.

14.6 Role of business plans in England and Wales

Ofwat sets prices every five years. Water and sewerage companies submit a draft and second draft version of their business plan to Ofwat to inform Ofwat's price setting process. Ofwat defines the business plan as being the company's view of the price limits it needs and the reasons for them.

This view of the role of a business plan is useful, in that it requires companies to say what they believe prices to customers should be, and to set out the detailed components that lead to that assessment. This provides Ofwat with the transparency it needs in order to understand the issues and arguments made by companies. It also means that where Ofwat's view differs from a company's, it can calculate the projected impact of that difference of view on prices to customers.

These detailed business plans ensure that Ofwat and the companies are better able to focus any debate about the business plan on those items that are material to prices for customers.

In England and Wales, companies publish a summary version of their business plans. This introduces a degree of accountability to all stakeholders.

14.7 Introducing a business plan in Scotland

We have introduced a similar business plan requirement in Scotland. The *Strategic Review of Charges 2006-10* will therefore benefit from a similar level of transparency. We have adapted our requirements to the Scottish context. To do this, we have used external expertise from Scottish Water's Reporter team to help set out the requirements.

We are confident that the framework we are putting in place will provide us, the Scottish Executive and other stakeholders with a robust insight into Scottish Water's plans for the next several years.

14.8 The business plan process

Scottish Water will be required to submit a first draft business plan and a second draft business plan to us and to the Scottish Executive. The process for each of these submissions is essentially the same. The first draft business plan will enable us to do much of the preparatory work for the *Strategic Review of Charges 2006-10*. The second draft business plan will allow us to draw our conclusions on prices for the draft advice/determination of charges.

Opposite we set out a timetable showing the key dates relating to the business plan process. This timetable has been agreed between all stakeholders:

Date	Event
First draft business plan	
25/06/2004	WICS issue guidance on first draft business plan
05/07/2004	Scottish Water's initial issues to WICS
08/07/2004	Workshop on guidance
16/07/2004	Scottish Water's final issues to WICS
21/07/2004	Guidance to Reporter issued by WICS
28/07/2004	WICS' clarification of Scottish Water issues
01/09/2004	Draft investment plan to Reporter for audit
29/10/2004	Scottish Water submits first draft Business Plan to WICS
15/11/2004	Workshop on clarification of issues
23/11/2004	Scottish Water Board presentation on key strategic issues
03/12/2004	WICS' response to first draft business plan
Second draft Business Plan	
08/12/2004	Publication of guidance for second draft business plan
14/12/2004	Scottish Water's initial issues on guidance to WICS
17/12/2004	Workshop on second draft business plan guidance
17/12/2004	Guidance to Reporter issued by WICS
23/12/2004 10/01/2005	Scottish Water's final issues on guidance to WICS WICS final clarification/response to Scottish Water's Issues
31/01/2005	Final guidance from Ministers
20/04/2005	Scottish Water submits second draft business plan to WICS
04/05/2005	Workshop on detail of second draft business plan
12/05/2005	Scottish Water Board presentation on key strategic issues
16/05/2005	Publication of high-level summary of Scottish Water's business plan
30/05/2005	WICS' response to business plan and implications for customers

14.9 Business plan reporting requirements

The reporting requirements are split into three main components.

- Tables – into which Scottish Water must supply pre-defined information.
- Definitions – these relate to each row or information parameter within the business plan tables and specify what Scottish Water must provide.
- Guidance – which relates to the general principles to be followed when compiling the business plan submission. The guidance also indicates the information that Scottish Water must supply as part of its commentaries and supporting information, which accompany each section of the business plan.

14.9.1 Reporting requirement sections

The business plan is divided into three parts. These three parts are each important in informing our work on the Strategic Review of Charges. The three parts are:

Part A:	Overview
Part B:	Detailed supporting information
B1:	The business environment and the longer term
B2:	Improving efficiency
B3:	Maintaining service and serviceability
B4:	Quality enhancements
B5:	Supply/demand
B6:	Service delivery
B7:	Financial (including financial model inputs)
B8:	Populations and properties

Investment plan

A brief summary of each section is given below:

Part A: Overview

The overview provides a summary of the information contained in the business plan. As part of this summary, Scottish Water should put its strategic decisions for the forthcoming period. This should include supporting evidence and, critically, the key assumptions that underpin the strategy. Scottish Water should also explain how it intends to achieve these objectives.

Scottish Water may present this overview and supporting information in a format that it believes best demonstrates its objectives for the forthcoming period. The text should concentrate on:

- the outputs selected for Scottish Water's preferred strategy;
- an explanation of how Scottish Water will meet those outputs;
- the resources required to deliver the outputs allowing for improvements in efficiency; and
- the charges that Scottish Water considers its customers should pay.

Scottish Water should also explain how and why it believes its strategy reflects its customers' views on services and prices. This should be balanced with the views and requirements of other stakeholders in the industry such as the quality regulators and Scottish Ministers.

B1: The business environment and the longer term

Scottish Water should provide a detailed view of its future operating environment.

We expect this part of the submission to be divided into four sections. This structure provides a framework for Scottish Water to explain its assessment of the post 2006 environment in its own way.

The post 2006 environment:

- Section 1 - Achievements to date compared with earlier plans
- Section 2 - Assessment of the post 2006 environment for Scottish Water
- Section 3 - Managing the key risks and uncertainties
- Section 4- Achieving the right balance for customers

We do not require any additional information to support Scottish Water's explanations. However, Scottish Water may choose to provide references to information provided elsewhere in the plan.

B2: Improving efficiency

In developing its draft and second draft business plans, Scottish Water should decide on the scope for it to improve its efficiency by 2010. Scottish Water should provide detailed information about any factors that may adversely impact on its efficiency improvement.

As part of the business plan submission, Scottish Water should:

- set out its views on the scope for improvements in efficiency and the evidence on which they are based;

- explain how they lead to its assumptions about cost reductions from current levels that it has included in its strategy; and
- describe how the assumed improvements have been incorporated in the business plan expenditure projections.

Within its business plan, Scottish Water should state the effects of this efficiency on costs relating to all areas of the business and, importantly, how the efficiency savings can be passed on to customers.

B3: Maintaining service and serviceability to customers

This section of the business plan relates to how Scottish Water intends to maintain current levels of service to its customers and the environment by maintaining the serviceability of its assets (that is, the ability of the assets to continue to perform as they should).

The way in which Scottish Water determines what its capital maintenance requirement must be to deliver these levels of service should follow best or good practice established elsewhere. As part of the business plan, Scottish Water should provide examples of the methods it has used to establish the correct level of future capital maintenance.

A key component of Section B3 is that Scottish Water should state what impact the new or enhanced assets, needed to satisfy new quality obligations of *Quality & Standards III*, will have on the future capital maintenance requirement of the business. We would expect that all proposals should be the most cost-effective available and should offer the best value for money for customers. We will ask the Reporter to scrutinise a sample of the proposed solutions to ensure that Scottish Water's plans are cost-effective.

If the capital maintenance requirement for the period is materially different from that currently being undertaken, Scottish Water should also supply documentary evidence to support the change.

B4: Quality enhancements

We have asked Scottish Water to set out in Section B4 a detailed overview of its proposed quality enhancement programmes for the water and sewerage services. We expect detailed scheme-specific information to be provided in the accompanying draft investment programme submission. This must reconcile with the commentaries in this section and to the output of *Quality & Standards III* work packages.

Scottish Water must demonstrate that the impact of any new quality requirements as a whole has been considered, and that the chosen programme is the most appropriate whole-life solution for dealing with all of the quality obligations. The explanations should be at a strategic level in Section B4. Scottish Water should provide detail of the schemes in the accompanying draft investment plan.

Scottish Water should provide detail in the commentary explaining how it arrived at its proposed programme and how the requirements of *Quality & Standards III* work packages have been translated into schemes with discreet drivers and outputs.

B5: Supply/demand issues

The purpose of this section of the business plan is to provide information on the likely expenditure needed to maintain a balance between supply and demand in both the water and sewerage services.

There are two main reasons to seek additional expenditure for balancing supply and demand:

- To meet or manage growth in demand from customers (either existing or new).
- To restore the security of supply to customers in the light of improved information, for example, a downward revision in yields or contingencies related to possible climate change.

In Section B5, Scottish Water must provide details of the resource planning tools that have supported its analysis

of supply and demand issues. These may include area resource plans, district meter area studies and drainage area studies. An important aspect of the supply/demand balance is an appraisal of leakage within the network. Scottish Water is therefore asked to provide details of its strategy to manage leakage to an economic and sustainable level.

It is critical to ensure that Scottish Water is using a suitably long-time horizon when analysing supply/demand issues. Good practice is for such analysis to be undertaken on a minimum ten- to fifteen-year horizon to ensure security of supply for future customers. The Reporter will be asked to pay particular attention to this, to ensure that Scottish Water is taking a suitable approach to managing its resources.

The business plan requires Scottish Water to identify both the capital and operational expenditure needed to fulfil the supply/demand need of the period. It is important that Scottish Water proportionally allocates costs correctly. Again, we will ask the Reporter to scrutinise the allocation of costs.

B6: Customer service strategy and service enhancements

This section of the business plan is Scottish Water's opportunity to state what it wants to deliver in terms of its levels of service to customers. This service should be split into two main categories:

- customer based – including such things as telephone response times and complaints procedures; and
- asset based – including such things as sewer flooding to properties and water pressure issues.

Scottish Water should use this part of the business plan to set out its strategy for delivering services to customers over the forthcoming period. It should indicate any improvements that it envisages providing for customers compared with the position it should achieve by March 2006. Such service improvements may be the result of investment in the quality programme or capital maintenance.

If Scottish Water seeks additional resources to improve levels of service from the *Strategic Review of Charges 2006-10*, it should provide a detailed summary of the outputs that will be delivered and their costs. Scottish Water should also demonstrate that this improvement is justified and that its customers are willing to pay. Scottish Water may also indicate any additional improvements it plans to fund if efficiencies beyond those assumed are achieved.

B7: Financial projections and financial model input sheets

In the first part of Section B7 Scottish Water should outline how it intends to finance the strategy set out in the business plan. It also requires Scottish Water to forecast strategic financial information and indicators for the forthcoming Review period.

It is particularly important that Scottish Water details all of the important assumptions that underpin its financing plan. In particular, we would expect to see forecasts relating to:

- the cost of debt,
- age of debt profiles,
- returns on capital,
- projected capital value,
- critical financial indicators.

Scottish Water should also explain how changes would impact on customers. In the second part of Section B7 we ask Scottish Water to provide the information required to establish the starting point for the financial model (a detailed description of the financial model will be published in a forthcoming volume of our methodology). It is critical therefore that all of the information that is submitted in these tables should reconcile and be consistent with the strategy and data contained in all other sections of the business plan.

B8: Properties and populations

In Section B8 of the business plan we ask Scottish Water to forecast what it believes its customer base will be over the forthcoming period. We are particularly interested in the assumptions that underpin these forecasts. Again, we will ask the Reporter to scrutinise these assumptions in detail. We would expect to see significant changes in the size and make-up of its customer base explained in some detail.

Information in this section breaks down the customer base into discreet sections. Examples of the type of splits that are made would include:

- domestic customers:
 - metered,
 - unmetered;
- non-domestic customers:
 - metered
 - unmetered
 - large users
 - those on 'special agreements'.

We also request information on Scottish Water's metering policies. We would expect Scottish Water to tell us about its overall metering strategy. Where appropriate, we would expect to see references to the detailed information supplied in the supply/demand balance tables of the business plan.

Investment plan

Scottish Water is required to submit information to support its planned investment programme. We collect this information in a spreadsheet format. The investment plan should be submitted with as much detail as possible. It should include drivers (what is driving the investment, for example a European Directive), outputs (what is being delivered by the investment) and the costs of each individual scheme wherever possible. We understand that Scottish Water will not have all of the necessary information for the first draft plan. Scottish Water should therefore provide as much detail as it has available.

The investment plan should take into account the ministerial guidance. This will outline the Minister's response to the consultation.

The investment plan is a major factor in the prices that customers will face. We will therefore use the Reporter quite extensively to ensure that the programme is properly defined and costed, is consistent with the ministerial guidance and contains no areas of overlap.

Once the Reporter completes his scrutiny of the investment programme, we will begin our work to assess the scope for capital efficiency.

14.9.2 Clarification of reporting requirements

It is expected that Scottish Water will raise issues concerning the reporting requirements of the business plan. Initially these issues will concern some of the underlying principles of the business plan. We welcome such challenges. Examples may relate to the timing of the submissions, degree of detail required at various stages, and the form in which information must be submitted.

We have agreed a process by which these issues can be discussed openly with Scottish Water. This is incorporated into the timetable shown earlier in this chapter.

Due to possible external challenge of the Strategic Review process, it is important that all issues are raised openly and resolved in a similar manner. This will ensure that there is a proper audit trail. This audit trail must withstand any external scrutiny that may be applied in the future.

14.9.3 The role of the Reporter

As we have indicated above, the Reporter and his team will play a significant role in the business plan process. It is his role to review, audit and verify the information submitted as part of the business plan. This follows regulatory precedent established in the industry in England and Wales, where the Reporter has proved invaluable in establishing a robust business plan process.

Once the reporting requirements have been established and provided to Scottish Water, we issue guidance to the Reporter. This gives details of the areas upon which we require him to concentrate his review of the information contained in Scottish Water's business plan. The guidance covers both the detailed audit of specific costs and information and the review of the soundness of Scottish Water's proposed strategy. After detailed discussion between the Reporter and us, a comprehensive audit plan will then be written by the Reporter, stating how he will undertake his duties and the specific areas that will be scrutinised. This audit plan will be shared and discussed with Scottish Water to enable an efficient audit process.

During the course of his duties, the Reporter should wherever possible scrutinise documentary evidence that supports the case being presented by Scottish Water. An opinion as to the soundness of this information is required to ensure that Scottish Water is taking decisions based on good quality information. Where necessary, the Reporter will also make site visits to discuss and verify information being used to support investment decisions.

The most important duty that the Reporter will carry out is to review and challenge the capital investment programme proposed. The Reporter and his team will, on a sample basis, audit and challenge the scope of requirements, proposed solutions and the basis of cost estimates for the proposed specific schemes. We will also ask the Reporter to comment on the overall size and scope of the programme. His comments should draw on his experience with other companies.

14.9.4 Clarification of the information submitted in the business plan

Once Scottish Water has submitted this detailed business plan, we will require an opportunity to clarify some of the information submitted. These clarifications are likely to range from high-level issues relating to the underlying strategy, to detailed queries on the information contained in individual tables. A process for clarifying these issues has been incorporated into the timetable shown previously in this chapter.

We have agreed that we will write to Scottish Water to raise any issues. These issues will then be addressed at joint workshops. In this way we hope that we can maintain an effective audit trail and keep the process as transparent and collaborative as possible. We are encouraged that Scottish Water agrees with this approach.

14.10 Scottish Water Board representation

The business plan process ends with a formal presentation of Scottish Water's strategy by its Board to this Office. We would expect this strategy to be consistent with the business plan and all of the information in the presentation to be consistent with the business plan tables.

There will be two such formal presentations – one for each business plan. Scottish Water will have a maximum of three hours to present its strategy and objectives. If we believe that there has been a material change in strategy between the first and second plans, we will seek to understand the reasons in some detail.

14.11 The strategic business plan 2006-10

Although the Strategic Review of Charges will only cover the period from 2006 to 2010, Scottish Water will have to pay attention to the longer term. Some of the work it plans and starts in the period will carry over beyond 2010. Capital investment will be in assets with lives well beyond 2010, and much of it over 50 years. Target dates for compliance with major environmental and drinking water quality standards lie beyond 2010 and Scottish Water will be working towards them.

At the highest level, Scottish Water's business plan will look at what it needs to do to meet the targets set for it. It will consider how the targets translate into outputs, that is, defined measurable results. It will set out the schemes that it believes will achieve the outputs. These schemes can be individual projects or a collection of projects to tackle particular issues.

Scottish Water must obviously consider how it can achieve the required outputs in the most efficient way

possible. It must achieve a balance between capital expenditure, capital maintenance and operating expenditure. It will need to make decisions such as whether it is more efficient to meet an output by prolonging the life of an existing asset or developing a new replacement asset.

Scottish Water should also examine the most efficient way of financing the proposed work and its preferred balance between revenue and debt.

The cost of carrying out the work to achieve the output and the cost of financing the work will both ultimately influence the level of customers' bills. Scottish Water must therefore set out what its proposals will mean for customers.

14.12 Our review of Scottish Water's business plan

We expect Scottish Water to submit a draft business plan that contains a complete statement of its strategy. Our review will assess whether:

- the plan sets out a strategy consistent with the expectations on Scottish Water;
- the strategy has taken account of costs and benefits and considered possible risks;
- the plan shows a clear relationship between what is required of Scottish Water by legislation, guidance, stakeholders and its outputs;
- the outputs are clear, defined and measurable;
- the information is robust and is consistent with our guidance on the business plan.

We will work with Scottish Water to ensure that the business plan meets our needs and can be used to inform the price setting process. We will require Scottish Water to publish at least a summary version of the first draft business plan and both a summary and full version of the second draft business plan. The publication of this plan and, in particular, the detailed investment programme will be important in reassuring customers that they will receive value for money.

Section 2: Chapter 15

Appointment of a Reporter

15.1 Introduction

In previous chapters we have discussed our role in setting targets for Scottish Water and the importance for customers of monitoring performance against these targets. We have also described the importance of information in informing the regulatory process.

Successful regulation relies on high-quality information and analysis. Without it, the targets that are set for the regulated company may be too challenging or too easily achieved. This is not in the customer interest. If the targets are too challenging the company will not be incentivised to attempt to achieve the targets. If too easily achieved, customers are paying too much or receiving a poorer service than they should.

Poor information and analysis can also make the targets vulnerable to challenge. This impacts directly on customers and stakeholders, as it is the existence of clear targets that drives regulated companies to tackle inefficiencies, deliver investment and achieve customer service improvements.

In this chapter we discuss the improvements that have been made to information provision by the introduction of a regulatory Reporter for Scotland. We explain why we have introduced a Reporter into the water industry in Scotland and the benefits that it brings for customers. We compare the role of the Reporter in Scotland with that of the Reporters in England & Wales.

15.2 Improvements in information provision

In Chapter 4 we have described in detail the improvements in information gathering and performance monitoring that have taken place in recent years. Prior to the creation of the three former water authorities¹ in 1996, only very limited information was available about the performance of the water and waste water industry in Scotland. With the formation of the three authorities, the levels of available information, and hence the ability

to monitor performance, gradually began to improve. However, there were initially still significant differences between the three authorities on the information they reported.

Shortly after the formation of this Office in November 1999, we signalled² our wish to undertake rigorous comparisons between the water authorities and between the industry in Scotland and in England and Wales. The subsequent 'information project'³ led to the creation of a Scottish version of Ofwat's June return.

Our Office now holds Returns from 1999-2000 onwards for the three former authorities. Each of the three authorities submitted a Return for 2001-02. The Scottish Water transition team also submitted a consolidated return for the industry in Scotland. Since 2002-03, Scottish Water has submitted a single Return. From 2004 most of the tables from the Annual Return have been available on our website.

In recent years we have also introduced a range of other information gathering activities to augment our analysis capability and the robustness of the regulatory process. These include:

- Monthly financial returns. These financial reports, referred to as RAB Returns, provide a detailed breakdown of Scottish Water's financial performance over the preceding month and progress against annual budgets. This allows monthly monitoring of progress against the financial targets set out in the Strategic Review of Charges 2002-06;
- Quarterly returns on progress with the capital investment programme. These provide an update on progress, at a project level, with delivery of the capital investment programme. They contain information on: forecast and actual project spend, physical progress towards defined milestones, and explanations of financial variances;
- Quarterly Customer Service Performance Returns.

¹ North of Scotland Water Authority, West of Scotland Water Authority and East of Scotland Water Authority.

² In the interim Strategic Review of Charges published by the Water Industry Commissioner for Scotland in early 2000.

³ See Chapter 2, 'The collection and use of information'.

These provide information about Scottish Water's customer service performance and allow us to check compliance with guaranteed minimum standards of service; and

- Customer Revenue information. Scottish Water provides this information twice a year. The information covered in these returns includes detail of customer revenue, consumption and debt analysis. These Returns are invaluable in monitoring revenue on an ongoing basis. They ensure that Scottish Water's customer information is consistent with its declared revenues and with the revenue cap set by Ministers.

The development of these information returns has all contributed significantly to the quality of our analysis. The frequency and definition of these returns have strengthened the regulatory process. We now collect, process and analyse a large amount of information. We expect that the introduction of regulatory accounts will further improve the robustness of the regulatory regime.

We will continue to work with stakeholders to improve our information requirements. However, we believe that the benefits to customers from improved target setting and better performance monitoring are already being realised.

15.3 Quality of information

We believe that we receive sufficient information to support our analysis. Our focus is now on how best to improve the accuracy and reliability of that information.

We have been aware from our early work to establish the Annual Return that there were considerable issues with the completeness, accuracy and reliability of information about the industry. Even before we had finalised our full information requirements, we had asked the authorities for action plans to improve the quality of their management information.

Problems were encountered because of:

- multiple legacy systems;

- inconsistent definitions and references; and

- lack of systems or desire to maintain the currency of information.

In the period immediately before the *Strategic Review of Charges 2002-06*, we worked with the authorities to improve their understanding of key elements of information that we required to complete the Review. We organised a number of workshops and focused on those asset, cost and operating parameters that underpinned our efficiency targets. This process significantly increased our confidence in the key lists of information.

Following publication of the Review in November 2001, we began to address the issue of general information quality with the industry. This involved detailed scrutiny of the information received through the Annual Return and other information returns.

We analyse each return carefully. Our analysis looks both at the internal consistency of the information provided and the consistency of the information in the latest return with that provided in previous versions of the same (and other) returns. We also check any commentary from Scottish Water to see whether any differences are explained and, if so, to what extent.

We will then write to Scottish Water with any issues that we have identified and request clarification. Although this process is time-consuming, it does ensure that the quality of information improves considerably each year.

While we were pleased with the gradual improvement in the consistency and reliability of the regulatory information we received over the last two years, there was still significant room for improvement. In our *Costs and Performance Report 2001-02* we commented on the 2001-02 annual returns:⁴

"It is clear that there needs to be further improvements, not only in the quality of information provided in regulatory submissions but also in the attention paid to the commentaries. In regulating the industry's performance, we rely on the commentaries to be complete and accurate.

⁴ Costs and Performance Report 2001-02, published in February 2003, Chapter 3, Section 3.5, Page 18.

Unfortunately, in some instances significant changes in the information provided were not explained.”

Issues with regard to the quality of regulatory submissions surfaced again during discussions about Scottish Water’s business plan between March and May in 2003. The discussions on the business plan are described in detail in Chapter 5. Essentially, the issues centred on the validity of the targets set out in the Strategic Review of Charges and, in particular, the comparisons that were drawn with performance in England and Wales. Underlying the issues was a concern about the accuracy of the information on which the Strategic Review targets were based.

As described in detail in Chapter 5, the outcome of the business planning process was an agreement between the Scottish Executive, the Commissioner and Scottish Water on ‘ten principles’.

Two of the ten principles relate to improving the quality of information submissions:

Principle 4

“A Reporter of regulatory information will be appointed as soon as practicable. The Reporter will operate in a fashion similar to Reporters in England and Wales. The Reporter should be appointed by the Commissioner and would be chosen from amongst persons that have served at least three years as an Ofwat-named Reporter. The Executive will meet the cost of the Reporter.”

In England and Wales it is water industry practice for Ofwat to use a consultant engineer (known as a Reporter) to help verify a company’s return. The Reporter audits the information provided to the regulator by the company and highlights any issues or inaccuracies. A detailed description of the role of the Reporter in England and Wales is provided below.

We appointed a Reporter for the water industry in Scotland December 2003.

The regulatory Reporter is Mr. David Arnell⁵ of Black and Veatch Consulting. The Reporter’s duties are covered in detail below but in summary we will ask him to review all aspects of Scottish Water’s information returns. This will include the audit of both Scottish Water’s annual regulatory return and its business plan. In particular, we will ask the Reporter to review the proposed investment programme to ensure that Scottish Water’s investment plans are robust. Such scrutiny has played an important role in improving the quality and reliability of information provided to Ofwat by the companies in England and Wales.

Principle 10

“Scottish Water will engage with the Commissioner in improving the quality of data supplied to the Commissioner.”

This principle recognised the requirement described above for further improvements in the quality of information supplied to us.

This principle has promoted joint thinking on how best to improve the quality of information provision. We believe that engaging with Scottish Water (and other stakeholders) to explain our analysis will lead to a more effective, transparent and robust regulatory regime. This will be in the interests of customers.

15.4 The benefits expected from appointing a Reporter for the Scottish water industry

There were four reasons why we were keen to appoint a Reporter:

- There was a need for an independent assessment of the quality and reliability of information provided by Scottish Water;
- We believed that a Reporter could assist in accelerating the improvement in information quality in Scotland;
- We believed that a Reporter could help Scottish Water ensure that proper processes for collecting,

⁵ Mr Arnell is also the Reporter for Northumbrian Water Services Ltd.

storing and using information were established; and

- We believed that a Reporter could assist us in defining 'core' and 'non-core' activities and ensuring that the 'retail'/'wholesale' split was robust.

15.4.1 Reliability of information

Regulation can range from very simple analysis of information through to a highly technical exercise. An example of 'simple' regulation is the analysis of the number and type of payment options that are available to customers. This type of analysis might be carried out in order to assess the level of service received by customers and might involve a comparison with other utilities and water utilities in other jurisdictions. In contrast, there are other areas, such as the analysis of costs and efficiency, which require highly technical approaches. These approaches would include, for example, the use of statistical and econometric techniques for benchmarking costs.

These more technical analyses require better quality information in order to produce reliable conclusions. The Reporter can play an important role in ensuring that our analyses use the best information available.

Similarly, we are keen to understand the reliability of the answers generated by our analytical models. This is partly a function of the model, but the quality of the information used is also central to the reliability of the answer. The Reporter can help us to understand how the quality of information has affected our analysis.

15.4.2 Changes to the regulatory framework

Proposed changes to the regulatory framework contained within the Water Services etc (Scotland) Bill may have required the introduction of a Reporter for the water industry in Scotland. In his response to the Finance Committee, the Minister announced an intention to strengthen the regulatory framework significantly. These proposals involve the establishment of a Commission and the delegation of decision-making powers to that Commission. Scottish Water would gain a right of appeal to the UK Competition Commission. The Scottish Executive is also proposing to require

Scottish Water to establish a new non-core subsidiary that will become a licensed retailer. This licensed retailer would compete with new entrants after 2008 for the right to provide billing, collection and customer services to non-domestic customers. If both of these proposals are to be properly robust and able to withstand challenge, there would be a clear need for rigorous policing of the separation of activities within the water industry. Similarly, if the Commission is to be seen to act reasonably in reaching its decisions, it will have to be seen to have followed best practice. This will require both a very clear process and the use of independent expert scrutiny where appropriate. A Reporter is well placed to meet both of these needs.

15.4.3 The role of the Reporter in accelerating the improvement in the quality of information

A Reporter can help Scottish Water to improve the quality of its information. The Reporter can use experience from south of the border to help Scottish Water introduce best practice in the collection, storage and use of information. The Reporter will ask the following kinds of questions:

- What information is held by Scottish Water?
- How is the information produced?
- Which methods of information storage are used?
- What is the quality of the information that is held?
- What information is collected but not used?
- What use is made of the information?

When advocating improvements to be made by Scottish Water, the Reporter will benefit from being perceived as knowledgeable about best practice, particularly when drawing their experience of approaches successfully employed elsewhere.

15.4.4 Ensuring proper processes for information capture and provision

Good quality, reliable information can only be produced if there are effective processes in place for collecting information. The Reporter will have an important role in auditing the management of information and suggesting further improvements.

The Reporter brings a new level of independent scrutiny to the water industry in Scotland. This builds on the improvements in information provision that have already been made.

15.5 The situation in England and Wales

The concept of a regulatory Reporter was developed in the water industry in England and Wales. It is therefore useful to examine the function that the Reporter serves in England and Wales and to compare this with the current situation in Scotland.

In England and Wales, the *Reporters' Protocol* (Ofwat, March 2003) defines the framework within which the Reporters operate. The protocol sets out the following aspects of the framework:

1. the Reporter's role;
2. the reporting process;
3. Reporter and auditor relationships;
4. the scope and content of the Reporter's reports;
5. annual Reporter performance review arrangements;
6. external review of Reporter arrangements;
7. contractual aspects of Reporter and company relationships; and
8. the appointment procedure for Reporters.

Each of these elements is described in detail in the protocol. The provisions of the protocol are summarised below but the full text of the protocol is available in *Reporters to Ofwat: Reporters Protocol* from <http://www.ofwat.gov.uk>.

15.5.1 Auditors and Reporters

Each water company has a Reporter and an auditor. The role of the auditor is similar to, but more restricted than,

that of the Reporter. The Auditor examines and evaluates his firm's financial and information systems, management procedures, and internal controls to ensure that records are accurate and that controls are adequate to protect against fraud and waste. They also review a company's compliance with corporate policies, laws and government regulations.

The Reporter will look in more depth at the company operations, its management information and the returns made to the regulator. Typically, the Reporter will rely on the auditor for a view on the accuracy of financial information.

15.5.2 The role of the Reporter in England and Wales

The role of the Reporter in England and Wales is to assist the regulator, Ofwat. The protocol specifies that Ofwat will have direct contact with the Reporter on any matters within the terms of reference of the appointment.

In carrying out its functions, the Reporter owes a primary duty of care to Ofwat, but also a duty of care to the company. It must, however, be completely independent of the company and avoid any conflict of interest by not accepting consultancy work from the company.

The Reporter is required to take account of comparative information published by Ofwat. He should also be fully up-to-date with the quality framework and guidelines established by the Environment Agency and by the Drinking Water Inspectorate.

15.5.3 The reporting process

The first step of the reporting process is for Ofwat to issue guidelines to the Reporter covering the scope of any audit and the issues to be addressed. In response to the guidelines, the Reporter submits to Ofwat a plan of the audit, outlining the method to be used and the detailed key issues that will be addressed. The company also receives a copy of the plan and has the opportunity to make representations to Ofwat. Ofwat will then agree the plan or require changes.

The Reporter must address the areas agreed in the audit plan. This is likely to involve commenting on material assumptions, including the consequences of their omission, reviewing the allocation of expenditure between categories specified by Ofwat, and checking in detail areas where expenditure is projected to be high.

15.5.4 Reporter and auditor relationships

The Reporter does not have to validate separately company information or systems if this duplicates earlier scrutiny by the auditors. Instead, he should acknowledge and report the auditor's scrutiny.

Reporters need to work with the auditors where there is overlap with regulatory accounts. Reporters should take advice on financial and accounting assumptions from the auditors in order to comment properly on the annual return.

Both Reporters and auditors must be mindful that the information in specific tables and submissions could be allocated to either the Reporter or the auditor. They should also note that audit arrangements must be sufficiently robust to withstand challenge on the grounds of weakness in scrutiny due to skill or experience gaps associated with scrutiny of engineering or financial information. These requirements encourage the Reporter and the auditor to take joint responsibility for scrutiny. The objective is to avoid a situation where both the Reporter and the auditor assume that the other has primary responsibility for the scrutiny of a particular piece of information.

15.5.5 The scope and content of the Reporter's reports

The protocol specifies that the Reporter's reports shall be free standing, ie the reader should be able to understand the report without direct reference to other documents. The protocol also specifies the points that should be addressed by the Reporter. These include:

- whether the company submission complies with Ofwat guidance;
- whether material assumptions have been exposed, challenged and assessed;

- the company's quantification of efficiency improvements in projections of operating costs and capital costs;
- an assessment of the quality assurance procedures used in relation to the production of the submission;
- a review of transfer prices;
- an assessment of expenditure on capital maintenance, quality enhancements and the compliance programmes, efficiency improvements, enhanced service levels, supply/demand balance, and leakage;
- an assessment of the extent to which the quality regulators have confirmed their agreement to the timing and phasing of the compliance programme outputs;
- an assessment of the reasons for changes to company policies and/or information submitted previously;
- an assessment of the methods and procedures adopted to produce the submission;
- an assessment of the company's evaluation of the ranges of uncertainty of cost estimates and output figures; and
- the response to any specific questions or areas of concern raised by Ofwat.

15.5.6 Annual Reporter performance review arrangements

Ofwat carries out an annual review of the Reporter's performance. These reviews are issued to ensure that each Reporter can take advantage of best practice. The review considers:

- the overall quality of the work carried out;
- the degree of assistance the reports give to Ofwat in its assessment of the company submissions;

- timeliness of the reports;
- how easy they are to understand;
- the completeness of both the company submissions and the Reporter's reports with respect to the reporting requirements and specific questions asked by Ofwat;
- evidence of the technical expertise that has been applied;
- the level of time commitment given to the work; and
- the costs incurred and how these compare with other such reviews and audits.

The Reporters are informed of the outcome of these reviews so that they can address any areas of concern and improve their performance in future.

15.5.7 External review of Reporter arrangements

Periodically, Ofwat appoints a review team to carry out an external review of the Reporter arrangements.

These reviews investigate:

- the consistency of individual Reporters' reports to Ofwat over time and between companies;
- the work carried out by Reporters and reporting teams in preparing their reports to Ofwat;
- the effectiveness of the arrangements for Reporters under this protocol; and
- other specific matters.

A team from KPMG and Babbie Group carried out the external review during the 1999 price review in England and Wales. The team stated:

"The Reporters process is valuable to the Director in giving him an objective evaluation of the soundness and validity of the information employed by the water

companies in the development and presentation of their Business Plans. The Director should feel confident in relying upon this evaluation."

15.5.8 Contractual aspects of Reporter and company relationships

The Reporter's contract is with the company and covers a maximum of five years. The company is responsible for paying all of the costs of the work carried out by the Reporter.

The company must allow the Reporter unhindered and timely access to its assets, systems, information, working papers, other records and relevant personnel. The company must make facilities available to allow the Reporter to inspect and copy materials, to inspect assets, and to use people and equipment to prepare a report.

15.5.9 The appointment procedure for Reporters

The company announces a competitive tender for a Reporter. Following the tender process, the company establishes a shortlist of a minimum of three Reporters. It then submits the shortlist to Ofwat, including:

- a recommendation as to the most appropriate Reporter to appoint;
- a tender evaluation report covering all tenders received by the company;
- details of the shortlisted Reporters and their teams, including relevant experience and proposals for how each Reporter intended to carry out the role;
- a critical appraisal of the shortlist, explaining why the company considers that its recommended Reporter is best suited to provide Ofwat with the services required.

Ofwat reviews the company's tender report and recommendation and may interview candidate Reporters. When it is satisfied with a candidate, Ofwat will approve the appointment.

15.5.10 The Reporter's role, the reporting framework and the reporting process

Terms of reference specify the Reporter's role, the framework for the introduction of Reporters (covering for example, the Reporter contracts, their appointment, and the duty of care that they owe), and the reporting process. The arrangements in Scotland are drawn from, and mirror closely, those in England and Wales.

However, there are two key differences between the arrangements for the Reporter in Scotland and those in England and Wales, namely:

- the description of the reports to be produced, and
- responsibility for paying Reporters' fees.

The *Reporters' Protocol* in England & Wales does not define the specific reports that the Reporter is expected to produce. Reporters are required to provide a report of the audit of any water company information submission requested by Ofwat. The protocol also requires the Reporter to carry out supplementary or special investigations of particular aspects of the water company business as requested.

In Scotland we can also require a report on any information provided by Scottish Water. However, we have also highlighted those areas where we have particular concerns. Our aim is to provide more clarity on our expectations. The Reporter in Scotland is likely to know most of the areas where we will require reports. This is partly because we need to prioritise certain areas in information returns for scrutiny. As the overall quality of information improves, we will look to the Reporter to broaden the scope of detailed scrutiny.

In England and Wales the companies are responsible for meeting all of the costs incurred by the Reporters in carrying out their activities. In contrast, in Scotland we have responsibility for paying the Reporter's fees. The Scottish Executive provides a grant to this Office to meet the costs of this work. On the one hand this will tend to reinforce the independence of the Reporter from Scottish Water. On the other, this may reduce the incentive on Scottish Water to work efficiently with the Reporter, as they are not paying directly for his services.

We will seek to ensure that we establish clear processes and protocols for Scottish Water's interaction with the Reporter to minimise the opportunity for inefficiency.

15.6 Conclusions

Information is vital to effective economic and customer service regulation. Specifically, we need accurate and reliable information on which to base our decision making when we set efficiency targets for Scottish Water. We also need accurate information in order to be able to assess Scottish Water's actual performance in meeting the targets.

Improvements in the regulatory process in recent years, specifically the increased volume of information provision and depth of analysis, have highlighted the need for an increased focus on the quality of information returns.

The introduction of a Reporter in Scotland will improve the quality and reliability of information provided by Scottish Water. The Reporter can offer Scottish Water the benefit of his knowledge of best practice in England and Wales in all aspects of collecting, storing and using information.

Annex 1

The Legislative Framework

This annex sets out in full the key statutory provisions referred to chapter 1.1. The complete Acts are available from HMSO – see <http://www.hmso.gov.uk>.

Section 13 of the Water Industry Act 1999 states:

75A. - (1) The Commissioner shall, when required by the Secretary of State, advise him on the matters to be taken into, or left out of, account by the new water and sewerage authorities in fixing charges in charges schemes (within the meaning of section 76(1) of this Act).

(2) The advice-

(a) shall, as the Secretary of State requires, relate to authorities generally or to a particular authority,

(b) shall apply in relation to charges schemes made during such period as the Secretary of State may specify (in this section referred to as "the period of the advice").

(3) In preparing his advice the Commissioner shall have regard to-

(c) the economy, efficiency and effectiveness with which authorities are using their resources in exercising their functions,

(d) the likely cost to each authority, for the period of the advice, of exercising the functions mentioned in subsection (4) below,

(e) the likely borrowing capacity of each authority for the period of the advice,

(f) any guidance issued to authorities by the Secretary of State, and

(g) any directions issued under section 116 or 117 of this Act.

Section 33 of the Water Industry (Scotland) Act 2002 repeats the provisions of Section 13 of the 1999 Act,

replacing references to the three authorities with references to Scottish Water:

(1) The Commissioner must, when required by the Scottish Ministers, advise them on the matters to be taken into, or left out of, account by Scottish Water in fixing charges in charges schemes.

(2) The advice is to apply in relation to charges schemes made during such period as the Scottish Ministers may specify (in this section referred to as "the period of the advice").

(3) In preparing his advice the Commissioner shall have regard to-

(a) the economy, efficiency and effectiveness with which Scottish Water is using its resources in exercising their functions,

(b) the likely cost to Scottish Water, for the period of the advice, of exercising the functions mentioned in subsection (4),

(c) the likely resources, other than income from charges for goods and services, available to Scottish Water for the period of the advice,

(d) any guidance issued to Scottish Water by Scottish Ministers, and

(e) any directions given under section 44 or 56.

Section 3 of the Water Industry (Scotland) Act 2002, states:

3 Functions of the Commissioner

(1) The Commissioner must investigate any complaint made to the Commissioner or a Customer Panel by a current, potential or former customer of Scottish Water as respects any of its core functions.

(2) A Customer Panel must refer to the Commissioner any such complaint which is made to it.

(3) The Commissioner need not investigate a complaint under subsection (1) if-

(a) the complainer has not pursued the complaint with Scottish Water, or

(b) it appears to the Commissioner that the complaint is vexatious or frivolous.

(4) The Commissioner may, on behalf of the complainer in a complaint investigated under subsection (1), make representations to Scottish Water about any matter-

(a) to which the complaint relates, or

(b) which appears to the Commissioner to be relevant to the subject matter of the complaint.

(5) Where the Commissioner investigates a complaint referred by a Customer Panel under subsection (2), or decides not to investigate such a complaint, the Commissioner must send to the Panel a report of the investigation or, as the case may be, a statement of the reasons for not investigating the complaint.

(6) The Commissioner is to advise the Scottish Ministers on any matter which appears to the Commissioner or to them to relate to-

(a) the standard of service provided by Scottish Water to its customers, or

(b) the manner in which it conducts its relations with its customers or potential or former customers, in the exercise of its core functions.

(7) The Commissioner has power to do anything which is calculated to facilitate, or is incidental or conducive to, the exercise of the Commissioner's functions.

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August 2004

Our work in regulating the Scottish water industry:
The calculation of prices

volume **3**

**WATER INDUSTRY
COMMISSIONER
FOR SCOTLAND**

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Foreword

My role is to promote the interests of customers of Scottish Water. In 2001, I set challenging efficiency targets for Scottish Water. In 2003, I challenged Scottish Water to build on the solid start that it had made. I am now increasingly confident that over the next two years we will see further significant improvements in the performance of the Scottish water industry.

By 2006, I expect Scottish Water to have been able to reduce its inherited level of operating costs by some £145 million annually in real terms. Customers' bills will consequently be around 15% lower (over £40 a year for the average household) than they would otherwise have been.

Scottish Water has also made important progress in gaining a better understanding of its assets and costs. This should ensure that the efficiency of the industry in Scotland relative to that of the companies south of the border continues to improve.

Rigorous, objective regulation is therefore beginning to deliver real value to customers. However, it is important that we continue to build on this early success. I therefore welcome the Ministers' proposals that the current regulatory regime should be strengthened. These proposals are consistent with normal regulatory practice in other utilities and in the water industry south of the border. In particular, I believe that the introduction of the proposed Water Industry Commission for Scotland will help to depersonalise regulation. I also believe that giving the Commission the power to decide, rather than to advise, on prices should help to make regulation more transparent, and should improve people's understanding of the impact on their bills of decisions by Ministers and the regulator.

The proposed right of appeal to the Competition Commission that will be available for Scottish Water should also reassure stakeholders that the targets set in the *Strategic Review of Charges 2006-10* are challenging but achievable. I will shortly publish our proposals on how we will set targets for and monitor improvement in operating cost efficiency. This is in the interests of both current and future customers.

Scottish Ministers have asked me to prepare this second full Strategic Review of Charges on the basis that the final outcome could be the first determination of prices for the water industry in Scotland by the new Water Industry Commission for Scotland. In order to ensure that the outcome is consistent with regulatory best practice, I am preparing this Review according to the Better Regulation Task Force Principles of accountability, transparency, proportionality, consistency and targeting. As such, I intend to publish the key information submissions that I receive from Scottish Water, as well as the tools that I will use to complete my analysis, including my financial and tariff basket models.

Notwithstanding the cost reductions already achieved by Scottish Water, there will still be considerable scope for further improvement after 2006. I want to ensure that customers get value for money today without compromising future prices or the service levels that future generations receive. To that end, I intend to set further operating and capital cost efficiency targets for Scottish Water. These will be challenging but achievable and will ensure that prices paid by customers are as high as is necessary to ensure a sustainable industry – but no higher than they need to be.

This is the third volume concerning our work in regulating the Scottish water industry. It describes our proposed approach to setting prices in the *Strategic Review of Charges 2006-10*. I propose to use the regulatory capital value method of price setting; this will ensure that stakeholders can more easily compare the financing of the industry in Scotland with that south of the border. It will also be easier to monitor Scottish Water's progress in delivering its capital programme and improving its operating cost efficiency.

Proposals by the Scottish Executive to introduce a licensing framework will bring benefits to all customers. I would expect that separating Scottish Water's retail and wholesale activities will increase the transparency of cost allocation within the business and identify further significant opportunities for efficiency. It is also likely that the customer service offered by the retail arm of Scottish Water is likely to improve in response to market

pressures. This volume also discusses our proposed approach to the setting of a wholesale price. The wholesale price needs to be set at a level that favours neither the retail nor the wholesale business of Scottish Water. I would welcome the views of stakeholders about how this can be best achieved.

I have included a number of questions for consultation. Responses from stakeholders will be important if I am to ensure that the *Strategic Review of Charges 2006-10* establishes proportionate and consistent targets for the water industry in Scotland. I am keen to facilitate debate about our proposed approach to the Review and, more generally, the challenges that still face the water industry in Scotland. I am therefore holding a number of stakeholder information days over the next 18 months. I encourage stakeholders to come to express their views. These views will help to inform the Strategic Review of Charges and will ensure that the process achieves the best possible outcome for customers.

A handwritten signature in black ink, appearing to read 'Alan D A Sutherland'.

Alan D A Sutherland

Water Industry Commissioner for Scotland

September 2004

Executive summary

Introduction

We are committed to the principles of the Better Regulation Task Force: transparency, accountability, proportionality, consistency and targeting. Our approach to this second full Strategic Review of Charges covering the period from 2006-10 takes full account of these principles. In this third volume we discuss how we propose to calculate the prices that customers will have to pay in the next regulatory control period. We have identified a number of questions for consultation. These questions are set out at the end of the relevant chapters and are reproduced under chapter headings at the end of this Executive Summary. All responses to this consultation should be received by 31 October 2004. These should be sent to :

Katherine Russell
Water Industry Commissioner for Scotland
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or by email to :

SRCmethodology@watercommissioner.co.uk

We will publish a summary of responses, and our conclusions, on our website www.watercommissioner.co.uk on 19 November 2004.

For many customers of water and sewerage services, price is the single most important issue. This volume therefore examines:

- the costs that have to be recovered by Scottish Water;
- the way prices are calculated;
- how adjustments to prices are made when circumstances change; and
- how financial risk is managed in the public sector.

Where costs are incurred

Rain water may well fall from the sky, but turning that raw water into a reliable, high-quality water and sewerage service is a costly and complex operation.

Treating water and transporting it through pipes to customers is asset intensive – there are more than 20 metres of water main for every household in Scotland. According to Scottish Water's 2003 regulatory return, it would cost some £32 billion to replace all of the water industry's assets in Scotland. This is more than £6,000 for every person in Scotland.

Customers, however, are not primarily concerned with how the service is delivered or the assets that are employed. They want a reliable and high-quality service to be available on demand. In particular, they want to be assured that the service they receive for the amount they pay represents value for money.

The Scottish Executive's consultation Paying for water services 2006-10

In June 2004 the Scottish Executive launched a consultation on the principles of charging for water. The consultation was prompted by the negative reaction of some customers to the introduction of broadly cost-reflective charging (including higher standing charges) and the harmonisation of charges across Scotland. Although this benefited many customers (households in the North, and properties with higher rateable values in the North and lower rateable values in the East), a large number of small business customers who did not use much water saw significant percentage increases in their charges and as a result were critical of the changes.

The Executive's proposals in *'Paying for water services 2006-10'* are presented in two sections: 'Proposed principles of charging' and the 'Application of principles'. The consultation makes proposals on the principles of charging in four areas:

- **Charging for services:** The Scottish Executive suggests that, subject to safeguards, customers should pay for the service they receive;

- **Harmonised charges:** The Executive believes that, since Scottish Water provides services on a national basis, it is right that customers should pay for those services on a consistent basis throughout the country;
- **Cost reflectivity:** The Executive suggests that charges for similar types of customer should broadly reflect both the fixed and variable costs of supplying those customers (subject to the principles of harmonisation and affordability); and
- **Making changes to charging structures:** The Executive proposes to gradually introduce changes in tariffs over a number of years.
- **Funding expansion of the public networks:** The Executive sets out proposals that will share the cost of growth in the network between existing and future customers.

Our response to the consultation

We agree with the principles of charging proposed by the Scottish Executive. The first three of these principles are fully consistent with the principles that we applied at the time of the last Strategic Review of Charges. On the proposals for making changes to charging structures we would note that there is no easy way to implement these changes. While we recognise that it is not desirable to increase bills sharply, we are also aware that introducing changes more slowly requires those who are currently paying more than their fair share to continue to pay (at least) a little more in the interim. We regard this as a political question and would welcome clear guidance from Ministers.

Depreciation

The effectiveness and value of assets declines over time and customers should bear these costs as they receive the benefit from use of the assets. Although effective asset management can help to reduce costs, asset replacement costs will continue to have a major impact on customers' bills.

The water and sewerage industry has two broad types of asset. These are termed infrastructure (essentially the water mains and sewers) and non-infrastructure (treatment plants, offices, vans, computers, etc). From a regulatory point of view, the depreciation policy of the water and sewerage business has to strike a balance between current and future customers. We therefore allow for an appropriate depreciation charge to be recovered from customers' charges. There are two types of depreciation charge: a standard depreciation charge on the non-infrastructure and an infrastructure renewals charge.

Infrastructure renewals charge

Infrastructure assets such as sewers and water mains usually have very long lives. It is particularly difficult to

The consultation also considers the application of the principles of charging. The issues it addresses include:

- **Cross subsidies:** A cross subsidy exists when one group of customers pays more (in percentage terms) relative to their cost of supply than another group of customers. The Executive differentiates between desirable cross subsidies (resulting from the policy to harmonise charges across Scotland or to link household charges to Council Tax bands) and unintended cross subsidies. The Executive has commissioned work to understand the nature and extent of any unintended cross subsidies. In the consultation, the Executive also seeks views on how quickly any such cross subsidies should be unwound;
- **Household charging:** The Executive proposes to discontinue the current system of discounts and to use the proceeds to provide more targeted support to those in receipt of Council Tax benefit;
- **Non-household charging:** The Executive proposes to introduce new methods of charging for unmeasured customers and for surface and property drainage in the 2010-14 regulatory control period;
- **The balance between charging and borrowing:** The Executive proposes to keep the total level of borrowing by Scottish Water broadly constant in real terms; and

assess these lives accurately. This is because different types of construction (each with a different expected life) have been interconnected throughout the network. For that reason we rely on the portfolio effect¹ and treat the whole infrastructure network as a single system. The complete asset will never become obsolete or require replacement at any one time; instead, it is replaced in parts as different elements come to the end of their useful lives.

Traditional methods of depreciation for discrete assets, which have observable discrete asset lives, do not work. To overcome the problem, the industry has introduced infrastructure renewals accounting. Under infrastructure renewals accounting, an infrastructure renewal charge is charged to a company's revenue each year. The infrastructure renewal charge is calculated as the average of the forecast capital expenditure on the infrastructure assets over the next 15-20 years.

Non-infrastructure depreciation

We propose to use the same approach to non-infrastructure depreciation as Ofwat uses for the water and sewerage companies in England and Wales. The depreciation charge will be calculated using the straight-line method. We believe that current cost accounting using the Modern Equivalent Asset (MEA) valuation for a fixed asset is the most appropriate for regulatory purposes. This approach ensures that:

- customers bear reasonable costs for the use of assets;
- Scottish Water is fairly remunerated for its capital expenditure; and
- Scottish Water is provided with the incentive to invest in new technology and more cost-effective assets.

These assets will be grouped into five categories:

- very short (assets having a life of up to five years);

- short (assets having a life of six to 15 years);
- medium (assets having a life of 16 to 30 years);
- medium/long (assets having a life of 31 to 50 years); and
- long (assets having a life exceeding 50 years).

The management of financial risk in the public sector

Risk management is the process of identifying, evaluating and responding to risks. Water and sewerage businesses are exposed to operational, legal and asset risks that could affect their compliance with public health or environmental standards and to financing risks. In the Strategic Review of Charges 2006-10 we will seek to minimise the exposure of Scottish Water's customers to these risks. One of the main ways in which we can reduce customers' exposure to risk in the public sector model is to adopt the Regulatory Capital Value (RCV) approach to price setting.

We are also keen to ensure that there are effective controls on access to borrowing. We have therefore commissioned a report from ING Barings on the privatised companies' access to debt. If there are no such controls, the incentives to achieve efficiency targets on time are reduced.

We propose to extend our risk analysis to include the financial ratios that we target in the financial model.

Managing financial risk in the private and public sectors

The purpose of regulation is to seek to ensure that monopoly businesses act in the customer interest. In the private sector, the regulator seeks to establish a balance between the interests of customers and those of finance providers. In doing so, it is the regulator's duty to ensure that an efficient business can fund its operations. In the public sector, the regulator focuses on ensuring that

¹ The portfolio effect is discussed in 'Principles of Corporate Finance' by Brealey and Myers. Please reference the seventh international edition from page 187 onwards.

customers receive a value for money service, and on the delivery of environmental, public health and government policy objectives. These objectives apply over the short, medium and long term.

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

A properly tight budgetary constraint will focus management attention on delivering ongoing improvements in value for money to customers.

Other differences in financial risk

The private sector cost of capital is higher than Scottish Water's cost of debt. Ofwat has recently set a nominal, pre-tax cost of capital of 8.3% [5.1%, real, post-tax]. This compares with Scottish Water's average new borrowing rate of just over 4% nominal pre-tax. Indeed, shareholders of the privatised companies can improve their return further by ensuring that the company performs better than the targets set by the regulator. However, shareholders do also have to absorb risks that are currently borne by the customers of Scottish Water. These would include the costs of any external shocks such as the drought in summer 1995.

In the event of such a shock or underperformance by the business (whether caused by management or external operational factors) a private utility can:

- withhold dividend payments to shareholders;
- seek a rights issue; and
- obtain debt in the private markets.

Private utilities do not have the easy option of increasing charges to customers. The presence of private equity acts as a significant 'shock absorber', which protects customers of the water companies in England and Wales. This is because prices set by Ofwat will not

normally be influenced by a change in borrowing by an individual company.

The Glas Cymru model

It is not necessary to adopt an equity based or private sector model in order to manage financial risk. Welsh Water, for example, has established a structure that protects customers from financial risk, without a traditional shareholder acting as a shock absorber. Glas Cymru is a not-for-profit company limited by guarantee which is wholly debt financed. Glas Cymru has no shareholders. In this case the risk is borne by the providers of the debt finance.

If there is an unforeseen shock, which could have been avoided or limited through proper management, customers will not suffer because Ofwat is under no obligation to increase the cash value of the return on capital allowed to Welsh Water.

Current situation for Scottish Water

In contrast, if Scottish Water is faced with an unforeseen shock, it must either:

- seek unplanned public expenditure in the form of a loan; or
- increase charges to customers immediately.

Customers are currently particularly exposed to any shortfall in Scottish Water's performance against targets. This is because there are no transparent incentives to perform and its budgetary constraints are not truly tight. Scottish Water can seek to use contingency margins within public expenditure limits and the cost of this extra borrowing would be passed on to customers.

We believe that Scottish Water's customers are entitled to a similar level of protection from shocks as customers south of the border. We therefore propose to set prices on the assumption that Scottish Water has achieved both its operating and capital efficiency targets and has delivered the capital programme in full. We propose to make adjustments to reflect any shortfall in performance

in order to ensure that customers are not disadvantaged.

How we propose to determine charges for the 2006-10 period

The role of a regulator is to set prices that are sufficiently high – but no higher – to ensure the sustainable delivery of the desired level of service. We will therefore scrutinise costs carefully.

The costs faced by customers can be categorised into three main areas:

- running costs;
- costs associated with the use of existing and new assets; and
- costs of public private partnership (PPP) contracts.

We use a financial model to establish an appropriate level of revenue that is consistent with:

- meeting these costs; and
- ensuring that Scottish Water should be able to deliver the level of service to customers that will be defined by the Quality and Standards process².

This model allows us to ensure that an appropriate balance is struck between current and future customers. We will also seek to ensure that customers in general are protected from unnecessary fluctuations in their charges.

In calculating prices for customers, we use a tariff basket to divide the identified revenue requirement between customer groups. The detail of how much each customer group will pay will depend on the result of the Scottish Executive's consultation, *'Paying for water services 2006-10'*.

The RCV method of price setting

At this review we are proposing to make some changes to our approach to price setting. We propose to introduce a Regulatory Capital Value (RCV) for Scottish Water. Scottish Water will receive an appropriate rate of return on this RCV. Efficient investment in new assets will be added to the RCV. Depreciation (reflecting the costs of using existing assets) will reduce the RCV.

These changes are limited to the approach to meeting the costs of new and existing assets. We do not believe that this revised approach has any immediate material impact on the prices faced by customers, on the resources available to Scottish Water, or on the implications for public expenditure. The changes are designed principally to allow greater transparency. They bring the approach to price setting for Scottish Water into line with that for the English and Welsh water and UK energy sectors. As such, we will be able to make more direct comparisons in financial ratios than was previously possible.

The RCV is a proxy for the current value of Scottish Water's above-ground asset base. This value will change over time to reflect the ageing of assets (the cost of which is recognised by the infrastructure renewals and depreciation charges) and investment in new assets.

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

The revenue that Scottish Water should be allowed is calculated as follows:

Return allowed on the Regulatory Capital Value + allowable operating costs + depreciation on non-infrastructure assets + the infrastructure Renewals Charge (IRC) + the costs of PPP contracts.

² See the Scottish Executive's consultation document, *'Investing in water services 2006-10'*.

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

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

We will allow for asset costs in two ways, that is the allowed cash return on the RCV and an allowance for depreciation. The allowance for depreciation and the Infrastructure Renewal Charge ensures that sufficient funds are available to replace assets that are at the end of their useful lives.

The PPP contracts effectively swapped initial capital costs, financing and maintenance costs and operating costs over the life of an asset for a series of annual payments. We propose to scrutinise these costs carefully. Our analysis of the appropriate level of these PPP costs will be allowed in our calculation of revenue.

One important feature of the regulatory capital method of price setting is that we do not have to take decisions about how much extra borrowing Scottish Water should seek. The method of financing (whether from retained surplus or from new debt) will not have an impact on the price paid by customers. However, if debt increases as a proportion of the RCV, future customers will face either higher prices or a service that is less able to absorb operational or legislative shocks.

Monitoring of the RCV and the ratio of total debt to the RCV should therefore provide stakeholders with a useful indicator of the financial performance of the water industry in Scotland. Stakeholders can reasonably expect the RCV to increase in line with the profile that is established at the start of the regulatory period. Smaller increases would suggest that the capital programme is making less progress than was expected at the start of

the regulatory period; larger increases would suggest that better progress had been made.

If the capital programme is on target, the ratio of debt to RCV should indicate whether Scottish Water is making sufficient progress towards the efficiency targets that we set in the *Strategic Review of Charges 2006-10*. We propose to use our performance reports to monitor these financial indicators.

The introduction of price caps

In this Review, we also propose to determine a series of price caps rather than a general cap on revenue. We believe that the introduction of a price cap is in the general interest of customers. A price cap largely insulates customers from the impact of changes in the customer base or volumes of consumption during a regulatory period. We will translate the required revenue into a series of price caps for our tariff baskets. The weightings of these tariff baskets will reflect the guidance that we receive from Ministers as a result of the principles of charging consultation.

A customer will be better placed to understand the maximum price that they are likely to have to pay by looking at their use of the water and sewerage service and the price cap for the relevant tariff basket.

The introduction of regulatory accounts

In the last Strategic Review of Charges, we commented on the advantages to be gained from a proper accounting and legal separation between Scottish Water's core and non-core activities. We were therefore pleased when the *Water Industry (Scotland) Act 2002* limited the remit of this Office to promoting the interest of customers of the core business. This will require us to be able to distinguish between the core and non-core functions of Scottish Water. The current *Water Services (Scotland) Bill* would also require us to differentiate between Scottish Water's wholesale and retail functions.

Scottish Water's statutory accounts are not sufficient to provide the information that we now require. In particular, they only detail the financial performance of

Scottish Water as a whole and, as such, are unable to provide a specific breakdown of costs by activity.

Other regulators have overcome these limitations by introducing a set of parallel, regulatory accounts. These accounts are tailored to provide the specific information required for effective regulation. We propose to adopt the practice of other regulators by asking Scottish Water to complete regulatory accounts.

In particular we propose to adopt Ofwat's regulatory accounting guidelines (RAGs) as the basis for our Regulatory Accounting Guidelines. Where we amend or develop these guidelines for application in Scotland we will do so simply to ensure that they are fully consistent with Scottish Water's statutory duties. However, in so doing, we will endeavour to ensure that they remain as consistent as possible with the original Ofwat guidelines. This will be important to our detailed comparison of the financial performance of the industry in Scotland.

Financial modelling

We have built a financial model to allow us to calculate the revenue that Scottish Water requires to carry out its core functions. There is also a tariff basket model, which translates the revenue collected from customers to the tariffs they will pay. Ernst and Young LLP has audited the financial model.

The model is constructed in Microsoft Excel© and consists of a series of linked spreadsheets. The model goes forward to March 2025. We have also developed a detailed user manual which will be available on our website.

Input information

We require robust and detailed information for the financial model. We provided Scottish Water with the input tables for the financial model as a part of the business plan guidance, which we issued in June 2004.

The model also contains financial assumptions, including information on interest rates and inflation expectations. In the Strategic Review we propose to use

two indexes to measure inflation, namely:

- the Consumer Price Index (CPI) for all non-asset costs; and
- the Construction Output Price Index (COPI), to assess the impact of increases in prices on investments.

Other proposed assumptions are outlined in Table 1 below:

Table 1: Other proposed assumptions in the financial model

Title	Assumption	Value
Trade debtors	Number of days	35
Stocks	Percentage of operating expenditure excluding PPP	2%
Prepayments and accrued income	Percentage of revenue	5%
Other debtors	Percentage of revenue	2%
Trade & capital creditors	Percentage of capital expenditure	17%
Accruals and deferred income	Percentage of operating expenditure including PPP	30%
Other creditors	Percentage of operating expenditure including PPP	7%

Financial ratios

One of the key considerations of our modelling is the financial sustainability of Scottish Water. The model will automatically calculate key financial ratios. Our proposed move to use the Regulatory Capital Value method of price setting will allow us to make direct comparisons of Scottish Water's financial sustainability with that of the companies south of the border. We will compare Scottish Water's financial ratios (as far as possible³) with those used by Ofwat in its last two price reviews.

Ofwat set out a list of the financial ratios that it had taken into account in setting price limits at the 1999 review in its report, *'Final determination: Future water and sewerage charges 2000-05'*. These ratios are shown in Table 2.

³ For example, comparisons using equity are unique to the private sector and account needs to be taken of the PFI contracts in Scotland.

Table 2: Ofwat's target ratios for 2000-05

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

In 'Future water and sewerage charges 2005-10: Draft limits', Ofwat outlined the financial indicators that it has used to set prices for the next regulatory period. Table 3 shows these ratios.

Table 3: Ofwat's draft target ratios for 2005-10

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

How we propose to use these ratios in the Strategic Review of Charges 2006-10

Where Ofwat has stated that a target is "around" a certain level, we assume that the ratio for Scottish Water should be within 25% of the target. We would change price limits to ensure that Scottish Water remains compliant with each of these ratios, except debt/RCV (leverage). This is because Scottish Water has no equity finance.

We also propose to publish the two debt payback period ratios and the cashflow to capital expenditure ratio that Ofwat used for the 2000-05 regulatory period. It would be desirable for Scottish Water to remain within these targets. However, we will not change price limits to ensure compliance with the targets for these ratios. This reflects the capital market's view that these ratios are

now outdated. We believe that it is useful to continue to monitor these ratios to ensure consistency in our approach to financial sustainability.

Setting an initial RCV

There are four broad approaches that regulators can use to establish the initial RCV of a regulated utility in the private sector:

- **An accounting approach.** The RCV takes into account the asset value of the company;
- **A market value approach.** The RCV adopts the value placed on the company by the financial markets;
- **A comparator approach.** The RCV is set through comparison with a similar company that has an RCV; and
- **A discounted cash flow approach.** The RCV is calculated by using financial valuation techniques.

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

However, there are precedents for the establishment of a RCV for a public sector organisation⁴. For example, in Australia regulators have tended to use asset based approaches. We could potentially set the RCV by one of four common asset based approaches:

- **Depreciated actual cost:** this approach is straightforward to implement but will tend to understate (possibly significantly) the replacement costs of assets;
- **Depreciated indexed historical cost:** this approach is certainly preferable to depreciated actual cost, but it does not take account of changes in technology;
- **Depreciated Optimised Replacement Cost (DORC):** this approach is theoretically the best asset based approach; however, it is very

⁴ See the Scottish Executive's consultation document, 'Investing in water services 2006-10'. Manchester Airport has a regulatory capital value set by the CAA.

information intensive and can be regarded as quite subjective; and

- **Modern equivalent asset value:** this approach has many of the advantages of DORC, but is less subjective as it does not try to assess the reductions in cost that could be achieved by optimising the design of the water and sewerage network.

A second option would be for us to use a comparator approach. This would have the advantage of being consistent with the approach Ofwat used to set the initial RCV of the water only companies. To use this approach, we would need to identify companies that are broadly comparable to Scottish Water. Two sets of information would need to be available for the comparator company:

- First, a financial measure that is also available for Scottish Water should be available for the comparator. This financial measure could be the book value of debt, the book value of fixed assets or the current cost accounting value of fixed assets; and
- Second, a financial measure that is relevant to estimation of the RCV should be available for the comparator. If the comparator were regulated and had an RCV this could be the RCV itself. If the comparator had no RCV it could be an equity value for the firm.

The water and sewerage companies in England and Wales would provide the most obvious comparators for Scottish Water. We believe that there are a number of ways that we could look to set an initial RCV for Scottish Water based on comparison with the companies south of the border.

The options would include setting the initial RCV for Scottish Water by making comparisons with:

- asset bases (in terms of both value and structure);
- non-infrastructure capital investment;
- Welsh Water's debt to RCV ratio;
- companies' funding costs to RCV ratio (ie debt and dividends); and

- assets relative to the type and number of customers served.

The options would also include comparing the factors outlined above historically with those for Scottish Water today. This would reflect the opportunity that the companies south of the border have had to transform their operations.

The final option that we propose to consider is the discounted cash flow method of asset valuation. We would use our financial model to calculate the current value of Scottish Water. We are not, however, optimistic about this approach as we believe that it would be difficult to establish an appropriate discount rate.

Setting the allowed rate of return

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

In the public sector the regulator cannot set the rate of return based on his observation of the cost of capital in the market. Scottish Water's cost of debt is set by Government. As a public sector organisation it has no contributed equity capital, although it does generate and reinvest trading surpluses.

The allowed rate of return is the rate of return that we believe Scottish Water requires to meet the objectives that have been set by Scottish Ministers. If we set the allowed rate of return at too low a level, there is a risk that Scottish Water would not have sufficient funds to meet its obligations. This could result in debt increasing to unsustainable levels. This would penalise future customers to the benefit of current customers. Alternatively, it could result in delays to the promised environmental, public health or customer service benefits. Customers would certainly pay lower charges if the rate of return was set too low, but they would also receive a poorer service.

If we set the allowed rate of return at too high a level, customers will pay more than they need to. This would act as a disincentive on management to achieve efficiency targets. Failure to achieve efficiency targets means that customers pay more than is necessary in the medium term. Alternatively, if efficiency targets were achieved in full the level of outstanding debt would decline significantly relative to the asset value of the company. This would penalise current customers to the benefit of future customers.

The weighted average cost of capital

The market value of a firm is equal to the market value of the equity plus the market value of the debt. The Weighted Average Cost of capital (WACC) is the overall cost of capital for a firm. It takes account of the capital structure of the firm (ie the market value of its debt and equity) and the rates of return it pays on both its debt and equity.

In order to calculate a WACC a regulator therefore has to decide an appropriate rate of return for both debt and equity. He also has to assign an appropriate market value to the debt and equity of the firm. His calculation of the rate of return is further complicated by both taxation and inflation.

Debt and equity are treated differently for tax purposes. Interest charges are an allowable expense for the purpose of corporation tax. The corporation tax advantages of debt are recognised in the post-tax Weighted Average Cost of Capital calculation. This is shown in Figure 1.

Figure 1: Post-tax Weighted Average Cost of Capital

$$WACC = \left[r_D^* \left(\frac{D \times (1-t)}{D + E} \right) \right] + \left[r_E^* \left(\frac{E}{D + E} \right) \right]$$

Where:
 r = return
 D = debt
 E = equity
 t = corporation tax rate

The investor is therefore concerned with the real rate of return – that is the return after having adjusted for the effect of inflation.

The formula for calculating the real rate of return is shown in Figure 2.

Figure 2: Formula for calculating the real rate of return

$$\text{Real rate of return} = \text{nominal rate of return} - \text{inflation rate}$$

It is important to differentiate between the real rate of return (the return after inflation) and the nominal rate of return (the return before account is taken of inflation).

Applicability of WACC to a Public Corporation

Assessing the WACC for a public corporation is problematic. This is because the regulator cannot easily observe costs of debt or equity and, moreover, estimating the market value of the organisation is difficult.

Setting an allowed rate of return for Scottish Water

Scottish Water does not borrow directly from the capital markets nor does it borrow at commercial rates. Scottish Water does generate surpluses and therefore has retained earnings, which it can invest to achieve the outputs set by Scottish Ministers. It does not currently pay dividends and therefore all of the surplus generated can be reinvested for the benefit of current and future customers. These retained earnings differ from retained earnings in the private sector in that they are not reinvested with the specific goal of generating increased surpluses in the future.

To set an allowed rate of return for Scottish Water based on the same principles used by the regulators of private sector utilities, we would need to estimate an allowed rate of return on debt and an allowed rate of return on 'customer retained earnings'. Scottish Water should be allowed to earn a return when it uses customer retained earnings as a source of funds.

Although it may seem feasible to estimate a WACC for Scottish Water, issues arise because Scottish Water does not have debt or equity that is publicly traded. We

are not therefore able to establish a market-based measure of equity or debt returns for Scottish Water in the way that we would for a private sector company.

The WACC approach is further complicated because regulators have tended to regard the RCV as a proxy for the enterprise value (market values of the debt plus the equity) of the regulated business. The market value of the equity is therefore equal to the RCV minus the outstanding net debt.

The market value of the equity would normally be estimated using the dividend growth model or calculating the NPV of future cash flows. The dividend growth model cannot be used because Scottish Water does not pay dividends. The NPV approach requires an appropriate discount rate to be established in order to discount cash flows that will occur in the future. However, it would be difficult to justify the use of a discount rate that is different from the allowed rate of return. The NPV approach cannot therefore be used since we need a market value to establish the allowed rate of return, but need an allowed rate of return to use the NPV method of establishing a market value. There are, however, four approaches that we could consider:

Ofwat's assessment of the allowed cost of capital

At each periodic review Ofwat establishes an allowed Weighted Average Cost of Capital for the water companies south of the border. Ofwat's current proposed allowed rate of return for the water and sewerage companies is 5.1% real and post-tax.

A possible approach for Scotland would be to use Ofwat's allowed rate of return. We believe that such an approach would not be in the customer interest. Most obviously, the cost of Scottish Water's debt (both the current overall cost and the cost of new debt) is lower than Ofwat's estimate of the cost of debt for the companies south of the border. This would suggest that Ofwat's WACC would significantly overestimate the appropriate rate of return for the water industry in Scotland.

Long-term average borrowing rates

A second possible approach for establishing an allowed rate of return for Scottish Water would be to apply an average of observed historic real borrowing costs. This would have the advantage that it is relatively straightforward to apply. If we were to use this method, we believe that it would not be appropriate to allow extra costs associated with embedded debt to be recovered from customers.

There would still be a potential issue about the rate of return that should be allowed on customer retained earnings. Retained surpluses represent an important source of funds for Scottish Water.

The Treasury Green Book⁵

The 2003 edition of the Green Book reduced the HM Treasury estimate of the appropriate discount rate for public sector projects to 3.5% real. However, HM Treasury did not update the 6% real estimate for the cost of capital included in the 1997 edition of the Green Book.

A third possible approach to setting the allowed rate of return for Scottish Water would be to take the discount rate of 3.5% real as the allowed rate of return. There are two advantages of this approach. It uses a rate of return that is established by Government and it should therefore be sufficient for Scottish Water to fund its efficient operation. Secondly, this approach could cover both the debt and customer retained earnings portions of the Regulatory Capital Value.

However, setting an allowed rate of return at 3.5% real would currently be quite significantly higher than the observed cost of new debt to Scottish Water. This could have the effect of encouraging Scottish Water to increase its borrowing and may delay the necessary improvements in efficiency. The effect of this could be reduced if we regarded the 3.5% real rate as the return pre-tax rather than post-tax.

⁵ 'The Green Book' Appraisal and Evaluation in Central Government, HMSO, 2003

Hybrid approach

A fourth potential approach would be to apply a modified version of the WACC approach. We would combine an observed real cost of debt with an estimate of an appropriate rate of return on the customer retained earnings (the equity portion of Scottish Water's RCV) in order to produce an allowed rate of return.

The future real rate of interest on debt for Scottish Water could be estimated as described above. We propose that the pre-tax allowed rate of return on the customer retained earnings should be set at the post-tax allowed rate of return for debt. In real terms this rate is likely to be low. Valuing customer retained earnings in this way will replicate within a public sector capital structure the equity buffer that protects customers south of the border from operational or legislative shocks⁶.

An additional advantage of this approach is that there would be no incentive for Scottish Water to seek to change its current ratio of debt to regulatory capital value. If the return on the customer retained earnings is greater than the return on debt, Scottish Water would have an incentive to pay down debt. In contrast, if the return on the customer retained earnings is lower than the return on debt, Scottish Water would have an incentive to take on more debt.

This approach should also help stakeholders to monitor Scottish Water's performance. The level of its outstanding debt relative to its RCV should be in line with the forecasts that are included in the Strategic Review of Charges. If the level of debt to RCV declines, either Scottish Water has outperformed its efficiency targets or it has not delivered its capital programme as planned. Conversely, if the level of debt relative to its RCV increases, Scottish Water is either ahead of schedule in delivering the capital programme or has underperformed relative to its efficiency targets.

We currently favour the hybrid WACC approach outlined above.

Depreciation and additions to the RCV

The value of the RCV changes over time to reflect efficient new investment and depreciation of existing assets. Since the RCV is central to the determination of Scottish Water's revenue requirement, it is important that the initial RCV that we establish continues to be representative of the value of its asset base.

Revenue requirement = operating costs + Public/Private Partnerships (PPP) + Infrastructure Renewals Charge (IRC) + depreciation + cash return on the regulatory capital value

Depreciation and additions play a role in this calculation through the impact they have on the RCV, and, in the case of depreciation, as a separate component of the revenue requirement.

Treatment of additions to the asset base

Additions affect the price cap by increasing the RCV. As the rate of return remains constant (it is a percentage of the RCV), any increase in the RCV increases the amount of return allowed in Scottish Water's revenue requirement, and hence increases prices.

The key role of the RCV in price setting is to reflect the value of the physical assets used to provide a service to customers. When Scottish Water makes an investment in its assets – be it simply to replace or maintain assets that have worn out, or to enhance the asset base – this should be reflected in an increase in the RCV. In increasing the RCV, we are ensuring that the return earned on total assets will increase in recognition of the investment made.

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

It is very important, however, that customers are only required to remunerate justifiable expenditure. We

⁶ This issue is discussed in detail in Chapter 4.

therefore need to ensure that only appropriate and efficiently procured capital investment is added to the RCV.

Treatment of depreciation

The role of depreciation is a little more complicated. It can affect prices in two ways:

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

Depreciation can therefore influence Scottish Water's revenue requirement either directly, or indirectly (by affecting the level of return).

Rolling forward the RCV

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

Figure 3 outlines how the change in the RCV is calculated for each year of the regulatory control period.

Figure 3: Rolling forward the RCV

Closing RCV (previous year)
+
Indexation
+
Capital expenditure (excluding IRE)
+
Additions
Infrastructure renewals expenditure (IRE)
-
Infrastructure renewals charges (IRC)
-
Grants and contributions
-
Depreciation
-
Disposals
=
Closing RCV

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

Interim determinations and logging up and down

In Scotland, a Strategic Review of Charges is carried out every four years, while in England and Wales a price review is carried out every five years. The period of time between regulatory reviews is referred to as the regulatory control period. At a regulatory review, the regulator sets price caps or revenue caps for the next regulatory control period.

In order to set price caps or revenue caps, the regulator forecasts the costs that the regulated company will incur over the next regulatory control period, if it carries out its functions efficiently. The revenues recovered by the company must be sufficient to cover these costs.

Ofwat uses two mechanisms to adjust the regulatory price settlement in the event that assumptions made at the periodic review need to be revised. The first is an 'interim determination of the price limit', which takes place during a regulatory control period. The second is the approach of 'logging up and down' at a regulatory review.

The proposed change in the regulatory framework to create a Water Industry Commission with a power to determine prices will, we believe, make it necessary to introduce both the possibility of an interim determination and the logging up and down process. This will ensure that Scottish Water is properly able to finance its functions and can recover the costs of any unexpected expenditure that results from uncertainty rather than underperformance. We propose to introduce a similar framework to adjust prices in Scotland.

What are 'interim determinations'?

An interim determination is a reconsideration of a firm's price limits that is undertaken between formal price reviews. The reconsideration is carried out in the light of

a particular set of circumstances or factors that were not taken into account at the last review. Either the firm or the regulator may initiate an interim determination. If Ofwat knows that there is significant uncertainty about a particular area of the periodic review, it can notify an item. This allows either the regulator or the regulated company to revisit the price limit if better information becomes available. An example would be the rate at which households opt for meters. An example pertinent to Scotland may well be the split between the wholesale and retail businesses.

What is logging up and down?

Whereas an interim determination occurs between reviews, logging up and logging down is an adjustment that takes place at the end of the regulatory control period to reflect differences in cost from the original determination. Such differences will have an impact on prices only in the next regulatory period.

Price caps and tariff baskets

We propose to establish tariff baskets to cover the core services provided by Scottish Water. The use of tariff baskets will also help to ensure that the principles of charging determined by Scottish Ministers are applied in a transparent way. They will also bring the price setting process more into line with the other utility regulators in the UK, such as Ofgem and Ofwat.

The detail of the tariff baskets will be available on our website early in 2005. This will give customers better access to information about bills and will help strengthen the regulatory regime.

Table 4 presents a summary of Scottish Water's tariffs.

Table 4: Summary of tariffs

	Type of tariffs		
	Fixed £ per annum	Fixed – based on rateable value (pence per £ of RV)	Volumetric (pence per m ³)
WATER			
Unmetered domestic	✓		
Metered domestic	✓		✓
Unmetered non-domestic	✓	✓	
Metered non-domestic	✓		✓
SEWERAGE			
Unmetered domestic			
Wastewater (including foul and surface water drainage)	✓		
Metered domestic			
Sewage	✓		✓
Surface water drainage	✓		
Unmetered non-domestic			
Sewage	✓	✓	
Surface water drainage		✓	
Metered non-domestic			
Sewage	✓		✓
Surface water drainage		✓	
Trade effluent	✓		✓ ⁷

A definition of tariff baskets

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

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

⁷ Trade effluent is charged for using both volume and strength.

Table 5: The use of weighted average tariffs

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

The weighted average increase provides a reasonable indication of the impact on customers, as it takes account of the relative size of the impact from each tariff change. We would scrutinise very carefully any material divergence in tariff changes within a basket.

It is important to emphasise that changes in the current balance of tariff baskets will be made to reflect the outcome of the Scottish Executive's consultation, 'Paying for water services 2006-10' and the ministerial guidance which we will receive in January 2005.

Our proposed approach to tariff baskets

In England and Wales tariff baskets are defined in condition B of the companies' operating licences. Scottish Water's duties are set out in statute and there is no equivalent licensing regime in Scotland. We therefore propose to describe our proposed tariff baskets in detail in our *Strategic Review of Charges 2006-10*.

We propose that there should be eight or ten separate tariff basket items:

- domestic unmeasured water;
- domestic unmeasured wastewater;
- non-domestic unmeasured water;
- non-domestic unmeasured wastewater;
- measured water (possibly split 20mm connection and other);
- measured wastewater (possibly split 20mm connection and other);

- surface water drainage (excluding unmeasured domestic); and
- trade effluent.

We believe that it may be worth considering the introduction of two separate tariff baskets to include tariffs (except surface drainage) for customers with a standard metered connection. There are four principal reasons why we consider that this may be worthwhile:

- measured customers with a standard connection are more like households than other measured customers;
- monitoring prices for this group separately should help to ensure that their interests are properly protected in the event that Parliament approves the current Water Services (Scotland) Bill;
- it should be easier to reflect the outcome of the 'Paying for water services' consultation in the tariff basket weightings; and
- the extra tariff baskets should improve the predictability of prices for a large number of smaller businesses.

There are two principal reasons why we should restrict the number of tariff baskets to eight:

- Scottish Water would have less flexibility in managing the expectations of its business customers; and
- greater complexity is introduced to price setting.

On balance we believe that the advantages outweigh the two potential disbenefits.

Treatment of large customers

Larger customers in England and Wales can benefit either from an inset appointment or negotiation on price with their existing supplier. Ofwat considers that pricing arrangements for larger customers could significantly

distort tariff baskets and put at a disadvantage those who can neither benefit from competition nor negotiate.

Excluding large customers from the tariff basket has the effect that shareholders pay for these discounts.

In the public sector model in Scotland, the cost of any discount to one customer has to be paid by all other customers. Special agreements should only be entered into when everyone gains from the agreement. We would therefore propose that special agreements remain in the tariff basket.

Standard customers

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

A customer's bill will vary depending on the relative use of the services provided. For example, the bill for a domestic customer with no meter will be based on the Council Tax band of the property, whereas charges for a business customer with a meter will be based on:

- the size of the water connection;
- the amount of water consumed;
- an assumed size of the waste water connection;
- the assumed amount of waste water discharged; and
- the rateable value of their property (for draining surface water from the property).

The customer's bill will be the sum product of the relevant factors and the appropriate tariffs.

Scottish Water has more than approximately 140,00 non-domestic customers. These customers will each require a quite different mix of services from the water and sewerage undertaker, so the impact of tariff changes will impact on their total bills in different ways.

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

Table 6 shows the standard customer descriptions that we used in the *Strategic Review of Charges 2002-06*. It also shows the proposed new name for these customers for the *Strategic Review of Charges 2006-10*.

Table 6: Standard customers used at the 2002-06 Review

Name in 2002-06 Review	Proposed name for 2006-10	Water		Sewerage		
		Meters	Volume (m ³)	Meters	Volume (m ³)	RV
Newsagent	High Street newsagent	1 x 20 mm	30	1 x 20 mm	28.5	£5,000
Garage	Garage	1 x 20 mm	100	1 x 20 mm	95	£10,000
Restaurant	Large restaurant	1 x 20 mm	500	1 x 20 mm	475	£100,000
Commercial	Large office	1 x 25 mm	900	1 x 25 mm	855	£750,000
Retail	Retail group	2 x 20 mm 20 x 25 mm 1 x 35 mm	4,500	2 x 20 mm 20 x 25 mm 1 x 35 mm	4,275	£1,700,000
Food manufacturer 1	Food manufacturer 1	2 x 25 mm 1 x 80 mm	50,000	2 x 25 mm 1 x 80 mm	47,500	£100,000
Food manufacturer 2	Food manufacturer 2	2 x 25 mm 1 x 50 mm 1 x 100 mm	100,000	2 x 25 mm 1 x 50 mm 1 x 100 mm	95,000	£260,000
Manufacturing	Large manufacturer /pharmaceuticals	1 x 150 mm	175,000	1 x 150 mm	166,250	£1,225,000
Brewers	Brewers	2 x 25 mm 1 x 100 mm 1 x 150 mm	600,000	2 x 25 mm 1 x 100 mm 1 x 150 mm	150,000	£500,000

Unmeasured customers

Our 2001 set of standard customers did not include unmeasured customers who pay according to their rateable value. We therefore propose to include four unmeasured non-domestic customers in our list of standard customers, as shown in Table 7.

Table 7: Proposed additional standard unmeasured non-domestic customers

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

Measured customers

Our review of the customer information provided by Scottish Water suggests that metered customers are reasonably well represented within the existing standard customers. We therefore propose to add only four additional standard customers.

The proposed additions are outlined in Table 8.

Table 8: Proposed additional standard metered customers

Name	Water		Sewerage		
	Meters	Volume (m ³)	Meters	Volume (m ³)	Rateable value
Warehouse	1 x 20mm	10	1 x 20mm	9	£500
Large house	1 x 20mm	110	1 x 20mm	104	Band H
High School	1 x 25mm	2,000	1 x 25mm	1,900	£18,000
Hotel	1 x 50mm	15,000	1 x 50mm	14,250	£75,000

Standard trade effluent customers

It is more difficult to define standard trade effluent customers than it is to define water customers or customers who discharge standard-strength sewage. There are just over 2,000 customers in Scotland who have trade effluent agreements. They range from a small garage to a large petrochemical firm.

The six additional standard customers that we propose are shown in Table 9.

Table 9: Proposed additional standard trade effluent customers

Standard customer name	Volume ??		Load ??		Average Strengths ??	
	Annual	Daily	Total suspended solids	Biological oxygen demand	Total suspended solids	Settled chemical oxygen demand
Bakery	200	0.55	0.5	0.75	575	1600
Clothing manufacturer	12000	32.9	1	1	20	300
Abattoir	90000	246.6	150	250	600	1500
Electronics Business	550000	1507	15	50	10	75
Printers	10000	27.4	5	40	100	2500
Distillery	150000	411.0	7	55	15	200

Method for setting retail and wholesale prices

The proposed competition framework would allow new entrants to obtain a licence to provide retail services to non-domestic customers. These new entrants would be retail specialists who would buy water and sewerage services wholesale from Scottish Water. To determine appropriate wholesale prices we would first need to define the wholesale and retail activities.

Defining the retail and wholesale activities

Wholesale is the selling of goods or services to merchants, usually in large quantities and for resale to consumers. Retail is the selling of goods or services directly to consumers. Our initial view is that retail activities would include all matters relating to:

- retail pricing and tariffs;
- the billing process;
- collection of charges;
- debt follow up and debt management;
- meter reading, customer meter operations and ownership;
- call and correspondence handling;
- responses to customer enquiries, complaints or requests for information;
- key account management;
- liaison with the wholesaler to deal with customer issues; and
- marketing.

Scottish Water currently handles all aspects of the water and sewerage service. Its activities can be represented in a value chain. Retail is a relatively small part of what Scottish Water does.

Figure 4: Scottish Water's value chain

The Bill would require Scottish Water to establish a retail subsidiary. Scottish Water would be required to treat that retail subsidiary no differently from any potential new entrant.

We would expect that new entrants, as focused, specialist retailers, could improve the level of service offered to customers. For example, they could offer customers multiple payment alternatives (in method of payment and frequency), could combine the bills of various locations into one single bill (for multi-site customers), or could offer advice about how to reduce consumption. Further opportunities could exist if the retailer were already providing the customer with another utility service, as they would benefit from economies of scope, and could offer their customers a single bill that covers a number of utility services.

Possible approaches to setting wholesale prices

There are four approaches to setting wholesale charges that we intend to consider:

- the efficient component pricing rule;
- the long run marginal cost approach;
- accounting approaches; and
- comparator approaches.

The efficient component pricing rule

Economists developed the 'Efficient Component Pricing Rule' (ECPR) during the 1980s as a method of setting charges for access to an essential facility. The ECPR applies the concept of 'avoidable costs'. An avoidable cost is the cost that a company no longer has to bear if it ceases to supply a customer.

ECPR was developed to set an access price when the incumbent would provide retail services itself – not to set a wholesale price for an arm's length subsidiary company. The separation of Scottish Water's retail arm is important because otherwise there would be a risk of challenge from new entrants that the retail business [with access to cheap Government borrowing] has an unfair advantage.

The long run marginal cost approach

A second approach to access pricing would be to set the access charge at the 'long run marginal cost' (LRMC) of providing access to the network. The LRMC is a measure of those costs that could arise in the future if demand were to change. There are two potential problems with using LRMC. These are that there is insufficient information on the very long-term investment needs of the water industry in Scotland and the approach does not take account of central overheads. Modifying LRMC to take account of central overheads is possible but is likely to result in the same answer as the accounting approach.

The accounting approach

We would use our proposed regulatory accounts to define the accounting costs of the wholesale and retail businesses. These accounting costs would include all:

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

The comparator approach

We also propose to analyse other network utility industries that have wholesale and retail activities. In both the gas and electricity industries there has been structural separation between the vertical components of the businesses. The monopoly elements of the businesses have been separated from those elements that are subject to competition.

While we recognise that there are differences both in terms of cost structure and in the extent to which the industries have been opened up to competition, we believe that there could be important lessons to be learned. These would include:

- What does a gas retailer do that a water retailer does not?
- What are the costs of the gas retailer?
- Why should the water retailer's costs be different?

Proposed method

We currently favour the accounting approach to determining the wholesale price. In our view this approach is most likely to ensure that a proper balance is struck between the wholesaler and the retailer.

Connection charging regime

Throughout the utility industry, issues have arisen in relation to the allocation of costs for new connections between existing and prospective customers. In Scotland, the mechanism for establishing how costs should be shared between existing and prospective customers is currently being redefined by the Scottish Executive through changes set out in the *Water Environment and Water Services (Scotland) Act*. The outcome of this process will impact on customer charges in the period of the next Strategic Review.

For both existing and new customers, the allocation of the costs associated with new connections needs to be both equitable and transparent. This requires a careful assessment of the impact of connection charging regimes, particularly where network capacity is limited. For the water industry in Scotland, the impact of limitations of the network capacity on new development confirms the need for robust connection charging arrangements to be in place.

Scottish Water's current connection charging policy

For domestic (or household) customers, current legislation⁸ requires Scottish Water to provide a connection to the public network for either new or existing properties, where it is practical to do so at 'reasonable cost'. Scottish Water currently interprets reasonable cost for new households as being a maximum of £1,500 per property, split £1,000 for waste water and £500 for water.

For first-time household water connections, Scottish Water defines the reasonable cost threshold as £500. For first-time household waste water connections, a sliding scale operates based on the Council Tax band of the property, ranging from £1,995 for a Band A house to £5,985 for a Band H.

In effect, the existing customer base funds the contribution towards the cost of connection. The process for establishing the level of the provision is not, however, transparent and appears to have evolved through custom and practice.

For non-domestic (industrial or commercial) customers there is no direct equivalent of the reasonable cost contribution. However, for waste water connections only, Scottish Water currently provides a connection allowance of £23,600 per hectare of land connected.

A number of issues have arisen in relation to Scottish Water's connection charging mechanism, including the following key concerns:

- The cost to customers of the 'reasonable cost' contribution. This is equivalent to almost 2% of a customer's bill;
- The reasoning behind the reasonable cost contribution. In particular, it is not clear why customers, including the vulnerable, should fund the installation of water and waste water services to new houses. This is not consistent with the approach taken in the electricity, gas and telephone industries.

⁸ The Water (Scotland) Act 1980, The Sewerage (Scotland) Act 1968, The Water (Scotland) Act 1980 and the Water Environment and Water Services (Scotland) Act 2003.

- The impact of the connection charging policy on new development. This contribution would appear to increase demand that cannot realistically be met. Moreover, similar problems do not appear to exist to the same extent in other utility models where developers fund a larger proportion of the connection costs.

Our current understanding is that the Scottish Executive proposes to bring forward regulations under the *Water Environment and Water Services (Scotland) Act 2003* by the end of 2005. These regulations will revise the mechanism by which Scottish Water determines reasonable cost for both new development and first time provision. Consequently, these changes will have an impact on the period of the *Strategic Review of Charges 2006-10*.

The Scottish Executive is currently considering whether the introduction of an infrastructure charge (as is levied south of the border) is appropriate in Scotland. This could go some way to financing local network reinforcement work that cannot be attributed to specific development.

Questions for consultation

Chapter 3: An introduction to depreciation

1. Is the proposed approach to depreciation for the *Strategic Review of Charges 2006-10* appropriate? In particular:
2. Is the proposed method of determining asset life, through a five stage classification from 'very short' to 'long', adequate?
3. Is straight line depreciation the most appropriate mechanism for assessing the annual reduction in value of Scottish Water's assets?
4. Does the proposed use of MEA valuation provide a suitable method for estimating the economic value of Scottish Water's assets or would other methods give a better estimation?

Chapter 4: Managing risk in the public sector

5. Do respondents agree that we should extend risk analysis to cover the financial ratio comparisons?
6. Do respondents agree that access to borrowing should require Scottish Water to conform to the same disciplines and control, that apply in the private sector?
7. Do respondents agree that customers should not pay for a failure to meet agreed targets?
8. Are there other factors that we should take into account in minimising the risks to customers both now and in the future?

Chapter 5: How we propose to set prices

9. Do customers agree that the regulatory capital method of price setting will help to facilitate comparisons between the water industry in Scotland and south of the border? If not, what are the alternative methods they would suggest?
10. Do customers agree that it would be better to set a series of price caps rather than the current system of setting a single revenue cap?
11. Are there other actions we should consider to improve the transparency of the price setting process?

Chapter 6: Regulatory accounts and accounting separation

12. Do respondents agree with our proposal to require Scottish Water to submit regulatory accounts?

Chapter 7: Financial modelling

13. Do respondents agree with the financial assumptions that we propose to make?
14. Do respondents agree with our proposal to use the Ofwat ratios as the primary indicator of financial sustainability? If not, which ratios should we use?

Chapter 8: Establishing an initial RCV

15. Do stakeholders agree that there are broadly three ways to establish an initial RCV for Scottish Water?
16. Which method would stakeholders see as the most reliable, and why?

Chapter 9: Allowed Rate of Return

17. Do respondents agree that it would not be appropriate to adopt the rate of return allowed for the private sector water industry south of the border by Ofwat?
18. Do respondents agree that the hybrid approach described above should be used to set the allowed rate of return for Scottish Water? If not, what other method would respondents suggest? In particular how could the suggested method facilitate monitoring and avoid any incentive for any stakeholder to seek to change the ratio of debt to RCV?
19. Do respondents agree that we should make an allowance for embedded debt for this regulatory control period, but only make such allowances in the future if there has been a material change in the rate of inflation?

Chapter 10: Regulatory capital value – treatment of depreciation and additions

20. We would welcome the views of stakeholders on the content of this Chapter. There are no specific consultation questions.

Chapter 11: Interim determinations and logging up and down

21. Do stakeholders believe that there should be a process to adjust prices during a regulatory control period? If so, should we seek to introduce a process for interim determinations?
22. Do stakeholders believe that it is appropriate to adjust prices in the next regulatory control period to

reflect actual outcomes in the previous period? If so, should we seek to introduce a similar process to Ofwat's logging up and down?

23. What factors should trigger an interim determination? At what level of materiality should an interim determination be triggered?
24. Are there other relevant changes in circumstance that we should consider introducing?
25. What is the most effective method for consulting with customers about a potential price change?
26. Would customers prefer the regulator to revised prices downwards during a regulatory period (eg in the event of slow delivery of outputs) even if prices are likely to increase by a greater percentage in the future as a consequence?

Chapter 12: Setting price caps: the role of the tariff basket

27. Do you agree that the proposed approach for the tariff basket items is appropriate for Scotland?
28. Do you agree that we should introduce more tariff baskets than Ofwat?
29. Do you agree that we should establish tariff baskets for metered water and wastewater customers with a standard connection?
30. Do you agree that the proposed method for calculating the weighted average price increase is the most appropriate method to use? If not, which alternative method would be more appropriate and why?

Chapter 13: Standard customers

31. Is a target date of the end of December for announcing tariffs (which will come into effect on 1 April in the following year) acceptable, given that details about tariff baskets and their weightings will be included in the *Strategic Review of Charges 2006-10*?

32. We would like to hear your views on the proposed changes to the standard customers used in the *Strategic Review of Charges 2002-06*. Do you feel that our proposals will make it easier to identify the customer group represented? Are there any other changes you would like to see being made?
33. We would like to hear your views on the proposed additions and changes to the standard customers, as detailed previously. Do you consider that we have achieved broad representation of the customer types? Are there any other customer types that we should add to the lists?
34. Are there any other customer types that are not properly represented in the revised list?
35. Do respondents consider that the criteria that we propose to use in assessing different approaches to setting wholesale prices (ie that the approach should be theoretically sound, practical, consistent with Scottish Executive policy and flexible) are appropriate?
36. What are respondents' views on the ECPR, LRMC, accounting cost and comparator approaches to the setting of wholesale prices?
37. Do respondents agree that the split between wholesale and retail activities should be a notified item?

Chapter 15: Connection charging regime

38. Are there any lessons from England and Wales that you want to propose for application in Scotland?

Section 1: Chapter 1

Introduction

1.1 Introduction

We are committed to the principles of the Better Regulation Task Force: transparency, accountability, proportionality, consistency and targeting. Our approach to the second full Strategic Review of Charges covering the period from 2006-10 takes full account of these principles. It also responds to some of the concerns raised by stakeholders in the last four years.

Our programme of work was described in a recent publication, *Our work in regulating the Scottish water industry: Setting out a clear framework for the Strategic Review of Charges (Volume 1)*. In that document we explained that we intended to publish a detailed description of our approach to the next Strategic Review of Charges in five volumes. Volume 2 covered the background to the next Review and outlined some of the changes in the institutional framework that will impact on the next Review. Volume 2 was published on 16 August 2004.

In this volume (volume 3) we discuss the calculation of prices. For many customers of water and sewerage services, price is the single most important issue. In order that stakeholders can fully understand how prices are calculated, this publication:

- explains the costs that have to be recovered;
- discusses in detail the calculation of prices;
- explains how adjustments to prices are made when circumstances change;
- seeks views on the calculation of wholesale and retail prices; and
- discusses the management of risk in the public sector.

Some of these issues are included because they provide important background information for stakeholders. For other issues we outline our proposals to implement regulatory best practice in Scotland,

explain why we are making these changes now and seek the views of stakeholders on our proposals.

1.2 Where costs are incurred

Rain water may well fall from the sky, but it is clear that turning that raw water into a reliable, high-quality water and sewerage service is a costly and complex operation.

- There are the significant environmental costs of abstracting the water;
- Capital costs associated with the treatment plant and the distribution system are also significant; and
- In addition 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 (eg capital costs and manpower), others are variable (eg energy and chemicals).

Treating water and transporting it through pipes to customers is asset intensive – there are more than 20 metres of water main for every household in Scotland. According to Scottish Water's 2003. Regulatory Return, it would cost some £32 billion to replace all of water industry's assets in Scotland. This is more than £6,000 for every person in Scotland.

Customers, however, are not concerned with how the service is delivered or the assets that are employed. They want a reliable and high quality service to be available on demand. In particular, they want to be assured that the service they receive for the amount they pay represents value for money.

For the money that they pay, customers receive the following main services:

- access to the public water and sewerage network;
- treatment of water and sewerage; and
- customer service and billing.

When a property is connected to the water supply this increases the value of that property. A clear example of this is that land for development that is already connected to the water mains will sell for a higher price than identical land that is not connected. The connection therefore has value in its own right, and the extent of the use of that pipe is a secondary factor. It would seem reasonable, therefore, that a customer who benefits from the service should contribute towards the costs of providing the service.

The same economics apply to the provision of water and sewage treatment facilities. The largest elements of cost are capital investment and manpower. These costs are essentially fixed. Other costs, including power and sludge disposal costs, tend to be variable.

The customer service charge reflects the billing costs, the customer service provided (including call centres, key account managers and customer literature) and, if appropriate, meter operation and reading costs. These costs are relatively fixed in nature, and do not vary significantly according to the customer's water use. (Although costs will clearly be higher in absolute terms for a large customer who merits a more personalised service, in proportion to that customer's total bill they may well be relatively modest.)

1.3 The recovery of costs

The cost of water and sewerage services could potentially be recovered from general taxation or through direct charges to customers. If costs were recovered through general taxation, customers would not receive bills and the services would be 'free at the point of delivery'. The costs of the water and sewerage industry would be met in the same way that the costs of health, education and law services are met.

Customers in Scotland pay for their water and sewerage service through charges. This ensures that there is a visible link between what customers as a whole pay and the services they receive. Customers can observe and understand the cost implications of their demands for more water, better quality water and a more reliable

service. If water and sewerage services were funded through general taxation the impact of customer demands on costs would be less transparent. This is unlikely to be in the general customer interest.

1.4 Structure of this volume

1.4.1 Volume 3 is presented in three sections.

Section 1 outlines the background to tariff setting. It comprises four chapters. Chapter 2 reviews proposals in the Scottish Executive's consultation, 'Paying for water services 2006-10'. It also addresses issues of cross-subsidy between customer groups. Chapter 3 discusses the benefit customers receive from use of the industry's assets is recognised and paid for in charges. It is, therefore, an introduction to depreciation. Chapter 4 discusses managing financial risk within the public sector.

Section 2 describes the process by which prices are fixed and amended if circumstances change. It comprises seven chapters. Chapter 5 outlines the changes that we propose to make to the way in which the resources required by Scottish Water are assessed. These changes include introducing a regulatory capital value and rate of return for Scottish Water.

Chapter 6 describes the introduction of regulatory accounts. Regulatory accounts will play an important role in ensuring that we can monitor and report effectively on Scottish Water's performance.

Chapter 7 discusses the financial model that we will use to determine the revenue that Scottish Water should be allowed to raise through charges. Chapter 8 discusses general issues relating to the introduction of a regulatory capital value and seeks views on how we intend to establish an initial value. In Chapter 9, we consider issues relating to the rate of return that should be allowed to Scottish Water and, again, we seek views on our proposed approach. Chapter 10 covers much of the technical detail that underpins the on-going use of the regulatory capital value approach. In particular, this chapter explains the rolling forward of the regulatory

capital value to reflect the use of existing assets and investment in new assets. In Chapter 11, we outline our proposed approach if circumstances change and Scottish Water needs more or fewer resources. We propose that our approach should be broadly similar to that used by the Office of Water Services (Ofwat).

Section 3 discusses charges and in particular options for setting wholesale prices and proposed changes to the connection charging regime. It contains four chapters. Chapter 12 discusses our proposed approach to the development of a tariff basket for Scotland. In Chapter 13 we describe new 'standardised customers', which we intend to add to those that we used in the *Strategic Review of Charges 2002-06*.

Chapter 14 seeks views on the potential approaches to the calculation of wholesale prices that we have identified. The final chapter, Chapter 15, discusses proposed changes to the connection charging regime.

1.5 Response to consultation

We have identified a number of questions for consultation. These questions are set out at the end of the Executive Summary. All responses to this consultation should be received by 31 October 2004. These should be sent to:

Katherine Russell
Water Industry Commissioner for Scotland
Ochil House
Springkerse Business Park
Stirling FK7 0JX

or by email to:

SRCmethodology@watercommissioner.co.uk

We will publish a summary of responses, and our conclusions on our website

www.watercommissioner.co.uk on 19 November 2004.

Section 1: Chapter 2

The Scottish Executive's consultation *Paying for Water Services 2006-10*

2.1 Introduction

In this chapter we review the Scottish Executive's consultation, *Paying for Water Services 2006-10*, and provide our response. We then outline how this consultation will impact on the *Strategic Review of Charges 2006-10*. We believe that it is important to put discussion of the consultation into context and, therefore, we also briefly revisit the context of the *Strategic Review of Charges 2002-06*, outline the principles that underpinned our advice and recommendations to the Scottish Ministers and then consider the reaction of stakeholders to the implementation of the recommendations included in the last Strategic Review.

2.1.1 Background to the consultation

The Scottish Executive's decision to consult on principles of charging for water arose in response to a number of developments concerning water charging in Scotland.

- In August, 2003 the Water Customer Consultation Panels called for a public consultation on the principles of water charging. This call followed a very negative reaction – largely by the small business community – to the introduction in April 2003 of higher fixed charges for metered customers and of minimum charges for non-metered customers. The small business community also called for an investigation in water charging.
- We were unfortunately unable to reach agreement with Scottish Water on its proposed scheme of charges for 2004-05. We referred the scheme to the Minister for Environment and Rural Affairs, along with our proposed amendments. In our letter to the Minister we suggested that a consultation on the principles of charging could improve understanding about how and why customers pay for water and sewerage services.

The Minister approved our proposed amendments to Scottish Water's scheme of charges. In February, 2004, the Deputy Minister for Environment and Rural Affairs

confirmed his intention to consult on the principles of charging for the water industry in Scotland.

In July 2004, the Minister for Environment and Rural Affairs launched two consultations. These consultations sought the public's views on the quality of future water services, and how customers should pay for those services. The two documents that launched the consultations were:

- *Investing in Water Services 2006-14*, which sought views on the scale and content of Scottish Water's next investment programme; and
- *Paying for Water Services 2006-10*, which sought views on the approach that should be adopted to charging different customer groups for water services.

Stakeholders generally welcomed the launch of the consultations, which will inform the guidance that Ministers are to provide to this Office in January 2005. This guidance will be taken fully into account when we set prices for the next regulatory period.

2.2 The Strategic Review of Charges 2002-06

In our initial interim Strategic Review of Charges, December 1999, we highlighted the fact that customers served by the former North of Scotland Water Authority would face much higher bills than those served by the other two authorities. In 2000, there was a number of calls for the Scottish Executive to intervene and to reduce customers' bills.

The proposal to create Scottish Water offered two principal benefits:

- a potential catalyst for much improved efficiency; and
- the opportunity to harmonise charges across Scotland.

The Minister asked us to provide advice on charges both for the three authorities and for the then proposed Scottish Water. Our analysis showed that customers throughout Scotland would face smaller increases in charges than would otherwise have been necessary and would therefore benefit from the creation of Scottish Water.

The *Strategic Review of Charges 2002-06* contained recommendations that:

- there should be a significant improvement in the efficiency of the water industry in Scotland;
- there should be a move to more broadly cost-reflective charging; and
- that prices should be harmonised throughout Scotland for both domestic and non-domestic customers.

We recognised that there would have to be progress in each of these areas or new entrants could find it easier to cherry-pick customers. The water industry has significant fixed costs. All connected customers make a contribution towards these fixed costs. If a customer leaves the network, for whatever reason, this will increase charges to other customers. If the service is provided inefficiently, larger customers may find it possible to make alternative arrangements for their water and/or effluent service. This would increase bills to other customers.

2.2.1 Need for improved efficiency

We explained in the Review that, as a monopoly, Scottish Water should benefit from economies of scale and scope. However, we expressed concern that inefficiency of the water industry in Scotland could make it seem attractive to opt for an alternative supply arrangement. We pointed out that this could lead to inefficient investment by customers and that it could further increase prices to those customers who remained with the public water supplier.

2.2.2 Harmonisation of charges

In his commissioning letter for the Strategic Review, the Minister said that our advice about charges for Scottish Water should assume harmonisation of tariffs for domestic customers by 2006. Our analysis and consultation with stakeholders, however, suggested that it would be better to harmonise tariffs for all customers. This would bring the Scottish water industry into line with other utilities, which charge a harmonised set of tariffs throughout their principal areas of operation. Without harmonised tariffs for all customers there would have been:

- additional incentives for higher-banded households to switch to a meter;
- understandable concerns from the business community in the North; and
- an increased risk of competition developing whereby a few customers benefit, to the detriment of the majority.

2.2.3 Broadly cost-reflective charging

Many of the costs of providing water and sewerage services are fixed. If the number of customers falls, the unit cost of the service will increase. Remaining customers will have to pay more as a consequence. We explained this in some detail in the *Strategic Review of Charges 2002-06*:

“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; and
- Prices are equal to costs.

The largest customer therefore pays 50% of the £18 million fixed cost and 50% of the £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 have 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.”¹

2.2.4 Impact on customers

We explained that the existing tariff arrangements in each of the three water authorities were very different and that the impact of a move to harmonised and more broadly cost-reflective charges could have differing impacts for similar customers in each of the three areas. To illustrate the impact of such a move we developed a range of ‘standardised’ customers. We showed the impact of tariff changes on these customers in each of the former authority areas.

In this current Review, we propose to increase the number of standardised customers to ensure that we can illustrate the likely impact of tariff changes on the smallest business customers and on customers who are charged by their rateable value. This is discussed in more detail in Chapter 13.

2.2.5 Implementation of harmonisation and more broadly cost-reflective charges

The harmonisation of charges for non-domestic customers began in April 2002. The three water authorities worked with the Scottish Water transition team to identify relatively modest changes in tariffs that would bring the charging regimes used by the previous water authorities more into line with each other. These changes included the following:

- The North and West of Scotland Water Authorities increased standing charges for metered water customers considerably. West of Scotland Water Authority also increased standing charges for sewerage, but North of Scotland Water Authority did not introduce any standing charge for sewerage. These changes were consistent with the principles accepted by Scottish Ministers in their response to the Strategic Review of Charges. East of Scotland Water Authority had relatively higher standing charges for metered customers.

¹ *Strategic Review of Charges 2002-06*, pages 40-41.

- East of Scotland Water Authority had previously offered lower standing charges to those customers who were judged by the authority to use less water. These customers were charged on the basis of ‘virtual meters’ – the size of the actual meter or connection was set aside. This policy was not consistent with the recommended move to more broadly cost-reflective charging. The authority introduced a minimum meter size of 20mm. As a result, there were significant increases in the standing charge for all of those customers who had previously benefited from a virtual meter. This had an impact on all of the authority’s non-domestic customers.
- Each of the three water authorities made changes to bring their volumetric charges for water more into line with each other. East and West of Scotland Water Authorities increased their price per cubic meter of water. There was a small reduction by North of Scotland Water Authority.
- Each of the three authorities also made moves to bring their charging for sewerage and drainage more into line with each other. Each authority had had a different balance between its charges for foul water and drainage. West of Scotland Water Authority increased the volumetric charge for foul water and reduced the charge for surface drainage. The main change for customers in the area served by North of Scotland Water Authority was a reduction in the surface drainage charge. Customers of East of Scotland Water Authority saw the price per cubic meter of waste water decrease and the price for surface water drainage increase.

The method of calculating prices for customers who paid by rateable value in the areas served by the former West and North of Scotland Water Authorities did not change.

In its scheme of charges for 2003-04, Scottish Water proposed to introduce a sewerage standing charge and a minimum charge for rateable value customers. It was

also clear from our discussions with Scottish Water and our analysis of the impact of various tariff changes on customers that it would be better to harmonise charges for non-domestic customers immediately.

There was no method to harmonise charges that would not impact adversely on some customer groups. Phasing harmonisation would have required those customers who had paid more previously to continue to pay more, yet even in this case the increases (in percentage terms) for some customers were likely to be significant.

We approved the proposed 2003-04 scheme of charges because it was in line with our advice and recommendations to Ministers in November 2001. Our view remains that customers should pay tariffs that broadly reflect the costs of the service they receive. We understand that the Scottish Executive may want to provide support to particular groups of customers, but in the absence of any clear guidance to the contrary, we do not believe that our remit allows us to favour one group of customers to the detriment of any other.

2.3 Response to implementation of the recommendations contained in the Strategic Review of Charges 2002-06.

The combined effects of the harmonisation of charges, and the introduction of higher standing charges and of a minimum charge for customers charged on the basis of their rateable value had different impacts on customers in each of the three former authority areas.

The following table illustrates the impact on customers:

Table 2.1: Impact of harmonisation and broadly cost reflective charging by water authority area.

	East	North	West
Standing Charges	-	++	+
Volumetric Charges	+	--	+
Surface water drainage	++	--	-

- = reduction
-- = big reduction
+ = increase
++ = big increase

Percentage increases in bills for some customers were very large, although the actual cash impacts were rather more modest. For example, the maximum increase for a small business customer who paid on a rateable value basis was £270. It should also be recognised that some businesses were still paying less than households for an identical service.

There was a large number of complaints from the small business community about the changes in tariffs. The issue received considerable media coverage and was debated by the Scottish Parliament. Perhaps not surprisingly, approximately 20% of non-domestic customers who benefited from the changes in tariffs did not comment publicly about the benefit they had received.

The small business community called for a parliamentary investigation into water charges. A report from the Water Customer Consultation Panels also called for a public debate on the principles of water charging. The Finance Committee of the Scottish Parliament decided to hold an inquiry into the water industry. We discussed the inquiry, and our response to it, in Volume 2, Chapter 8.

The Scottish Executive responded to these calls by committing to a consultation on the principles of water charging.

2.4 The Scottish Executive's consultation *Paying for Water Services 2006-10*

Paying for Water Services 2006-10 sets out the Scottish Executive's views on the principles that should underpin charging and the application of those principles. It invites respondents to express their views on the Executive's proposals and to make alternative proposals where they disagree with what has been suggested. Views expressed by customers and other interested parties will be taken into account in determining how Scottish Water will be funded between 2006 and 2010 and in establishing the principles of charging for the same period.

The Executive's proposals are contained in two sections of the consultation, 'Proposed principles of charging' and 'Application of principles', each of which are outlined below.

2.4.1 Proposed principles of charging

The Scottish Executive's consultation makes proposals on the principles of charging in four areas:

- Charging for services – should Scottish Water be funded out of general taxation or through customer charges?
- Harmonised charges – should prices reflect regional or local cost differences or should they be the same across the country?
- Cost reflectivity – to what extent should charges reflect costs?
- Making changes to charging structures – how quickly should any changes to charges be made?

Charging for services

The Scottish Executive believes that costs should be recovered from charges to customers, rather than through general taxation. It recognises that water and sewerage services have a public service element. The public service element arises because water and sewerage services help to safeguard public health and the environment, and support social and economic development.

However, the Scottish Executive argues that for business customers water is a resource like any other, and businesses should pay for it as they do for other services. Household customers benefit from a water and sewerage service in much the same way as other utility services and should therefore pay for their use of the service. It suggests, however, that the approach to charging for water and sewerage services needs to ensure that the service is affordable to low-income

groups. The Scottish Executive considers that this is important to protecting public health and promoting social inclusion.

Harmonised charges

The Scottish Executive believes that charges should be the same for similar customers, regardless of their location in Scotland. The Executive believes that, since Scottish Water provides services on a national basis, it is right that customers should pay for those services on a consistent basis throughout the country.

The consultation recognises the risk, particularly in the context of competition developing in the provision of water services, that customers who cost the least to serve will seek charges that reflect those lower costs. Those customers who cost more to serve would be left paying charges that reflected the higher costs. In order to prevent this situation, the Executive proposes that, should Parliament decide to introduce retail competition, all of Scottish Water's charges, including its wholesale charges, should be set on a harmonised basis.

Cost reflectivity

The Scottish Executive believes that charges paid by groups of similar customers should, as closely as possible, match the costs of providing services to them. There are two aspects to this cost reflectivity:

- Charges for a particular group of customers should be set to reflect the costs (across the whole country) of delivering service to that group.
- The fixed component of charges (ie the annual charge) should recover costs that are 'fixed' for Scottish Water (ie costs that do not increase with increasing consumption by customers). The variable component of charges (ie the charge that varies with consumption) should recover those costs that vary with the volumes of water supplied or waste water removed.

The Scottish Executive clearly outlines that the achievement of affordable charges for low-income households and the harmonisation of charges mean that some degree of cross subsidy between groups of customers is inevitable. It proposes that the principles of affordability and harmonisation should take precedence over the principle of cost reflectivity.

Making changes to charging structures

The Scottish Executive recognises that adopting the principles of charging proposed in the consultation may mean that a number of customers face a significant increase in their bills. The Executive recognises that some customers were distressed by the sudden and unexpected change in their water and sewerage bill when charges were harmonised. It therefore proposes that significant changes in the charges for any particular customer group should be introduced gradually, over a number of years.

2.4.2 Application of principles

Paying for Water Services 2006-10 also considers how the underlying principles outlined in the consultation might be applied in particular cases. It raises a number of specific issues.

Cross subsidies

A cross subsidy will exist when one group of customers pays more than the cost of supply and a second group of customers pays less. The 'additional' revenue collected from the group of customers that pay more than their cost of supply is used to meet the difference between the cost of supplying the second group of customers and the price they pay for the service.

The Scottish Executive highlights what it sees as a number of potentially desirable cross subsidies. These would include harmonisation of charges across the country and the link to Council Tax bands for domestic charges. This means that higher banded households

pay more than lower banded households even if they happen to live in an area that is relatively cheap to supply. Harmonisation and the link to Council Tax bands is likely to most benefit those customers who live in low-banded properties in rural areas.

The Executive explains in some detail that it has commissioned work to understand the extent of cross subsidies that exist between households and non-domestic customers and within the non-domestic sector. It points out the difference between the domestic/non-domestic revenue split in Scotland and in England and Wales. The Executive points out that in Scotland domestic customers contribute some 63% of the total revenue of Scottish Water, while domestic customers south of the border contribute between 66% and 79% of the total revenue of their local supplier. The Executive suggests that any significant cross subsidy may not be sustainable in the long term and that it may be appropriate to unwind any such cross subsidy over time.

Unlike the domestic sector, there is only one obvious example of cross subsidy that benefits non-domestic customers. This is the benefit provided to a number of charitable organisations whose total income is less than £50,000 a year. Other customers meet the costs of providing this benefit through modestly higher charges. The consultation explains, however, that only higher banded households and businesses are contributing to the cost of this benefit since lower banded households are already paying less than the cost of their supply.

In general, the Scottish Executive is seeking views on whether existing subsidies should be retained or gradually unwound. Unwinding cross subsidies would ensure that all customers pay charges that are more broadly reflective of the costs of serving them. However, for those who previously benefited from subsidies, their removal could lead to significant increases in charges. The Scottish Executive therefore proposes that, if cross subsidies are to be unwound, the following principles will apply:

- If cross subsidies are significant, these should be unwound over a period of years, to avoid sudden

sharp increases in charges for those customers who are currently benefiting from subsidies; and

- The implications of unwinding cross subsidies for different customer groups should be made clear in advance, so that there is no uncertainty about how charges will change in the coming years.

Household charging

Local authorities continue to carry out billing functions on behalf of Scottish Water for the majority of households (those without water meters). Local authorities collect water charges along with the Council Tax on a single bill.

The consultation highlights that the discounts that are available for Council Tax purposes also apply to water charges. The two most significant discounts are the single occupancy and second home discounts.

The Scottish Executive explains that the 50% discount that is currently available to owners of second homes is difficult to justify. This is because of the fixed-cost nature of the industry. Additionally, the Executive indicates that it is inappropriate for owners of second homes to pay "half of what a couple on benefits in a neighbouring property will pay for the service".

The Executive is aware that the 25% discount offered to single person households provides assistance to many vulnerable households (eg pensioners living alone and single parents). It is concerned, however, that the application of this discount may not be particularly well targeted. The sole criterion to qualify for the single person discount is single adult occupancy of the property. This means that well-off individuals living alone will receive the 25% discount, whereas a couple who are receiving benefits will not. The Scottish Executive therefore proposes that the 25% discount for single occupancy is abolished.

The Executive believes that the current cost of these discounts is approximately £75 million a year. It suggests that abolishing these discounts would allow these

resources to be used to provide better targeted discounts for low-income households.

Non-household charging

Non-domestic customers may be metered or unmetered. Non-domestic customers who are not metered pay for their water and sewerage service according to the rateable value of their property. Non-domestic customers who are metered still pay for property and roads drainage according to their rateable value.

The Scottish Executive suggests that charging on this basis is likely to mean that the charges paid by customers may not reflect their costs of supply. It makes the following proposals.

- Property drainage: The Executive proposes that the costs associated with collecting and treating water that drains from properties would be better reflected if charges were based on the surface area of each property. It proposes to ensure that this is manageable by establishing a restricted number of area 'bands' (perhaps eight to ten bands). Each property would be allocated to one of these bands, and charged on that basis;
- Roads drainage: The Executive also proposes that the costs associated with collecting and treating water that drains from public roads and footpaths, etc should be collected on the basis of the property drainage area band to which each property has been allocated; and
- Unmeasured water/waste water supplies: The Executive invites comments on whether non-domestic customers without water meters should continue to be charged on the basis of rateable value. It also seeks views on the following alternatives:
 - Metering all non-domestic properties: The consultation points out that this would be an

expensive option as meters are costly to install and maintain; and

- Charging on the basis of assumed consumption: The consultation proposes to ensure that implementing such a proposal is transparent by allocating customers to one of three consumption bands.

The balance between charging and borrowing

The consultation discusses the appropriate balance between costs recovered from customer charges and those met by borrowing. It makes it clear that any such new borrowing counts as public expenditure and may impact on other policy priorities of the Scottish Executive. The Executive makes two proposals on the balance between borrowing and charges:

- Scottish Water should not borrow to meet current costs; and
- Scottish Water should fund only a proportion of its new capital investment through debt. The Executive argues that to fund all enhancements to the asset base from debt may result in lower price increases in the short term but that this would cause prices to have to rise continually above the rate of inflation in the medium to longer term. This is because there is likely to be a need for substantial enhancements to the asset base for many years to come.

Funding expansion of the public networks

The last issue dealt with in *Paying for Water Services 2006-10* is how to meet the costs of increasing network capacity. Local authorities and developers have recently become increasingly concerned about the lack of capacity on public water and sewerage networks in particular areas. They believe that this is constraining development in those areas.

One option would be to set customer charges at a level to cover all of the costs of providing new capacity on the network. This means that existing customers would meet the costs of connecting new customers to the network. The Scottish Executive believes that this would be at odds with the principle that customers as a whole should meet the costs of the service provided to them.

The Executive proposes that the costs of network expansion should be shared between new and existing customers. The consultation proposes that existing customers should meet the costs of maintaining the networks at existing capacity and meeting the quality standards set at the conclusion of the *Quality and Standards III* process.

The Executive further proposes that existing customers should pay for the expansion of Scottish Water's strategic capacity. Development of new reservoirs and treatment works would fall into this category, as these long-term assets are needed to secure future services for existing customers. It would also be both difficult and undesirable to attribute the need for such expansion to any single development proposal.

The Executive proposes that where expenditure is required to provide additional capacity for a specific development, the developer should meet these costs. This might mean that the developer is required to provide improved local distribution networks, service reservoirs or pumping stations.

The Executive suggests that this proposal strikes an appropriate balance between the interests of new and existing customers.

2.5 Our response to the consultation

Our response to *Paying for Water Services 2006-10* follows the same structure as the consultation document.

2.5.1 The Scottish Executive's proposed principles of charging

We agree with the principles of charging proposed by the Scottish Executive. It is encouraging that the first three of these principles are fully consistent with the principles that we applied at the time of the last Strategic Review of Charges.

Charging for services

We are pleased that the Scottish Executive shares our view that recovering Scottish Water's costs through charges is likely to lead to a better value for money service. We believe that there are two reasons for this.

Our view is that charging customers directly for water services is the best way to ensure that they understand the costs involved in delivering those services to them. Customers who pay for services directly and are aware of the cost will be more inclined to apply pressure on Scottish Water to reduce costs. We consider that ongoing pressure from customers provides an additional incentive for the industry to achieve cost reductions. Customers are also likely to be more realistic about the improvements in service they want to see if the costs of proposed improvements impact directly on their bills.

Collecting the costs of a water service through taxation may have the benefit of protecting vulnerable customers and reducing the number of connected properties that do not make any contribution towards these costs. However, we believe that it is possible to target assistance within a charging regime and that this may actually improve the efficiency of collection.

Harmonised charges

We agree that it is appropriate for similar customers to pay similar charges, regardless of where they are located in Scotland. This is consistent with the pricing policies of the privatised utilities in their local areas.

Cost reflectivity

We explained the importance of cost-reflective charging earlier in this chapter.

There are, of course, limits on the potential for strict cost reflectivity. 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. Scotland (and even England, where the industry is privatised) is 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.

Making changes to charging structures

There is no easy way to make changes to charging structures. It is understandable that customers who face higher bills might object, while customers who benefit are likely to regard the changes as being long overdue. It is important to recognise that unwinding cross subsidies over time or phasing the removal of discounts can only be achieved if other customers can be persuaded that they should pay more in the interim. The costs of phasing have to be met by other customers.

We believe that it is desirable to avoid sudden increases in bills. One possible alternative to phasing could be to provide significant advance warning that a change in the structure of tariffs will be implemented.

Our remit is to promote the interests of all customers and it is difficult to reconcile this duty with our having to make decisions about whether or not to phase changes in the structure of tariffs. We would very much welcome guidance from Scottish Ministers on how to handle such changes in the structure of tariffs. This seems to us to be essentially a political question.

2.5.2 The Scottish Executive's proposed application of the principles of charging

The proposed application of the principles of charging would appear to be economically sound. It will be vital that we receive clear guidance from Ministers on the outcome of the consultation in this regard in January 2005, so that this guidance can be taken into account when we set prices.

Cross subsidies

It is appropriate that the Scottish Executive should be responsible for taking the decisions about which, if any, customers should benefit from cross subsidies.

We would, however, highlight our analysis of the problem of the affordability of water charges for many households. It would seem likely that a properly targeted scheme could not only help some households to contribute towards the cost of the service they receive, but could also allow those who choose not to pay to be pursued more rigorously. This may reduce the burden of non-payment on other customers.

Household charging

Our analysis of water and sewerage undertakers' costs shows that a significant proportion of these costs are fixed and do not change in line with the volume of water used. There is therefore no obvious economic rationale for the discounts that are currently given to single person households and second homes. It is highly unlikely that single adult occupancy would reduce costs by 25% and the part-time use of a property will certainly not reduce the cost of supply by 50%. We recognise that the existence of such discounts is a matter for the Government, but from an economic perspective we would agree that there is likely to be a better way to target support to vulnerable households than the current system of discounts.

It will, of course, be important to ensure that any alternative mechanism to support vulnerable customers is introduced in parallel with the removal of the single person discount.

Non-household charging

Property drainage: Our analysis would suggest that charging for property drainage relative to its surface area is likely to be more cost reflective. We also agree that the use of 'area bands' would simplify implementation.

The implementation of the area bands may be costly and there may be a risk that customers could seek to position themselves in a lower band in order to try to reduce their bill. Scottish Water should have some form of power to recover unpaid charges (and interest) in the event that a customer does not accurately report their area band.

Roads drainage: There are clear advantages from linking charges associated with roads drainage to property drainage charges. It is not clear, however, that this would be more cost reflective. It will be important that all customers contribute towards the cost of roads drainage, even if their property does not drain to the sewer. Scottish Water would therefore need to collect information about the surface areas of properties that do not drain to sewer.

Unmeasured consumption: It will be important that the level of a small user tariff reflects the full cost of providing a connection (irrespective of the extent of usage). We agree that the system should be as straightforward as possible and would therefore support the proposal to establish only three charging bands. Analysis of the customer base would suggest that there are a number of unmetered customers who are likely to consume significant amounts of water (eg food processing businesses). It is therefore useful that the Scottish Executive proposes to introduce this change only in 2010, as this will ensure that Scottish Water has sufficient time to identify all of the customers that it is appropriate to meter.

Balance between charging and borrowing

We agree with the principles that the Scottish Executive outlined in the consultation. It is clearly not appropriate to borrow to fund current costs.

It is more difficult to establish an appropriate level of borrowing. We agree that borrowing 100% of enhancements to the asset base could lead to significant increases in future prices. We would also have concerns about the financial sustainability of the water industry if it were to borrow 100% of the value of enhancements to the asset base. There would be a risk that the industry could only respond to an operational or legislative shock by an immediate increase in prices. It would also be inappropriate to borrow 100% of the cost of enhancements if the enhancements were not delivered at benchmark efficiency. There is no reason why future customers should contribute towards current inefficiency.

In an asset-intensive utility business, it is important that sufficient resources are allocated to maintaining the assets. It is therefore appropriate that the infrastructure renewals charge should increase in line with inflation to reflect the increased replacement value of the assets. Allowing debt to increase in line with inflation appears to be a sensible option.

We believe that our proposed use of the regulatory capital value method of price setting is fully consistent with the proposals outlined in the consultation. The method is described in Chapter 5.

Funding expansion of public networks

It is important that new customers who join the network make an appropriate contribution to the costs of the service they are to receive. They should not expect existing customers to meet the costs of growth in the network. The charge for joining the network should provide a signal to potential customers about where the costs of joining are high and where they are low. This should ensure that developers will take connection costs into account in prioritising their choice of projects.

2.6 Impact of the consultation on the Strategic Review of Charges 2006-10

The Scottish Executive's consultation *Paying for Water Services* is an important step forward. It raises a number of issues that relate to social and economic policy and seeks views from stakeholders. These are not questions for economic regulation – even if they do have consequences for the level of prices. Non-payment of water charges is an example of such issues. It is clear that issues of affordability of water charges for some customers is leading to non-payment. It would also appear that some customers are able to avoid paying because it can be difficult to make a distinction between those who can and those who cannot afford to pay for their water service. Non-payment increases bills to all other customers.

We welcome the clarity that will come from the Scottish Executive's comments on the responses to the consultation. These will be included in the guidance that we expect to receive from Scottish Ministers in January 2005. We will seek to take full account of this guidance in completing the *Strategic Review of Charges 2006-10*.

In particular, we will use the guidance to finalise our work on tariff baskets. This will ensure that calculating prices to customers is as transparent as possible.

Section 1: Chapter 3

An introduction to depreciation

3.1 Introduction

In Chapter 1, we noted the size and scale of the Scottish water industry. According to Scottish Water's regulatory return in 2003, the replacement cost of our water and sewerage assets is some £32 billion. Clearly, these assets will not all need to be replaced at the same time. Effective asset management can ensure that investment in replacing assets is well targeted.

We must, however, recognise that the effectiveness and value of assets does decline over time, and that this is a cost that should be borne by customers as they receive the benefit from use of the assets. We seek to ensure that the full cost of this benefit is recognised and paid for in charges. The mechanism through which this happens is the depreciation charge.

The water and sewerage industry has two broad types of asset. These are termed infrastructure (essentially the water mains and sewers) and non-infrastructure (treatment plants, offices, vans, computers etc).

3.2 The importance of depreciation

It is important that Scottish Water's depreciation policy reflects the diminishing value of the assets as they wear out. This allows the actual cost of asset use during the year to be reported in Scottish Water's statutory and regulatory accounts. This enables Scottish Water to measure and report its operational performance correctly. An accurate understanding of the cost of asset use is therefore vital to effective price setting.

If an asset costs £10 million and is expected to last for ten years, the annual cost could be said to be £1 million per year. It would be appropriate for customers to contribute £1 million per year through their charges. However, if the asset lasts eight years, the cost will not have been fully recovered from those who received the benefit. Future customers will face both the cost of a new asset and the £2 million of unrecovered cost from the now obsolete asset.

In contrast, if the asset were to last 15 years, future customers (after Year 10) would benefit from the use of an asset that had already been fully paid for.

From a regulatory point of view, therefore, the depreciation policy of the water and sewerage business has to strike a balance between current and future customers. Theoretically the method used to assess depreciation could influence this balance. For example, in determining an appropriate depreciation charge, a company has to assess:

- how long an asset will last (its useful life);
- how depreciation of the asset is calculated; and
- the economic value of the asset.

For the same asset value and same estimated useful life, the annual depreciation costs derived by different depreciation methods can also vary significantly.

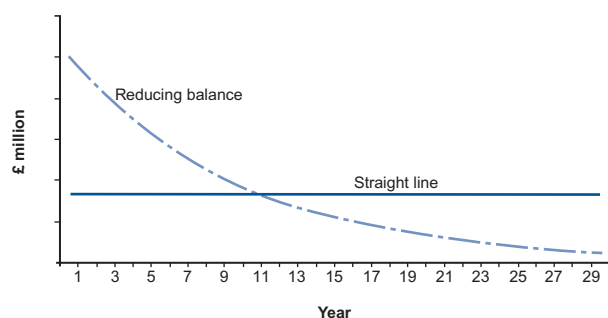
By way of illustration, we can assess the impact on annual costs using two different depreciation methods for an asset that is valued at £100 million and is expected to have a useful life of 30 years.

In the example we use:

- the 'straight line' depreciation method, which spreads the costs of using the asset evenly throughout its life; and
- the 'reducing balance' depreciation method, which assumes that the cost of use is higher in the initial years of the asset life.

The impact on the annual cost of use is illustrated in Figure 3.1. The dotted curve represents the annual depreciation charge of the asset using the reducing balance depreciation method, while the solid line represents the annual depreciation charge using the straight-line depreciation method.

Figure 3.1: Example illustrating the straight line and reducing balance depreciation methods



There is clearly a significant difference in the annual cost of use for this single asset using the two different methods. The cost of use in the first year is regarded as more than three times higher in the reducing balance method of depreciation than in the straight line method.

The water and sewerage industry has very many assets, and new assets are being built each year. The range of asset types and ages will tend to smooth out the impact of the choice of depreciation method. This is known as the portfolio effect. For example, if the water services provider had 30 of the treatment works in the example and one had been built each year, the annual cost of use (or depreciation charge) would have been the same whether the company had chosen to use the straight line or the declining balance depreciation methods.

Since Scottish Water has nearly 400 water treatment works and 1,900 waste water treatment works, the portfolio effect should minimise the risk that the method of depreciation chosen for an individual asset might have a significant impact on the total depreciation charge for Scottish Water. As this is the case, regulators can concern themselves principally about estimates of useful life and the value of assets.

3.3 Infrastructure renewals accounting

Assessing the annual cost of use of the infrastructure is more problematic. This is because infrastructure assets such as sewers and water mains usually have very long lives and these lives are particularly difficult to assess accurately. Moreover, there are plastic, cast iron and

asbestos water pipes and the type of construction determines the useful life of the water main. The position is further complicated by the fact that these different types of construction are interconnected throughout the network. The result is that even in a single area there will be a range of newer and older pipes, a range of construction materials and a range of ground conditions. It is therefore not realistic or meaningful to assess an average life. For that reason we rely on the portfolio effect and treat the whole infrastructure network as a single system. The complete asset will never become obsolete or require replacement at any one time; instead, it is replaced in parts as different elements come to the end of their useful lives.

Traditional methods of depreciation, therefore, do not work. This issue has been recognised by the water and sewerage industry for some time. To overcome the problem, the industry has introduced infrastructure renewals accounting.

Under infrastructure renewals accounting, an infrastructure renewal charge is charged to a company's revenue each year. The infrastructure renewal charge is calculated as the average of the forecast capital expenditure on the infrastructure assets required to maintain the infrastructure assets in perpetuity without any loss of value over the coming 15 to 20 years.

When setting the price limit for Scottish Water, we will include the infrastructure renewal charge. The annual infrastructure renewal charge eliminates the need for prices to vary in line with the actual spending on infrastructure in any particular year.

3.4 Assessing the depreciation charge

Establishing the appropriate depreciation charge for an asset involves three critical elements:

1. **Estimating the asset's useful life.** This is the expected number of years that an asset will last. The estimated useful life of an asset in the water industry can range from a few years to several decades.

Determining the estimated useful life of an asset is not an exact science and is often based on an engineering judgement. Most organisations are able to draw on benchmarks from within their own industries and this provides a degree of consistency.

Scottish Water's assets are classified into five categories for the purposes of depreciation:

- very short (assets having a life of up to five years);
 - short (assets having a life of six to 15 years);
 - medium (assets having a life of 16 to 30 years);
 - medium/long (assets having a life of 31 to 50 years); and
 - long (assets having a life exceeding 50 years).
- A similar classification is used by Ofwat and the companies in England and Wales.

2. **Depreciation method.** The most commonly used depreciation methods, straight line and reducing balance, have been outlined above. The depreciation method chosen should be able to simulate the pattern of 'economic consumption' of the asset. This pattern is not always obvious. In the example of a typical car, it is generally understood that depreciation is very high in the initial years, levels off in the middle years then falls again as it nears the end of its life. The pattern of depreciation is more difficult to assess if the extent of use of the asset can materially affect its lifespan in years.

The actual economic value consumed in each year of an asset's life in the water industry is, as we have discussed, difficult to determine. However, the UK's Accounting Standards Board notes that the straight line depreciation method should be used when the pattern of consumption of the economic benefit of an asset is uncertain¹.

We understand that all water companies in Britain, including Scottish Water, are currently using straight line depreciation.

3. **Asset valuation.** There are two principal ways to value a fixed asset – current cost valuation and historical cost valuation. Current cost keeps revaluing the asset to take account of the current price of replacing the asset. Historical cost simply considers the acquisition cost of the asset to be its value throughout its life. The method chosen has a significant impact when assessing depreciation. A number of important factors should be considered when choosing between the two methods, and we discuss them in detail next.

3.5 Current cost accounting

In 1986, the Byatt Report² suggested that current cost accounting should be used to measure the economic costs of nationalised industries. The economic value to customers of a service provided by assets in the utility sector (with their extended lives) would be more accurately captured using current cost accounting. The fixed assets of the privatised utilities are generally reported on a current cost accounting basis in their regulatory accounts.

Although historic cost accounting is the most widely used approach in business, we do not consider that it is appropriate to price setting in the water industry. We agree with the Byatt Report that it would tend to understate, possibly significantly, the cost of replacing assets. This could mean that future customers are unduly penalised.

There is no single definition of the term 'current cost accounting'. However, it principally involves establishing the current value of the asset to the business. The current value of the asset to the business can be obtained through one of the following three ways:

- the modern equivalent asset value ('MEA value');

¹ Financial Reporting Standard 15.

² Byatt Report: *Accounting for Economic Costs and Charging prices* - Report published by HMSO in 1986

- the net realisable value of the fixed asset ('NRV'); or
- indexation.

Usually, the MEA value and NRV of an asset are compared and the higher value is taken to be the current value of the asset.

3.5.1 MEA valuation

Ofwat defines the gross MEA value as representing the cost to replace an old asset with a technically up-to-date new asset with the same service capability, allowing for any difference both in the quality of the output and in operating costs. Net MEA value is the gross MEA value net of accumulated depreciation³.

MEA valuation is most suited for industries that use long-lived assets where the technology behind these assets is steadily evolving. In such industries, using the acquisition cost of the asset could inflate its value as, through time, technology advancements will provide lower cost and higher quality solutions.

3.5.2 Net realisable value (NRV)

If the proceeds obtained through disposing of the asset is higher than the MEA value, the NRV should be used to value the asset. This is because disposing of the asset could realise a higher value than retaining it. In the vast majority of cases, the MEA value will be higher than the NRV for operational assets.

3.5.3 Indexation

Indexation is another way to align the value of the asset to its current value. Under an indexation approach, a price index which is believed to simulate the price trend of the asset is used to obtain a current value. This approach differs from MEA valuation as it is linked to the historical cost of the asset.

In practice, it can be difficult to determine a suitable index. As the assets of a water company, such as reservoirs, pipes and treatment plant are very specific to

the industry, the price trend may be very different to global indexes such as the retail price index (RPI). More specific indexes, such as the cost of construction goods, may more accurately reflect the trend in industry prices but can be heavily influenced by price trends in other sectors such as the housing market.

More importantly, indexation cannot take the impact of innovation into account. This is likely to result in an inflated asset value. The result would be an inflated depreciation charge and increased prices for customers.

3.6 Valuing Scottish Water's assets for the purposes of depreciation

We have discussed two alternative approaches to asset valuation:

- current cost accounting using MEA valuation, and
- current cost accounting using indexation.

We believe that current cost accounting using the MEA valuation for a fixed asset (or NRV in the case that the asset's NRV is higher than its MEA value) is the most appropriate for regulatory purposes. This approach ensures that:

- customers bear reasonable costs for the assets,
- Scottish Water is fairly remunerated for its capital expenditure; and
- Scottish Water is provided with the incentive to invest in new technology and more cost-effective assets.

We recognise that MEA valuation involves a higher degree of subjectivity than either historical cost accounting or indexation. Nevertheless, the MEA approach appears to provide a far more realistic, and forward-looking estimate of asset value.

³ Ofwat, RAG 1.03, published January 2003.

We also consider that the current methodology for assessing the useful life of assets, involving classifying them into one of five different categories, remains appropriate.

With regard to the method of depreciation, our proposed methodology for the forthcoming Strategic Review of Charges is to retain the existing straight line depreciation approach. This approach is:

- consistent with Ofwat's approach in England and Wales;
- appropriate for long life assets; and
- consistent with Accounting Standard FRS15, which states that, when the pattern of consumption of economic benefits is uncertain, the straight line method should be adopted.

3.7 Alternative methods of depreciation

We have reviewed other potential methods of depreciation. In a consultation paper in March 2002⁴, Ofwat outlined three alternative approaches to depreciation, namely:

- the renewals accounting approach;
- the economic depreciation approach; and
- basing the depreciation charge on the regulatory capital value (RCV).

3.7.1 Renewals accounting approach

It would be possible to introduce a renewal charge, similar to the infrastructure renewal charge for non-infrastructure assets. The Office of the Rail Regulator (ORR) adopts such an approach. The rail regulator adopted a pay-as-you-go approach to renewal expenditure when it reviewed Railtrack's access charges. This means that Railtrack does not need to assess the value of its asset base for the purpose of calculating depreciation.

Instead, it makes an accounting charge based (as with the water industry's infrastructure) on projected future capital expenditure. This is included in the track access charge calculation. In this way, the capital expenditure projected by ORR forms part of the revenue requirement and customers pay for actual expenditure. Under this approach, the RCV remains constant unless the rail network is enhanced or reduced.

Ofwat considered that such an approach would be undesirable for the water industry for the following reasons:

- It deviates from the practice in statutory accounting. As a result, the water companies' regulatory accounts would diverge further from their statutory accounts; and
- The network maintenance expenditure in the water industry fluctuates significantly. By applying a pay-as-you-go approach, customers' bills could be subject to greater volatility. In order to rectify the volatility caused by the pay-as-you-go approach, it would be possible to use a periodic average, although it could be difficult to choose an appropriate period.

We agree with Ofwat's concerns. We would also add that a renewals accounting approach might encourage Scottish Water to be less pro-active in managing its assets.

3.7.2 Economic depreciation approach

Economic depreciation is the present value of the change in economic value (cash flow generated) of an asset from one period to the next. This change provides a measure of asset consumption.

Economic depreciation is similar to the methodology used in some production industries. In these industries, the total number of units that a machine can produce over its lifetime is estimated. The machine is then depreciated according to the number of units produced in each accounting period. Both economic depreciation

⁴ Ofwat (March 2002), 'The approach to depreciation for the periodic review 2004 – A consultation paper'.

and production unit depreciation assume that the decline in value of an asset is proportional to its output or cash flow generated. However, unlike production unit depreciation, economic depreciation is very difficult to calculate accurately. While it would be theoretically desirable, the difficulty of measuring economic depreciation has to count heavily against its use in practice.

We do, however, need to ensure that the depreciation charge is not wholly at variance with the economic depreciation. The 'broad equivalence' test that we describe in Chapter 10 is useful in this regard.

3.7.3 Using the RCV as the basis of the depreciation charge

OFGEM bases the depreciation of the electricity distribution and transmission networks on its respective RCV. Using the RCV as the value to be depreciated has the advantage that the methodology is transparent and well understood. This avoids some of the subjectivity in valuing assets.

In its 2002 consultation paper, Ofwat commented that it could not use the RCV as the basis for depreciation for the water industry in England and Wales because of the huge gap between the RCV and the market value of assets at privatisation. At that time, the net MEA value of the assets was around 15 times greater than the RCV. Although the gap has subsequently narrowed down to around six times, it is still significant. In these circumstances, depreciation based on the RCV may significantly underestimate the economic depletion of the assets.

Another concern raised by Ofwat is that the depreciation charges based on an RCV approach may not correctly reflect the replacement cost of the assets and hence the value consumed in delivering water supply and sewerage services.

Although the issue of the privatised value of the assets does not arise in Scotland, the huge gap between the RCV and the assessed asset value in England and

Wales does indicate that the two measures differ significantly in the water industry. This suggests that an RCV approach to depreciation is not appropriate in the water industry.

3.8 Summary

Apart from freehold land, any asset has a limited life and over time loses value. The depreciation charge is a way to account for this loss of value in the company's accounts. The method chosen determines the impact of Scottish Water's capital investment programme on customers' bills. It is therefore important that careful consideration is given to the choice of depreciation policy.

Our proposal for the *Strategic Review of Charges 2006-10* is to:

- use a five step classification of asset life, ranging from very short to long;
- assume straight line depreciation over the life of the asset; and
- establish the economic value of the asset on the basis of an MEA valuation.

This methodology is consistent with that used for the water industry in England and Wales and in most other utilities. We also believe that this approach provides customers with the most reliable method of assessing the value of the asset base and an equitable balance between costs incurred by current and future generations.

3.9 Questions for consultation

1. Is the proposed approach to depreciation for the *Strategic Review of Charges 2006-10* appropriate? In particular:
2. Is the proposed method of determining asset life, through a five stage classification from 'very short' to 'long', adequate?

3. Is straight line depreciation the most appropriate mechanism for assessing the annual reduction in value of Scottish Water's assets?
4. Does the proposed use of MEA valuation provide a suitable method for estimating the economic value of Scottish Water's assets or would other methods give a better estimation?

Section 1: Chapter 4

Managing risk in the public sector

4.1 Introduction

Risk management is the process of identifying risks, evaluating their potential consequences and determining the most effective methods of controlling them or responding to them. Although water and sewerage businesses are in large part natural monopolies, they are still exposed to risk in several areas. There are the risks that operational, legal or asset issues could affect their compliance with public health or environmental standards, and there is the risk that they are unable to access capital on a sustainable basis.

There is the potential for customers of utility businesses to be exposed to these risks. The price they pay, and the level of service they receive, depend on factors that cannot always be predicted with accuracy, and therefore cannot always be fully taken into account in a regulatory settlement.

In carrying out our *Strategic Review of Charges 2006-10*, we need to understand both the potential financial risks and customers' exposure to them. We can then ensure that the price caps we set for Scottish Water are appropriate and that they minimise the potential financial risks for customers.

This chapter begins by looking at the ways in which customers' exposure to risk depends on the framework within which the water and sewerage service is provided. We describe how we dealt with risk in the last Strategic Review and discuss the issues that have arisen since then. We conclude with our proposals for managing and analysing risk in the forthcoming Strategic Review.

4.2 Customers' exposure to financial risk

4.2.1 Managing financial risk in the private and public sectors

The purpose of regulation is to seek to ensure that monopoly businesses act in the customer interest. In the

private sector, the regulator seeks to establish a balance between the interests of customers and those of finance providers. In doing so, it is the regulator's duty to ensure that an efficient business can fund its operations. Nonetheless, it is left to owners of the privatised business to ensure that management meets or exceeds the targets set by the regulator. Such outperformance is the only way to ensure that the owners of the business will receive a higher return on their investment.

In the public sector, the regulator focuses on ensuring that customers receive a value for money service, and on the delivery of environmental, public health and government policy objectives. These objectives apply over the short, medium and long term.

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

The tight budgetary constraint should help to focus management attention on delivering ongoing improvements in value for money to customers. This also explains why regulators publish periodic assessments of the financial performance of the companies or organisations they regulate. Of course, regulators also monitor the outcomes for customers very carefully. It is not in customers' interests if budgetary pressures result in corners being cut either in customer service or in the way the asset base is maintained. As with financial performance, regulators publish information on performance in customer service and delivering investment.

4.2.2 The cost of capital in the public sector

If a public sector organisation can match the level of efficiency of investment and service delivery that is

achieved by the private sector, customers of that public sector supplier could expect sustainably lower prices than would ever be offered by the private sector. This is because the public sector is consistently able to access a lower cost of capital.

There can be no doubt that Scottish Water's customers benefit significantly from access to attractive terms for public government loans. These government loans attract interest rates that are lower than the cost of commercial debt of similar term length for a water and sewerage company in England and Wales. Moreover, such relatively expensive private debt is considerably cheaper than equity.

Although direct comparisons with private water companies can be difficult because of differences between private and public sector financing, a comparison with Ofwat's allowed cost of capital is illustrative.

Ofwat's allowed cost of capital for the period 2000-05 (which assumed a 50-50 split between debt and equity) is 4.75% real¹ post-tax for the water and sewerage companies. Ofwat's proposed cost of capital for the 2006-10 period is 5.1% real post-tax. Government loans to Scottish Water since April 2002 attracted interest rates of between 3.3% and 4.9%. The weighted average interest rate for new loans taken out by Scottish Water in 2002-03 was 4.08%. This would be equivalent to 2.86% post-tax, or approximately 1.5% real, post-tax.

We estimate that Scottish Water's customers probably benefit by around £44 million per year, because of an approximate 2% saving on the annual cost of capital. We have calculated this on the basis of current total borrowing of approximately £2.2 billion.

However, it is important to note that this cost benefit will only be truly realised by customers if they are not exposed to operational risks and if the service is delivered efficiently.

4.2.3 Other differences in financial risk

Private sector companies have private equity shareholders, who want a return on their investment. They can maximise their return by performing better than the targets set by the regulator. This creates an important incentive to outperform efficiency targets. The regulator will ensure that customers will benefit from this improved efficiency in the next regulatory period. Additionally, hard budgetary constraints apply a degree of financial discipline to the business.

External shocks can have a significant impact on a company's operations and finances. A good example of this is the drought in summer 1995, and its impact on Yorkshire Water. Reservoir levels dropped to such an extent that the company was forced to transport water by road tankers to areas of need over a period of four months, at a cost of £50 million. A further £100 million was spent on improving the pipeline network to allow better transfer of water around the county and to improve security of supplies. In addition, a price rebate was also imposed by Ofwat to compensate customers for the deterioration in service they had experienced. All of these unexpected costs had to be absorbed by shareholders of Yorkshire Water.

The windfall tax is another example of a shock. This was a specific, one-off tax, introduced in the Government's Budget of July 1997. The tax was applied on the profits made by the privatised utility companies, such as British Gas and British Telecom, in their first four years in the private sector. The tax was based on the notion that owners of the privatised utility companies had received an unexpectedly high return, or windfall return, on their investment.

In the event of such a shock or underperformance by the business (whether caused by management or external operational factors) a private utility can:

- withhold dividend payments to shareholders;
- seek a rights issue; and

¹ 'Real' means after account is taken of inflation.

- obtain debt in the private markets.

Private utilities do not have the easy option of increasing charges to customers. The presence of private equity acts as a significant shock absorber, which protects customers of the water companies in England and Wales. Furthermore, prices set by Ofwat will not normally be influenced by a change in borrowing by an individual company.

The private sector benefits from a further level of risk management that benefits customers. Strong incentives to management and employees help to reduce customers' exposure to financial risk. The commercial interests of the company are served by ensuring that management are provided with appropriate incentives to take action to minimise the impact of external shocks on the business.

4.2.4 The Glas Cymru model

It is not necessary to adopt a private sector model in order to manage financial risk. Welsh Water, for example, has established a structure that protects customers from financial risk, without a traditional shareholder acting as a 'shock absorber'.

Glas Cymru is a not-for-profit company limited by guarantee which is wholly debt financed. It purchased the assets of Welsh Water for 95% of its Regulatory Capital Value. Glas Cymru has no shareholders.

The reduced purchase price, the clear ring-fence on activities, and transparent incentives which are published in advance have all contributed to a lower cost of capital. Glas Cymru is believed to have one of the lowest costs of capital in the water industry south of the border. It has no equity finance and its average cost of debt is approximately 6.8%. This is equivalent to 4.76% post-tax. The actual real post-tax cost of capital for Glas Cymru is therefore under 3%.

Budgetary constraints are still tight and debt provided by private banks is at risk if there is an unforeseen shock. However, customers are protected because the banks are committed in advance to making additional funds available if there is such a shock (although there are likely to be governance implications for the organisation). If there is an unforeseen shock, which could have been avoided or limited through proper management, customers will not suffer because Ofwat is under no obligation to increase the cash value of the return on capital allowed to Welsh Water.

4.2.5 Managing financial risk for Scottish Water

Scottish Water's customers are potentially more directly and immediately exposed to the financial risks of the water and sewerage business than customers in England and Wales because it has no private equity shareholders to cushion shocks.

In the event of an external shock or underperformance, Scottish Water must either:

- seek unplanned public expenditure in the form of a loan; or
- increase charges to customers immediately.

If Scottish Water is required to make additional expenditure as a result of an external shock, this would mean either that public expenditure is immediately redirected, or that there is an immediate increase in customer charges.

Customers are particularly exposed to any shortfall in Scottish Water's performance against targets. This is because there are no transparent incentives to perform and its budgetary constraints are not truly tight, given that Scottish Water can seek to use contingency margins within public expenditure limits.

Although the ease with which borrowing can be accessed may reduce exposure in the short term, customers would have to pay higher prices in the longer term. Borrowing more can only delay the impact of underperformance on customers. Moreover, easier access to debt may increase the likelihood of underperformance. And in the end, underperformance against efficiency targets will inevitably lead to higher than necessary bills for customers. This is because customers will have to pay the interest costs of extra borrowing.

We believe that Scottish Water's customers are entitled to a similar level of protection from shocks as customers south of the border. We therefore propose to set prices on the assumption that Scottish Water has achieved both its operating and capital efficiency targets and has delivered the capital programme in full. We propose to make adjustments to reflect any shortfall in performance in order to ensure that customers are not disadvantaged.

The risk to customers could also be mitigated if greater access to debt required financial discipline. We have commissioned advice from the investment bank ING Barings to examine how the disciplines and controls on access to debt operate in the private sector, and what aspects could be applied in the public sector. Its report will be published with Volume 4 of our series of methodology publications.

Clearly, Scottish Water should be able to recover any legitimate, unexpected costs in order to ensure its financial sustainability, and this is discussed in further detail in Chapters 6-10.

4.3 Strategic Review of Charges 2002-06

4.3.1 Our risk analysis

In the commissioning letter for the *Strategic Review of Charges 2002-06*, Scottish Ministers recognised that the

water industry in Scotland faced uncertainties and challenges during the regulatory period. Ministers were concerned that these uncertainties could lead to a call on public expenditure that would be higher than had been budgeted for. Consequently, they asked us to carry out a formal risk analysis to show how agreed outputs could be met within both the proposed revenue cap and the absolute public expenditure limits.

Our analysis focused on the likelihood of Scottish Water failing to comply with the resource accounting budget (the public expenditure constraint) allowed by the Scottish Executive. (Wider issues relating to resource accounting were discussed in Chapter 4 of Volume 2 of our methodology.)

The risk analysis was important because it provided a higher level of confidence in the financial projections contained in the Review than a simple sensitivity analysis. This analysis allowed us to take account of all of the major risk factors at the same time, including their interdependencies.

In particular, we quantified the chances that underperformance or outperformance of our efficiency targets for operating and capital expenditure might cause Scottish Water to exceed the public expenditure constraint set in the commissioning letter.

We could have quantified the risk to customers' bills or delays to the investment programme in the same way, but these were effectively different manifestations of the same risk – the risk that the public expenditure constraint would be breached. Our analysis, therefore, attempted to determine, as objectively as possible, the degree of this risk.

To complete the risk analysis we used a technique known as Monte Carlo simulation². Using proprietary risk analysis software, we examined all possible outcomes arising from a given set of uncertainties and assigned probabilities to those outcomes. The analysis

² <http://decisioneering.com/monte-carlo-simulation.html>

went beyond normal scenario analysis, where interdependencies cannot be explicitly modelled, and therefore gave us greater confidence in our financial projections.

We carried out the risk analysis separately for each of the former three water authorities and for the then proposed Scottish Water. Our analysis for the three authorities was based on a single scenario for progress towards meeting our efficiency targets. This scenario covered the potential range of outcomes that we regarded as plausible.

We defined three mutually exclusive scenarios to cover Scottish Water's progress towards our efficiency targets for operating expenditure and capital expenditure.

Scenario A

In this scenario, we assumed that the degree of efficiency achieved was unpredictable, and that a wide range of outcomes could occur. This would happen because key success factors were not fully addressed. We believed that under this scenario it was unlikely that the proposed targets would be approached, and that there was a slight possibility that the recent decline in performance of the three authorities would continue. Broadly, we expected Scottish Water to make more progress against the capital efficiency target than the operating efficiency target. We believed that the target for operating cost was more dependent on successfully transforming the organisation.

Scenario B

In this scenario we assumed that Scottish Water addressed its key management issues. We also assumed that this was done quickly and that it was a direct result of the creation of Scottish Water from the three existing authorities.

Under this scenario, we believed that the likely closure of the efficiency gap was much more predictable. We

considered that, given the conservative assessment of the targets, management should have been able to achieve the targets with a margin to spare and that significant underperformance or outperformance of the targets was unlikely. Our analysis had shown that the water and sewerage companies in England and Wales had a very consistent record of performance. We could not see any reason why this should not be repeated in Scotland.

The worst case in this scenario was broadly similar to the level of efficiency of the underperforming Welsh Water at the 1999 periodic review. The best case was broadly equivalent to the achievement of the leading company in England and Wales by 1998-99. We noted that the management of Scottish Water had a significant advantage in that it could learn from the experience of the privatised companies.

Scenario C

In this scenario, we considered a range of outcomes where Scottish Water had addressed its key management issues. We also assumed that this was done quickly.

Scenario C differed 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 did not mean that the organisation inevitably opted to contract out its activities. It simply meant that it could be confident on an ongoing basis that it was 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 latterly achieved a similar effect by contracting out its operations. The successful solution for Scottish Water would take into full account the expectations of customers, workers, managers and the unions.

In our view, this scenario was capable of providing efficiencies that were at the leading edge for the UK. We believed that the attractiveness of the Scottish market to potential contractors would encourage very competitive pricing of any contracts. Even in the worst case, this scenario was very unlikely to fail to deliver the proposed efficiency target, because this would have implied that market prices for activities would have been well above the norm in England and Wales. There was no empirical evidence to support this.

We regarded Scenarios A, B and C as being mutually exclusive, because we believed that the creation of Scottish Water would be a catalyst for change. The extent of that change could be marginal (Scenario A), significant (Scenario B) or leading edge (Scenario C). We did not believe that it was realistic to assume that the organisational change required to deliver the capital efficiency target would be achieved, while that required to achieve the operating cost target would not. It also did not seem likely that, beyond the variations of the range of outcomes, these organisational issues would be only partially addressed. This meant that each scenario produced results that were distinct and different from one another.

In each of these scenarios, we found no compelling reason to suppose that the risk profiles should be skewed either way. We believed, therefore, that a 'normal' distribution was most appropriate. We quantified the risk profiles for each of these scenarios, as shown in Table 4.1:

Table 4.1: 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 operating expenditure efficiency gap	20%	85%	105%
Mean closure of capital expenditure efficiency gap	40%	85%	105%
Standard deviation	20	7.5	5

These profiles are illustrated in figures 4.1 and 4.2.

Figure 4.1: Risk profiles for operating expenditure

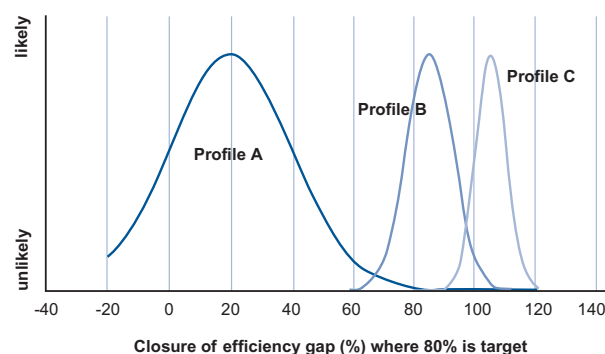
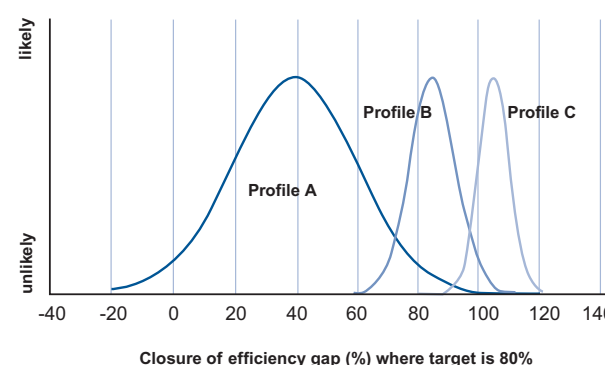


Figure 4.2: Risk profiles for capital expenditure



Our assumptions about the scenarios, and their risk profiles, covered a very wide range of possible outcomes. This is clearly demonstrated in the above figures. Furthermore, the risk analysis considered several profile combinations, considering first each efficiency target separately and second both targets together, assuming they were dependent and then independent. We were therefore confident that we had covered the plausible scope for uncertainty in the *Strategic Review of Charges 2002-06*.

Apart from the risks concerning the extent to which Scottish Water would meet its efficiency targets, we also needed to consider the risks in relation to the speed with which targets were addressed. Thus, we examined the potential impact on compliance with public expenditure budgets of a delay in achieving the targets.

In carrying out our analysis we made many assumptions. These are documented in full in the *Strategic Review of Charges 2002-06*.

- The most material of these, in terms of their impact on the financial results, were the efficiency targets;
- Our assumptions on depreciation, inflation and potential merger savings were also material, but of a lower order, and were therefore not analysed in such detail; and
- Our assumption on depreciation had a potential impact on the performance of Scottish Water in relation to its resource budget. However, we considered this to be a risk that the management and board of Scottish Water could control.

Our assumption of capital expenditure inflation was lower than the Retail Price Index (RPI). The impact of capital expenditure inflation increasing to RPI was approximately £25 million by the final year of the regulatory period. This is significant, but was not material relative to the other risks. We believed that the inflation rate for capital expenditure in Scotland was likely to continue to run below the UK average and that our estimate would be broadly correct. We also considered that the conservative assumptions made in assessing the efficiency targets were likely to lead to a far more variable outcome. The total inflation rate risk was broadly equivalent to a 5% improvement/shortfall in efficiency.

- We noted clearly that the success of Scottish Water would depend upon considerable cultural changes within the organisation. The organisation needed to understand that it would operate in a commercial and competitive world and should identify and influence those factors that would determine its ultimate success. This included issues of governance and incentives.

We also recommended that Scottish Water's management should identify key performance indicators to reflect the principal drivers of the business. We made it clear that Scottish Water would have to be fully accountable to its customers and to set tariffs that were broadly reflective of the costs incurred.

4.3.2 Outcome of risk analysis

Our risk analysis allowed us to quantify both the likely use of public expenditure and the risk of exceeding the public expenditure limits. The results showed clearly the importance of a concerted effort by the management of Scottish Water to develop a more commercial organisation.

In Scenario A there was a very high chance that the public expenditure constraint would be breached. Even in the first year, there was a 90% chance that the limit would be breached. This likelihood was greater than 99% in 2004-05. There was a 5% chance that the shortfall could exceed £330 million in 2005-06. Obviously this risk could have been reduced if either the revenue required from customers had been raised or more debt had been made available.

In Scenario B the range of possible outcomes was considerably more encouraging. In 2004-05 there was only a 2% chance that the public expenditure limit would be breached. This risk was negligible for the other years. We believed that this was a manageable risk if Scottish Water delivered on its potential. Given the catalyst for better performance that Scottish Water's creation presented, we believed that Scenario B represented a more likely range of outcomes.

The Scenario C results were excellent. The chances of exceeding the public expenditure constraint in each year were negligible, at less than 0.1% for all cases.

Under the former three water authority model our risk analysis showed that there existed a real possibility that

public expenditure constraints would be breached. The chances of the public expenditure constraint being exceeded were 31% for East of Scotland Water Authority (2003-04), 35% for North of Scotland Water Authority (2002-03) and 37% for West of Scotland Water Authority (2004-05).

We analysed the impact of delays in achieving efficiency targets. The results of the analysis showed that it was imperative for Scottish Water to give utmost priority to achieving the targets. A delay of one year would have resulted in a budget shortfall of almost £90 million in 2002-03. In the event of a two-year delay, the budget shortfall would have been more than £150 million in 2003-04.

The main findings of the risk analysis are summarised in Table 4.2. For simplicity we only consider operating cost efficiencies and capital cost efficiencies combined, either dependently or independently.

Table 4.2: Summary of risk analysis on public expenditure budget

	Most likely margin	Period	% chance of exceeding public expenditure constraint	Period
Profile A				
Best case	(£45m)	2002-03	90%	2002-03
Worst case	(£185m)	2005-06	>99.9%	2004-05
Profile B				
Best case	£96m	2005-06	<0.1%	Many
Worst case	£55m	2004-05	2%	2004-05
Profile C				
Best case	£213m	2005-06	<0.1%	Every
Worst case	£97m	2002-03	<0.1%	Every
Three authorities model – East of Scotland Water Authority				
Best case	£29m	2004-05	0.8%	2002-03
Worst case	£9m	2003-04	31%	2003-04
Three authorities model – North of Scotland Water Authority				
Best case	£22m	2005-06	14%	2005-06
Worst case	£8m	2002-03	35%	2002-03
Three authorities model – West of Scotland Water Authority				
Best case	£34m	2002-03	5%	2002-03
Worst case	£12m	2003-04	37%	2004-05

4.4 The appropriate balance between revenue and debt

It is in the interests of customers that the water industry is financially sustainable over the medium and long term. When assessing the revenue cap and completing risk analysis, we wanted to be sure that our proposed revenue caps did not simply delay current problems for another day. We were concerned to protect the interests of both present and future customers.

Any business could, at least in theory, borrow more cash in order to cover any or all of its costs. However, any borrowings will need to be repaid, with interest, from future revenues. In other words, continuing to borrow to cover current costs will mean that revenues have to increase to meet the interest charges on the borrowing. If the underlying revenue is not sufficient to cover the ongoing operational and maintenance expenditure faced by Scottish Water, borrowing is only delaying and worsening the charge levels that future generations face.

It is difficult to make direct comparisons of financial ratios with the privatised companies in England and Wales. There are several reasons for this.

- The existence of equity makes calculation of total financing costs more difficult and it tends to mitigate the risks faced by customers;
- A clear distinction is made in England and Wales between core and non-core activities (which at present is not made in the Scottish water industry);
- There are public/private partnership contracts in Scotland (which do not exist for the industry south of the border); and
- The industry in England and Wales had made more progress towards meeting improved environmental and public health standards.

In its assessment of the impact of its 1999 price determinations on the financeability of the water industry for the period 2000-05, Ofwat used the following ratios³:

1. Historical cost interest cover	Min 2x
2. Average gearing 2000-05 (D/D+E)	45-55%
3. Cash interest cover (EBITDA basis)	Min 3x
4. Cash interest cover (EBIDA basis)	Min 2x
5. Debt payback period (EBITDA basis)	Max 5 years
6. Debt payback period (EBDA) basis	Max 7 years
7. Cashflow to capex ratio (EBDA basis)	Min 40%

We believed that it was appropriate to use the two debt payback ratios in the public sector industry in Scotland. It was clear that the level of outstanding debt in Scotland (relative to revenue) was higher than was desirable. We could not allow the financial position of the Scottish water industry to worsen further without this posing additional risks for customers.

For monitoring purposes we considered that the ratio of free cash flow (defined as operating cash flow less maintenance investment expenditure) to interest payable was appropriate. We thought that this would be more immediately comprehensible than earnings before depreciation and amortisation.

In the *Strategic Review of Charges 2002-06* we set a long-term goal of a ratio of free cash flow to interest of 1.5. We regarded this as an ideal ratio, 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. However, in the short term our target was to deliver a ratio of 1.0 by 2005-06. This would mean that, were Scottish Water to meet all of its

efficiency targets in full and deliver its investment programme on time, then by 2005-06 it would have had just sufficient cash to cover its interest payments. It would also have broadly complied with the two relevant Ofwat ratios.

It is important to understand that the purpose of a long-term move towards interest cover ratios above 1.0 would be to provide Scottish Water with financial resources in the event of an unexpected additional cost. In the case of Scottish Water, the only alternative to the financial protection offered by high interest cover ratios would be for there to be sufficient flexibility in public spending to cover unexpected costs as and when they arise. However, the Minister's commissioning letter pointed out that the public expenditure figures represented "absolute limits, and not targets".

4.5 Proposed approach to managing risk for the Strategic Review of Charges 2006-10

We are proposing to adopt the following approaches to managing risk at the 2006-10 Review. They appear to offer significant benefits for customers, while allowing Scottish Water to manage its business.

4.5.1 Adopt the regulatory capital value approach to price setting

We begin a detailed discussion of this approach in the next chapter. Adopting the Regulatory Capital Value approach to price setting will have four major benefits:

- It will give customers greater protection against external shocks and underperformance;
- It will protect customers from long-term price increases in the event that Scottish Water decides to undertake more borrowing than is assumed in price limits;

³ D/D+E – Debt/Debt + Equity, EBITDA – Earnings before interest, tax, depreciation and amortisation, EBDA – Earnings before depreciation and amortisation.

- It could provide a basis for incentives to management that would be transparent, published in advance and objectively measurable. These incentives should encourage management to deliver the efficiency targets, thus protecting customers; and
- It would allow us to compare financial ratios on a like-for-like basis with other regulated utilities, and so provide a better indication of financial sustainability. This method of price setting protects customers from paying for underperformance.

4.5.2 Introduce effective controls on access to borrowing

Ease of access to debt may increase the likelihood of underperformance and reduce incentives to achieve efficiency targets on time.

It must be remembered that the higher the debt relative to revenue, the greater the risk for future customers. This includes a risk of higher prices. A strengthened regulatory regime and improved transparency in the way that public expenditure is made available to Scottish Water would help to ensure that customers receive better value for money on a sustainable basis.

ING Baring's report, referred to above, will inform our proposals for more effective controls on access to borrowing. We will publish this report in Volume 4 of our methodology consultation.

4.5.3 Extend our risk analysis to include financial indicators

We propose to extend the risk analysis that we published in the *Strategic Review of Charges 2002-06*, to include not only public expenditure limits but also the financial ratios that we target in our financial model. We provide more information on these ratios and the financial model in Chapter 7. We propose to use Monte Carlo analysis techniques to examine all of the possible outcomes arising from a given set of uncertainties.

We will begin our assessment of risk by considering the range of possible outcomes on the performance against the efficiency targets. We will seek to adopt appropriate evidence based on profiles of risk. For each profile we will determine a most likely outcome, in terms of present closure of the efficiency gap, and a likely range of uncertainty around that figure. We will express these in the form of a mean and standard deviation of a normal statistical distribution.

Our analysis will allow us to answer questions such as the following:

- How might the debt to RCV ratio change if Scottish Water fails to meet efficiency targets?
- By how much does the debt payback ratio decrease if Scottish Water beats its operating expenditure targets?
- What is the chance of exceeding the public expenditure limits made available by Ministers?
- To what extent could inefficiency impact on delivery of the capital programme?

4.5.4 Fund maintenance appropriately, with depreciation recognised accordingly

As discussed earlier, there is no sensible alternative other than for customers to pay annually for an appropriate level of expenditure to maintain and renew assets as they wear out. Our Strategic Review will examine wide-ranging evidence in order to assess what an appropriate long-term level of expenditure is, given Scottish Water's asset base. We will need to review Scottish Water's assumptions on depreciation to ensure that long-term needs are properly reflected in prices.

4.6 Questions for consultation

1. Do respondents agree that we should extend risk analysis to cover the financial ratio comparisons?

2. Do respondents agree that access to borrowing should require Scottish Water to conform to the same disciplines and control that apply in the private sector?
3. Do respondents agree that customers should not pay for a failure to meet agreed targets?
4. Are there other factors that we should take into account in minimising the risks to customers both now and in the future?

Section 2: Chapter 5

How we propose to determine charges for the 2006-10 period

5.1 Introduction

For most customers, the most important outputs of a Strategic Review of Charges are the level and profile of prices they will have to pay. The role of a regulator is to set prices that are sufficiently high to ensure the sustainable delivery of the desired level of service, but no higher than they need to be. In order to ensure that customers pay no more than is necessary, we will review the costs that Scottish Water expects to incur and identify opportunities for efficiency. It is important that customers are only asked to pay for the efficient delivery of the service or, at worst, for an agreed profile of costs consistent with a move towards benchmark efficiency.

The costs faced by customers can be categorised into three main areas:

- running costs;
- costs associated with the use of existing and new assets; and
- costs of public private partnership (PPP) contracts.

We use a financial model to establish an appropriate level of revenue that is consistent with meeting these costs and ensuring that Scottish Water should be able to deliver the level of service to customers that will be defined by the Quality and Standards process¹. This model allows us to ensure that an appropriate balance is struck between current and future customers. We will also look to ensure that customers in general are protected from unnecessary fluctuations in their charges.

In calculating prices for customers, we use a tariff basket to divide the identified revenue between customer groups. The detail of how much each customer group will pay will depend on the result of the Scottish Executive's current consultation, '*Paying for Water Services 2006-10*'.

At this review we are proposing to make some changes to our approach to price setting. These changes are limited to the approach to meeting the costs of new and existing assets. We do not believe that this revised approach has any immediate material impact on the prices faced by customers, on the resources available to Scottish Water, or on the implications for public expenditure. The changes are designed principally to allow greater transparency. They bring the approach to price setting for Scottish Water into line with that for the English and Welsh water and UK energy sectors. As such, we will be able to make more direct comparisons in financial ratios and risk to customers than was previously possible.

We propose to introduce a Regulatory Capital Value (RCV) for Scottish Water. Scottish Water will receive an appropriate rate of return on this RCV. Efficient investment in new assets will be added to the RCV. Depreciation (reflecting the costs of using existing assets) will reduce the RCV.

5.2 The approach we used in 2001

At the *Strategic Review of Charges 2002-06* we prepared our advice to Scottish Ministers on the appropriate level of charges both for the then proposed Scottish Water and the three (now former) water authorities. At that Review we were not able to use the RCV approach to price setting for two main reasons:

- It would have been difficult to ensure that we set a RCV for each of the three authorities and for the proposed Scottish Water on a consistent basis. We believed that it was important to achieve consistency given that the Parliament had not approved the creation of Scottish Water; and
- We were also concerned that the regulatory information available to us (particularly on the modern equivalent value of the industry's assets) would have made using the RCV more problematic.

¹ See the Scottish Executive's Consultation document, '*Investing in Water Services 2006-10*'.

We therefore decided that it would be desirable to delay the introduction of this method of price setting to the 2006-10 regulatory period.

As a result, we developed an approach that would allow us to ensure that all of the cash costs faced by Scottish Water could be met. These cash costs were:

- interest costs;
- operating costs;
- PPP costs; and
- investment.

5.2.1 Assessing costs and revenues in 2001

We developed a financial model that allowed us to model the implications for revenue of different cost, investment and financing scenarios. This allowed us to assess what would be appropriate revenue caps for both Scottish Water and the three authorities.

Each of these elements of cost was scrutinised in detail, and we set appropriate efficiency targets for both operating costs and the cost of investment delivery. Our view was that the costs of the PPP projects were, at that time, lower than the expected costs of similar projects delivered by the three authorities. Consequently, we did not set an efficiency target for the expected costs of the PPP contracts. The expected level of interest depended largely on the profiling of the capital programme and the extent of new debt incurred by Scottish Water. These estimates of cost were added together to determine the expenditure that should be allowed to Scottish Water.

We worked with the quality regulators and the three authorities to agree appropriate phasing of the capital programme. This phasing took account of the need to improve efficiency, to deliver the environmental and public health improvements on time and to ensure that there were no undue fluctuations in customers' bills.

5.2.2 How Scottish Water funds expenditure

Scottish Water can fund its expenditure from two sources, namely revenue from charging customers and new borrowing. Any new borrowing is subject to a maximum level that is set by the Scottish Executive. This new borrowing counts as public expenditure. In the commissioning letter for the *Strategic Review of Charges 2002-06*, the Minister asked us to present a risk analysis to demonstrate that our advice did not carry a material risk that the public expenditure limits set in the commissioning letter would be breached.

We had concerns that the level of debt of the three Scottish water authorities had increased rapidly since 1996. The impact of this increase in debt on customers' bills had been reduced through refinancing of maturing debt at lower interest rates. However, it was clear that continuing to borrow at the same rate was likely to lead to much higher prices in the future than could be justified. The level of debt of the Scottish water industry was also inconsistent with the prudent financial ratios upon which Ofwat bases its determination of prices. Our principal concern was the impact that any unforeseen costs (for example a water supply incident or underperformance against efficiency targets) could have on customers. We therefore advised that the industry should not seek to use the full public expenditure allowance that was available. This was also consistent with the risk analysis requested by Ministers.

The objective of the Strategic Review was to identify the amount of revenue that should be recovered from customers. Our advice set the revenue cap at the level of allowed expenditure minus the amount that could prudently and sustainably be funded from public expenditure. Thus, for the period 2002-06, the maximum level of revenue that Scottish Water was permitted to collect from its customers was calculated as follows:

$\text{Advised revenue cap} = \text{allowed cash costs} - \text{advised public expenditure}$
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5.3 Why we have changed the method that we used in 2001

There have been a number of significant improvements in the information that is available about the water industry in Scotland. This allows us to strengthen the regulatory regime and improve our comparisons of the relative performance of the industry in Scotland with that south of the border. We believe that such comparisons are in customers' interests.

In 2001 we were able to make robust assessments of the relative efficiency of Scottish Water's level of operating cost and capital expenditure efficiency. However, the information available about the modern equivalent asset value of the water industry in Scotland was not sufficiently robust to establish an appropriate level for an RCV. We made a number of comments about improvements that we would like to see in asset information in the *Strategic Review of Charges 2002-06*². The modern equivalent asset value is the cost of replacing the assets that provide the service to customers with their modern equivalents. It therefore takes account of inflation and innovation (including changes in technology). This asset value is important to the use of the RCV method of price setting as this method seeks to ensure that sufficient resources are provided, not only to operate assets but also to refurbish, replace and finance them. As such, an improved understanding of the modern equivalent asset value is important.

We are pleased to report that Scottish Water has made progress in its understanding of its asset base. As a result, we now consider that it is appropriate to introduce an RCV for Scottish Water. This will bring the method for calculating prices for Scottish Water into line with that used by other utility regulators in the UK. The RCV method is also used internationally, including in the regulation of public sector corporations.

Introducing the RCV method of price setting will bring three main benefits:

- It will improve the transparency of comparisons of

financial ratios between the industry in Scotland and that in England and Wales;

- It will demonstrate the cost of capital benefit to customers from the industry remaining in the public sector; and
- Finally, the RCV method of price setting does not require the regulator to determine how much Scottish Water should seek to borrow or how much the Scottish Executive should seek to lend. Prices could only be impacted in relatively extreme circumstances, and we would be able to highlight the risk of such occurrences in our performance reports. This is discussed in further detail below.

We explained above our approach to improving the financial sustainability of the water industry in Scotland at the 2002-06 Review. Since our approach to price setting in 2001 was necessarily different from that used in England and Wales, it was not possible to make straightforward calculations of financial ratios.

In its report on the water industry in Scotland, the Finance Committee criticised our use of financial ratios. We remain confident that the information that we provided to the Finance Committee was both accurate and consistent with an accurate picture of the risks faced by customers. However, we do accept that we should have explained the basis of our comparisons in our oral evidence more clearly. The introduction of the regulatory capital method of price setting will ensure that comparisons of financial ratios will be much more transparent.

The market cost of capital for a private sector water and sewerage company is higher than the cost of capital charged by the Scottish Executive to Scottish Water. This will allow us to set a lower rate of return on Scottish Water's RCV than the cost of capital that is allowed by Ofwat. This difference in the financing costs of the industries in the public and private sectors will become more transparent as a result of our introduction of the regulatory capital method of price setting. We discuss

² See, for example, pages 52 and 53 of the *Strategic Review of Charges 2002-06*.

the setting of an appropriate rate of return for the industry in Scotland in Chapter 9.

5.4 The introduction of an RCV

5.4.1 Defining the RCV and allowed rate of return

The RCV is a proxy for the current value of the above-ground asset base of Scottish Water. This value will change over time to reflect the use (ageing) of assets [the cost of which is recognised by the depreciation charge] and investment in new assets.

The current below-ground assets (infrastructure) are considered to be assets that are required in perpetuity and are therefore not included in the RCV. The cost of maintaining and replacing these assets is met through the annual infrastructure renewals charge. If Scottish Water spends more or less in practice, the RCV is amended to take proper account of this and to ensure that the industry is financed on a sustainable basis.

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

5.4.2 The calculation of revenue

The revenue that Scottish Water should be allowed is calculated as follows:

**Return allowed on the regulatory capital value +
allowable operating costs +
depreciation on non-infrastructure assets +
the infrastructure renewals charge (IRC) +
the costs of PPP contracts**

Return allowed on the Regulatory Capital Value

We explained above that principally owing to the uncertainty surrounding the modern equivalent value of the assets of the Scottish water industry, we had to look at the cash implications of the *Quality and Standards II* investment programme. We also explained that, in this

review, we propose to set an RCV and allow a rate of return on the RCV. This is discussed in detail in Chapter 9. The product of the RCV and the allowed rate of return will give the total return allowed on the RCV. This ensures that customers only contribute towards those assets that have been created.

The level of the RCV does not, by itself, impact on the prices that customers pay. It is the cash return allowed on the RCV that will determine the level of prices that is paid by customers. We discuss the calculation of an initial value for an RCV for Scottish Water in Chapter 8.

When Scottish Water invests in new assets, the efficient value of that asset is added to the RCV and begins to earn a return. This increases prices to customers. At the same time, the annual depreciation charge will reduce the RCV. A return is paid only for the value of the non-depreciated portion of an asset included in the RCV. The value of the RCV is adjusted to take account of inflation.

The second element of the calculation of the allowed return on the RCV is the rate of return. In the private sector model this is referred to either as the cost of capital or the weighted average cost of capital. We explain the factors that we have taken into account in setting an appropriate rate of return for Scottish Water in Chapter 9. This chapter also outlines the difference between the rate of return that we allow to Scottish Water and the cost of capital set by Ofwat for the water and sewerage industry south of the border.

As explained above, we will multiply the proposed rate of return by the RCV (adjusted in future years to reflect investment and depreciation) to establish the cash return allowed on the RCV.

Allowable operating costs

The allowed level of revenue includes an appropriate allowance for operating costs. Our assessment of operating costs will take into account inflation, the scope for efficiency and an allowance for efficient new operating costs. Operating costs comprise a significant proportion of a customer's bill and we propose to pay

particular attention to ensuring that these costs are no higher than they need to be. The calculation of the appropriate level of operating costs will be discussed in Volume 4 of our proposed approach, which is due to be published shortly.

Depreciation and the Infrastructure Renewals Charge

As noted above, under our proposed RCV approach we will allow for asset costs in two ways, that is the allowed cash return on the RCV and an allowance for depreciation. The allowance for depreciation and the Infrastructure Renewal Charge (IRC) ensures that sufficient funds are available to replace assets that are at the end of their useful lives.

Depreciation charges, however, may be considered as a specific type of operating cost, as they will be treated as operating costs in the company's accounts. Depreciation is an accounting charge, rather than a cash cost. The cash cost is incurred when the asset (the use of which is recognised in the depreciation charge) is purchased.

Scottish Water's depreciation charges are included as allowed costs in order to smooth the cost of replacing assets when their useful lives are over. The costs of replacing Scottish Water's assets are reflected in the IRC and as a separate depreciation charge.

- **Infrastructure Renewals Charge.** The IRC covers the cost of maintaining, refurbishing and replacing underground assets. It does not reduce either the asset value of the company or the RCV. Like the water industry in England and Wales, Scottish Water has adopted the accounting convention of infrastructure renewals. This means that the infrastructure network (mainly comprising underground pipes, sewers, etc) is treated as a single asset to be maintained in perpetuity, rather than a collection of assets each with its own life and maintenance requirements. It is reasonable to include the IRC in the price paid by customers as it reflects the cost of the current use of the underground infrastructure. We will discuss in Volume 5 our proposals for how to determine the appropriate level of the IRC.

- **Current Cost Depreciation (CCD).** Depreciation of non-infrastructure assets (mainly those assets found above the ground) is known as CCD. For assets in existence in 2005-06, allowed depreciation charges will be based on Scottish Water's own forecasts of depreciation during the new review period. New assets installed during the period will be depreciated on the basis of a standard set of expected asset lives.

The costs of PPP contracts

Scottish Water will provide us with detailed information on the PPP costs it expects to incur during the next regulatory period. The PPP contracts effectively swapped initial capital costs, financing and maintenance costs and operating costs over the life of an asset for a series of annual payments. We propose to scrutinise these costs carefully. Our proposed approach will be described in detail in Volume 4. Our analysis of the appropriate level of these PPP costs will be allowed in our calculation of revenue.

5.4.3 Access to debt finance

In 2001, our advice to Scottish Ministers on the appropriate level of revenue caps for the three authorities and for Scottish Water also required us to provide advice on how much borrowing should be used. This advice on borrowing had an impact on both current and future prices.

The regulatory capital method of price setting does not require us to take decisions about how much extra borrowing Scottish Water should seek. Our calculation of prices will rather reflect the costs of providing the service, maintaining and replacing assets and financing new assets. The method of financing (whether from retained surplus or from new debt) will not have an impact on the price paid by customers, provided that debt remains at broadly the same proportion of the RCV.

If debt increases as a proportion of the RCV, future customers will face either higher prices or a service that is less able to absorb operational or legislative shocks.

If debt decreases as a proportion of the RCV, customers in subsequent years will benefit. Scottish Water could opt to set tariffs at a lower level than that allowed by the price cap or customers could enjoy a service that is more able to absorb operational or legislative shocks.

If Scottish Water is allowed to borrow more money, this will increase interest costs. The extra cash resources available may cause efficiency targets to be missed, but this will not impact on prices because prices will take into account only an efficient allowance for costs. If the extra money is efficiently invested in new assets, then customers would start to pay for these improvements at the start of the next regulatory period. There would be an onus on Scottish Water to demonstrate that the extra spending was necessary, appropriately timed and efficient before customers would have to pay.

If Scottish Water is allowed to borrow less money, interest costs would fall but it would also be difficult to deliver all of the benefits of the investment programme. This would result in a lower RCV in future years and hence a lower allowed cash return. This would reduce the prices paid by customers in the future, but is also likely to mean a reduction in the level of service and environmental/public health compliance that customers currently enjoy.

Monitoring of the RCV and the ratio of total debt to the RCV will provide stakeholders with a useful indicator of the financial performance of the water industry in Scotland. Stakeholders should expect the RCV to increase in line with the profile that is established at the start of the regulatory period. Smaller increases would suggest that the capital programme is making less progress than was expected at the start of the regulatory period, larger increases would suggest that better progress had been made.

The ratio of debt to RCV should indicate whether Scottish Water is making sufficient progress towards the efficiency targets that we set in the *Strategic Review of Charges 2006-10*. We propose to use our performance reports to monitor these financial indicators.

5.4.4 Advantages of the RCV approach

The RCV approach to price setting will create an incentive to deliver capital projects in a timely and efficient way. This is because Scottish Water will only earn a return once a project has been delivered and the efficient cost of that project is added to the RCV. The timing of project delivery will be agreed after we have received both Scottish Water's first and second draft business plans and the guidance from Ministers on priorities for the capital programme for the next regulatory period.

If Scottish Water delivers projects more or less quickly than expected, then the allowed return would be adjusted in the next regulatory period. This should ensure that customers are able to be more confident that the benefits promised in the investment programme will be delivered on time.

There is also a clear incentive to deliver the capital programme efficiently because only the agreed efficient cost is added to the RCV. This ensures that customers are not asked to meet the costs of inefficiency. Inefficiency in the delivery of any project will have to be matched by outperformance of the efficiency target in another area. If there is no corresponding outperformance, Scottish Water would have to increase its debt and increase the proportion of debt to RCV. In subsequent years, either there is a matching outperformance of the earlier inefficiency (and the additional borrowing costs) or there would have to be a further increase in debt equivalent to the borrowing costs.

Such inefficiency should not impact on customers. The price paid by customers will still be determined by the allowed cash return on the RCV, the depreciation and IRC allowances and the operating costs (including PPP). This calculation is not changed by a failure to meet efficiency targets either for capital investment or operating costs.

The onus is on the management of Scottish Water and its owner, the Scottish Executive, to ensure that the agreed levels of service and investment programme are

delivered. We will be able to monitor progress through a comparison of the debt to RCV ratio that was expected at the start of the regulatory period relative to that which is reported at the end of each year. This should make assessing performance much more transparent.

5.5 The introduction of price caps

5.5.1 Introduction

We also propose to determine a series of price caps rather than a revenue cap. The use of a price cap should provide customers with a clearer idea of how their charges are likely to change during the period covered by a Strategic Review of Charges.

5.5.2 How the price cap differs from the revenue cap

Revenue is a function of price and quantity supplied. The quantity supplied can vary depending on the nature of the customer base and their consumption of potable water and discharge of waste water. If the number of customers were to increase faster than had been expected (or existing customers were to increase their use of water or discharge of waste water), customers would benefit. This increase in the quantity of service provided would result in lower average tariffs to ensure that the revenue cap is not breached. Conversely, if the number of customers grows less quickly than forecast or consumption/discharge falls, then tariffs would need to increase at a faster rate than the revenue cap in order to ensure that the industry accesses the resources it needs.

A price cap insulates customers from the impact of changes in the customer base or volumes of consumption during a regulatory period. A customer should still be able to calculate the maximum price that they will have to pay by looking at their use of the water and sewerage service and the maximum applicable tariffs. We believe that the introduction of a price cap is in the general interest of customers.

5.5.3 Calculating price caps

We have described how we propose to calculate the revenue that Scottish Water will be allowed to raise from

customers. We will then translate this allowed revenue into a series of price caps. We discuss the use of tariff baskets and our proposals in more detail in Chapter 12.

The first step will be to establish a base year. We will have to have a full record of customers and the service that they received for this year. These customers will be divided into several tariff baskets depending on the type of service they require. These tariff baskets will also take full account of the results of the Scottish Executive's consultation *Paying for water services 2006-10*.

Once we have established appropriate tariff baskets we calculate the average bill for customers in each basket. We calculate this average by dividing the total revenue from customers in that basket for the base year by the total number of customers.

The next step is to establish the current relative weighting of each of the baskets. These weightings take account of the importance of each basket to Scottish Water's overall revenue. This allows us to calculate an average bill.

Future weightings of these tariff baskets will take full account of the Ministerial Guidance that we expect to receive in January 2005. This Guidance will be informed by the principles of charging consultation. We also expect that this guidance will cover issues relating to the structure of charges (eg the balance between fixed and variable components). The weightings will also take account of the expected changes in the composition of the tariff baskets. Such changes may include increases in the number of connected households or businesses, amendments to the rateable value of connected properties and reductions in the amount of potable water consumed.

We will then calculate price caps that are consistent with the changes in the average bill required.

5.5.4 Advantages of price caps

There are two principal reasons why we believe that it is in the customer interest for us to set a series of price caps rather than an overall revenue cap.

First, the introduction of price caps will provide greater transparency on the prospect for prices and will improve customers' understanding of the likely profile of prices. Customers will be able to understand what the maximum prices for the various services they use will be in each year of the regulatory period. This should allow them to plan accordingly.

Secondly, customers will be protected from changes in the customer base or levels of consumption. This will remove uncertainty about how changes in the overall customer base each year might impact on bills for individual customers.

At the current time, if Scottish Water decides to enter into a special agreement with, or provide some form of rebate to, a customer, it can make up any shortfall by increasing tariffs to other customers. The cap on revenue means that Scottish Water has only a limited incentive to maximise the revenue received from each customer. This is because increases in tariffs can be used to offset the impact of any reduction in the 'quantity' of service provided to customers.

The introduction of price caps will ensure that Scottish Water has an incentive to maximise revenue from each customer. It will no longer be able to increase prices to compensate for any shortfalls in revenue. This ensures that the impact of any such shortfall cannot impact on customers immediately. As a result, we will be able to scrutinise the reasons for any shortfall in revenue and determine whether it is appropriate to increase tariffs to compensate. Such increases are typically appropriate only when an effective management could not have avoided the shortfall in revenue.

5.6 Conclusions

Chapters 8 and 9 discuss how we propose to set a Regulatory Capital Value and an appropriate rate of return for Scottish Water. We believe that these proposed changes will improve the transparency of the price setting process and that this will bring benefits to customers. However, it is important to note that the switch to using the Regulatory Capital Value method of price setting will not immediately or materially impact on

the prices paid by customers, the resources available to Scottish Water or the amount of public expenditure required.

We believe that replacing the current revenue cap with a series of price caps will bring real benefits for customers. Establishing price caps will remove the annual uncertainty about the impact that changes in the customer base may have on prices. We discuss the detail of our proposed approach to tariff baskets in Chapter 12.

Adjustments to the initial Regulatory Capital Value established for Scottish Water are outlined in Chapter 10. The mechanism which ensures that Scottish Water is able to meet unavoidable changes in circumstance and protects customers from the impact of a failure to meet efficiency targets is discussed in Chapter 11.

5.7 Questions for consultation

1. Do customers agree that the regulatory capital method of price setting will help to facilitate comparisons between the water industry in Scotland and south of the border? If not, what are the alternative methods they would suggest?
2. Do customers agree that it would be better to set a series of price caps rather than the current system of setting a single revenue cap?
3. Are there other actions we should consider to improve the transparency of the price setting process?

Section 2: Chapter 6

Regulatory accounts and accounting separation

6.1 Introduction

Information plays a critical role in our work of regulating Scottish Water on behalf of customers. It allows us to form a view of how well Scottish Water is performing.

In the last Strategic Review of Charges, we commented on the advantages to be gained from proper accounting separation between Scottish Water's core and non-core activities. We were therefore pleased when the Water Industry (Scotland) Act 2002 limited the remit of this Office to promoting the interest of customers of the core business.

This legislative change has altered the scope of the information we require to carry out our work from that which was used at the last Strategic Review of Charges. Specifically, when we form a view of Scottish Water's financial performance we must now be able to distinguish between its core and non-core functions and, potentially, between its wholesale and retail functions.

All companies prepare statutory financial accounts, which are submitted to Companies House. As a public corporation, Scottish Water does not have to prepare or submit such accounts. However, in line with a Direction from Scottish Ministers, it is required to prepare similar financial accounts.

These statutory accounts alone are not sufficient to provide the information that we now require. In particular, they only detail the financial performance of Scottish Water as a whole and, as such, are unable to provide a specific breakdown of costs by activity.

Other regulators have overcome these limitations by introducing a set of parallel, regulatory accounts. These accounts are tailored to provide the specific information required for effective regulation. We propose to adopt the practice of other regulators by asking Scottish Water to complete regulatory accounts.

We believe that the additional requirement to prepare regulatory accounts would allow us to understand better the costs of the various activities of Scottish Water, and

thus help ensure that charges broadly reflect costs. This will strengthen our role in ensuring that customers only pay for the service that they receive. Regulatory accounts will also provide a number of additional advantages in terms of detail and clarity of the information we receive from Scottish Water. This information will play a fundamental role in the draft and final determinations of the next Review period.

This chapter discusses our proposed changes to the accounting framework for Scottish Water. We begin by explaining the development of regulatory accounts in the UK and the accounting standards that have been developed to go with them. We describe the current situation in Scotland, then summarise the case for improving the accounting framework. The chapter closes with a discussion of our proposals to implement regulatory accounts.

6.2 The development of regulatory accounting in the UK

The regulated utilities produce both statutory financial accounts under UKGAAP¹ and regulated accounts. UKGAAP accounts are not materially affected by the existence of a parallel system of regulatory accounts. They are valuable to owners and shareholders, but are not used for most aspects of regulation. It has been recognised by Government and investors that an independent, separately audited and precisely defined set of accounts is important to effective and transparent regulation.

In the water industry, Ofwat implemented comprehensive regulatory accounts in 1992-93, in order to carry out its first price review. Full legal and accounting separation of non-core from core activities had already been introduced at the time of privatisation in 1989. Over time, regulatory accounts have been introduced in a number of other regulated industries, including:

- civil aviation;
- electricity;

¹ UKGAAP – United Kingdom Generally Accepted Accounting Practice.

- gas;
- postal services;
- rail; and
- telecommunications.

In 1998, the Government published a Green Paper recommending that regulators should require monopoly utility businesses to publish regulatory accounts and to do so in more standard formats². The Government suggested that this would facilitate wider understanding of regulatory issues.

Following the Green Paper, the offices responsible for economic regulation in the UK established a regulatory accounts working group. The group comprised representatives from the gas, electricity, water, telecommunications, rail, aviation and postal services industries³. The group's aim was to develop areas of consistency within published regulatory accounts. The group's conclusions were published in April 2001⁴. We propose to follow the principles set out in that paper in our work on introducing regulatory accounts to the Scottish water and sewerage industry.

The following extracts set out the purpose of regulatory accounts:

"In essence, the main purpose of regulatory accounts should be to provide financial information about regulated businesses for use by the regulator, industry, investors, consumers and other stakeholders. This would enhance the information available within the industry and aid in the assessment of the stewardship of management and informing economic and financial decisions."⁵

In addition, it was stated that regulatory accounts could be useful in:

- *"monitoring performance against the assumptions underlying current price controls;*
- *informing future price control reviews and other regulatory decisions that require financial information such as setting determined prices;*
- *assisting in the detection of certain anti-competitive behaviour in the relevant markets, such as unfair cross-subsidisation and undue discrimination at the appropriate level within the business concerned;*
- *assisting in comparative competition;*
- *assisting in monitoring financial health; and*
- *improving transparency in the regulatory process as regulatory accounts are the main source of regular, published and audited financial information about regulated companies."*⁶

We propose to use regulatory accounts for similar purposes in our regulation of the water and sewerage industry in Scotland.

6.3 Accounting standards for regulatory accounts

The economic regulators establish and define the guidelines for regulatory accounts. Regulatory accounts do not necessarily follow the standard accounting guidelines (FRS⁷, UKGAAP, etc) used for statutory financial accounts. Indeed, in their common principles the regulators agreed that in the event of a conflict between regulatory accounting guidelines and UKGAAP, the regulatory accounting guidelines would take precedence⁸.

² *A fair deal for consumers – Modernising the framework for utility regulation*, Department of Trade and Industry, proposal 7.7.

³ The Water Industry Commissioner for Scotland was not represented on this working group.

⁴ The role of regulatory accounts in regulated industries. A final proposals paper by the: Chief Executive of Ofgem; Director General of telecommunications; Director General of water services; Director General of electricity and gas supply (Northern Ireland); Rail Regulator; Civil Aviation Authority; and Postal Services Commission. April 2001.

⁵ Ibid page 3.

⁶ Ibid page 3.

⁷ Financial Reporting Standards

⁸ Ibid paragraph 2.4, page 32.

It is essential that the regulatory accounting guidelines are detailed and comprehensive. Regulated companies will use regulatory accounts for both historical reporting and future projections. Likewise, regulators will use the regulatory accounts to inform their decisions on prices.

Regulatory accounts are designed to provide a representative picture of performance in the context of the economics of the particular regulated sector. Each regulator therefore sets out their own guidance. The specialist nature of regulatory accounts allows much tighter definitions of reporting requirements to be specified. In contrast, UKGAAP has to be sufficiently flexible to deal with a full range of types and size of business. The tighter definition allowed by regulatory accounts allows comparisons of performance both over time and between companies.

6.4 Scope of Ofwat's regulatory accounting guidelines

We propose to adopt Ofwat's regulatory accounting guidelines (RAGs) as a basis for the regulatory accounting guidelines in Scotland. The Ofwat guidelines are published in five volumes, covering the following:

RAG1 Accounting for current costs and regulatory capital values

RAG2 Classification of expenditure

RAG3 The contents of regulatory accounts

RAG4 The analysis of operating costs and assets

RAG5 Transfer pricing in the water industry

Where we amend or develop these guidelines for application in Scotland we will do so simply to ensure that they are fully consistent with Scottish Water's statutory duties. However, in so doing, we will endeavour to ensure that they remain as consistent as possible with the original Ofwat guidelines. This will be important for detailed comparison of the financial performance of the industry in Scotland.

The Ofwat guidelines explain the objectives and principles behind each set of detailed requirements and relate them to the legal framework. The guidelines

contain definitions of terms as well as very detailed guidance on each component of the financial information to be reported. Proformas for each set of information are included.

The individual volumes deal with the following areas:

RAG1 Accounting for current costs and regulatory capital values

- Current cost balance sheet (infrastructure assets, operational assets, other tangible assets, third party contributions and reserves)
- Current cost profit and loss account (adjustments to historic cost operating profit, financing adjustment, exceptional items and extraordinary items)
- Content of accounts (proformas)
- Regulatory capital value

RAG2 Classification of expenditure

- Asset categories
- Expenditure categories
- Proportional allocation

RAG3 The contents of regulatory accounts

- Definition of historical cost accounts and current cost accounts.
- Guidelines on:
 - accounting statements;
 - appointed (core) business;
 - profit analysis;
 - associated companies;
 - publication of statements; and
 - audit

RAG4 Analysis of operating costs and assets

- Analysis of individual activities
- Allocation of costs to categories within activities
- Tangible fixed assets

- Other cost allocations and apportionments

RAG5 Transfer pricing in the water industry

- Principles of transfer pricing
- Principles of market testing
- Partnering
- Principles of cost allocation
- Appointee structure

6.5. Current situation in Scotland

6.5.1 Developments since the 2001 Strategic Review of Charges

Our *Strategic Review of Charges 2002-06* used statutory accounts for the three former water authorities. At that time, our legal remit covered the whole of the authorities' businesses, both core and non-core.

However, before we carried out the *Strategic Review of Charges 2002-06* we established a format for reporting financial information that was similar to the regulatory accounts used by Ofwat. This took the form of detailed breakdowns of costs, incomes, loans, cash flows and other relevant financial information.

The format we used provided us with the necessary detailed information to carry out the Review. Equally, it provided information in a form that was consistent with that used in the water industry in England and Wales. This was important in allowing us to compare financial performance with the companies.

In the *Strategic Review of Charges 2002-06*, we recommended the introduction of accounting separation of key discrete activities. There were three main reasons for this recommendation:

- It was important that customers of the core business pay only for the core service they receive;
- Accounting separation would allow Scottish Water's management to have a better understanding of its costs and, as a result, should facilitate greater efficiency; and

- Accounting separation should lead to a more robust allocation of costs and prices would consequently be less vulnerable to challenge under competition law.

We were therefore pleased when our remit was changed by the *Water Industry (Scotland) Act 2002*. This Act gave us the duty to promote the interests of the customers of Scottish Water's core business. In order to set prices for the core business we will require clear, discrete financial information about the core activities. Our proposed introduction of regulatory accounts will provide this information.

The *Water Services etc (Scotland) Bill* proposes the introduction of competition into part of Scottish Water's current core activities, namely non-domestic retail. (It also proposes that all retail activities currently undertaken by Scottish Water become defined as non-core).

Full details of the proposals will only become clear as the Bill progresses. However, it is already apparent that some form of separate regulation of the retail and wholesale activities is likely to be required. This would mean that our regulatory accounts will have to take account of our need for information on both aspects of the business.

6.5.2 Accounting standards currently in force

Under direction from Scottish Ministers, Scottish Water is required to prepare statutory accounts that are broadly consistent with the various UK accounting standards. These accounting standards are common to businesses across the UK. They have the effect of imposing a common framework and code for reporting financial information.

A common code means that managers, shareholders, owners, customers, analysts and other stakeholders have well-defined and consistent information. This helps them to understand the financial health of businesses, both year-on-year and in the context of other businesses' performance.

The accounting standards include:

- SSAP – Statement of Standard Accounting Practices;
- FRS – Financial Reporting Standards; and

- UKGAAP – United Kingdom Generally Accepted Accounting Practice.

Scottish Water's annual statutory accounts are audited. Broadly, the audit establishes whether the accounts reflect the financial state of the business. Auditors provide an opinion to this effect⁹:

“Financial statements

In our opinion the financial statements give a true and fair view of the state of affairs of Scottish Water as at 31 March 2003 and of its surplus and cash flows for the year then ended; and the financial statements and the part of the Remuneration Report to be audited have been properly prepared in accordance with the Water Industry (Scotland) Act 2002 and directions made thereunder.

Regularity

In our opinion, in all material respects, the expenditure and income shown in the financial statements were incurred or applied in accordance with any applicable enactments and guidance issued by the Scottish Ministers.”

The audit therefore provides a degree of reassurance to the business and its stakeholders.

6.5.3 Limitations of using statutory accounts for regulatory purposes

The statutory accounts, by themselves, are of very limited use for regulation. There are several drawbacks to relying on statutory accounts for regulation. The principal issue is the lack of detail and clarity of statutory accounts.

We can illustrate this problem by comparing the content and layout of statutory accounting tables with those of regulatory accounts for the same business. The examples below are taken from the annual accounts of one of the water and sewerage companies in England and Wales.

Table 6.1 summarises the main elements of statutory and regulatory accounts for water and sewerage companies. From this simple summary alone, it is evident that regulatory accounts provide fuller information.

Table 6.1: A comparison of the main elements of statutory and regulatory accounts

Statutory accounts	Regulatory accounts
Historical cost profit and loss account	Regulatory historical cost profit and loss account ¹⁰
-	Regulatory current cost profit and loss account ¹¹
Historical cost balance sheet	Regulatory historical cost balance sheet
-	Regulatory current cost balance sheet
-	Current cost cash flow
-	Analysis of current cost operating costs by service
-	Five-year rolling current cost profit and loss account
-	Five-year rolling current cost balance sheet

As well as providing more information, regulatory accounts reveal more about the costs of the business. This is very important for effective regulation, because such information allows us to make detailed comparisons of performance. The example below illustrates this. In Tables 6.2, 6.3 and 6.4 we compare the layout of reported cost information in statutory accounts and regulatory accounts.

Table 6.2: Breakdown of operating cost information reported in Scottish Water's statutory accounts (income and expenditure)

Cost of sales
Administrative expenses
Exceptional items

Table 6.3: Breakdown of operating cost information reported in Scottish Water's statutory accounts (note number 5 – staff costs)

Wages and salaries
Social security costs
Pension costs
Less: charged as capital expenditure
Less: seconded staff

⁹ Scottish Water Annual Report and Accounts, 2002-03, page 42.

¹⁰ Historical cost is a method of valuing company assets according to how much they were initially purchased for.

¹¹ Current cost accounting values assets according to how much they would cost to replace at today's prices. Typically, due to the effect of inflation, current cost accounting values assets at a higher level than historical cost accounting.

Table 6.4: Example layout of operating cost information reported in regulatory accounts of the water and sewerage companies in England and Wales

	Service analysis								Business activities		
	Water supply			Sewerage							
	Resources and treatment	Distribution	Water supply sub-total	Sewerage	Sewage treatment	Sludge treatment and disposal	Sewage treatment and disposal	Sewerage service sub-total	Customer services	Scientific services	Cost of regulation
Direct costs											
Employment costs											
Power											
Hired and contracted services											
Materials and consumables											
Service charges											
Other direct costs											
Total direct costs											
General and support expenditure											
Functional expenditure											
Total business activities											
Rates											
Doubtful debts											
Total opex less third party services											
Third party services - opex											
Total operating expenditure											
Capital costs											
Infrastructure renewal expenditure											
Movement in infrastructure renewal prepayment											
Current cost depreciation (allocated)											
Amortisation of deferred credits											
Capital maintenance (excluding third party services)											
Third party services - capital maintenance											
Total capital maintenance											
Total operating costs											
Total operating expenditure above includes reactive and planned maintenance of:											
infrastructure											
non-infrastructure											
CCA (MEA) values:											
Service activities											
Business activities											
Service totals											
Services for third parties											
Total CCA (MEA) values											

These examples clearly demonstrate the differences in the detail and clarity of statutory and regulatory accounts. Differences also extend to the audit process.

Like statutory accounts, regulatory accounts are audited. However, the auditor's opinion contains greater detail and clarity. The following extract is taken from the regulatory accounts of one of the water and sewerage companies.

"In our opinion the Regulatory Accounts for the Company contain the information for the year ended 31 March 2003 to comply with Condition F of the Instrument of Appointment granted by the Secretary of State for the Environment to the company as a water and sewerage undertaker under the Water Industry Act 1991.

In respect of this information we report that in our opinion:

- (a) *proper accounting records have been kept by the appointee as required by paragraph 3 of Condition F of the instrument;*
- (b) *the information is in agreement with the appointee's accounting records and has been properly prepared in accordance with the requirements of Condition F and, as appropriate, Regulatory Accounting Guideline 1.03, Regulatory Accounting Guideline 2.03, Regulatory Accounting Guideline 3.05 and Regulatory Accounting Guideline 4.02 issued by the Regulator;*
- (c) *the regulatory historical cost accounting statements on pages – to – present fairly, under the historical cost convention, the revenues of and costs, assets and liabilities of the appointee and its appointed business in accordance with the company's Instrument of Appointment and Regulatory Accounting Guideline 2.03, Regulatory Accounting Guideline 3.05 and Regulatory Accounting Guideline 4.02 issued by the Regulator;*
- (d) *the regulatory current cost accounting statements on pages – to – have been properly prepared in accordance with Regulatory Accounting Guideline 1.03, Regulatory Accounting Guideline 3.05 and Regulatory Accounting Guideline 4.02 issued by the Regulator."*

Clearly, this auditor's opinion is much more detailed and precise than the audit opinion on the statutory accounts quoted above.

We consider that the lower level of definition and detail in statutory accounts could reduce the effectiveness of regulation. It is for this reason that we are proposing an additional requirement upon Scottish Water to prepare regulatory accounts.

There are other areas where our analysis could be improved by the preparation of regulatory accounts by Scottish Water, including the following:

- **Separation of core activities:** statutory accounts cover the whole Scottish Water business, not just the core water and sewerage business (which is the part of the business that we are required to regulate);
- **Comparability:** statutory accounts use different conventions from those that apply in other regulated utilities, weakening the comparative analysis that underpins target setting;
- **Competition:** costs of different activities are not distinguished in the statutory accounts, so the basis for deriving prices of services is vulnerable to legal challenge; and
- **Monitoring:** significant and complex adjustments have to be made to reported costs to align them with regulatory targets and to track annual progress.

We discuss these issues below.

6.5.4. Separation of core activities

Under the *Water Industry (Scotland) Act 2002 Part 1(2)*, our remit is defined as follows:

The Commissioner has the general function of promoting the interests of customers of Scottish Water in relation to the provision of services by it in the exercise of its core functions.

Core activities need to be separated and appropriately ring fenced, so that we can properly promote the interests of customers of the core business. The introduction of regulatory accounts will maximise clarity around definition of the separated activities.

Currently, only a limited and approximate measure of separation is possible, through unaudited reporting of non-core costs and revenues by Scottish Water in annual regulatory returns. This arrangement is problematic as:

- a) although core activities are defined by legislation in general terms, there are as yet no agreed definitions of exactly what constitutes core activities;
- b) the *Strategic Review of Charges 2002-06* dealt with all areas of business, both core and non-core, and was published before the 2002 Act;
- c) we therefore have to adjust reported numbers to accommodate ongoing changes in the scope of non-core activities since the *Strategic Review of Charges 2002-06*.

6.5.5 Comparability

Our ability to maximise value for money to customers depends in large part on setting challenging but achievable targets on financial performance. In setting targets, it is very useful to assess the progress and level of performance achieved by the water and sewerage companies in England and Wales, and by other regulated utilities.

Regulatory accounts cover all aspects of the water and sewerage companies' finances in England and Wales. This comprehensive information allows Ofwat to compare financial performance fully and objectively, and to set appropriate targets for efficiency, capital investment and sustainable financial indicators. Regulatory accounts will allow us to assess appropriate targets for Scottish Water, but only if we understand in detail Scottish Water's starting position.

In contrast to Ofwat, our performance comparisons between Scottish Water and companies currently require judgements to be applied to the information reported by Scottish Water. The need for judgement may weaken the perceived robustness of the comparisons and so limit the extent of targets that can reasonably be set.

Adjusting statutory accounts in order to bring Scottish Water's information into line with England and Wales may make regulation less transparent. It can also be difficult for Scottish Water to reproduce our adjustments and resulting analysis, which makes it harder for Scottish Water to understand performance from a regulatory perspective. This could reduce the likelihood of regulatory targets being achieved.

6.5.6 Competition

Core activities

Current competition legislation may require Scottish Water to be able to quote and justify wholesale prices for the supply of services. The absence of an audited accounting regime that differentiates wholesale and retail costs, revenues, assets and liabilities could mean that Scottish Water is more vulnerable to legal challenge.

Any future extension to the competitive framework would increase the need for a transparent basis for pricing, particularly if a licensing regime for new retail entrants is envisaged. This would require Scottish Water to declare and justify wholesale prices.

Non-core activities

Scottish Water carries out non-core functions in a competitive market, where it could be open to legal

challenge (again under existing legislation) if it cannot show that those functions are free from cross subsidy. The absence of separate audited accounts may make a challenge more likely to occur and to succeed.

6.5.7 Monitoring

As explained above, our assessments of Scottish Water's progress year-on-year and against targets require us to make adjustments. Such adjustments may also be necessary because of changes in accounting policy and practice. These changes may be perfectly in line with statutory accounting rules but nevertheless we have to unwind any such adjustments in order to be able to make like-for-like comparisons over time.

Regulatory accounts minimise the need for, and extent of, adjustments by predefining the basis on which numbers are reported.

6.6 Implementing accounting separation and regulatory accounts in the Scottish water industry

We are proposing to implement accounting separation and regulatory accounts to inform the *Strategic Review of Charges 2006-10*. We have therefore started initial work on defining the boundary between core and non-core activities and between wholesale and retail activities.

The introduction of robust accounting separation and regulatory accounts will require significant cooperation from Scottish Water. We are grateful for its assistance. As we need to collect cost information that is allocated by Scottish Water to each activity, it is important that the definitions and proformas that we use reduce the possibility of gaps or overlaps in reported information.

Scottish Water's financial systems will also need to be capable of generating reliable information that complies with requirements. We are encouraged that Scottish Water now believes that it will be able to provide most of the required information.

To date, our preparatory work to develop regulatory accounts has consisted of:

- An initial review of the Ofwat Regulatory Accounting Guidelines, designed to test how applicable they are to the Scottish water industry;
- Preliminary discussions with Scottish Water to identify core and non-core functions, based on the legal definition provided by the Water Industry (Scotland) Act 2002¹³
- Development of two draft regulatory accounting tables to capture operating costs for core functions, separated into wholesale and retail activities; and
- Issue of draft tables for operating costs to Scottish Water for comment and completion with information for 2003-04.

In August 2004, we awarded a contract to Ernst and Young LLP and Black and Veatch Consulting Limited to build upon our preparatory work, and to develop the regulatory accounts project further. Specifically, they have been appointed to use their respective accounting and reporting expertise to deliver the following key objectives:

- To identify and formally define the core and non-core businesses carried out by Scottish Water;
- To identify and formally define the retail and wholesale segments of the core business and to provide separate reporting frameworks for these activities;
- To design a series of reporting submissions capable of capturing the information required to analyse and regulate the retail and wholesale segments of the core water industry; and
- To develop a set of regulatory accounting guidelines which clearly explain the objectives and principles behind each submission, and define the nature of the information that each submission should contain.

¹³ Our provisional interpretation of core/non-core activities was outlined in Volume 2 *Our Work in regulating the Scottish Water Industry: Background to and framework for the Strategic Review of Charges 2006-10*, p.122.

Upon completion, the key outputs of this project are as follows:

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

Once completed, the project outputs will be used to inform the current Strategic Review of Charges. Specifically:

- 2003-04 regulatory accounts will be used to inform our draft determinations; and
- 2004-05 regulatory accounts will inform our final determinations.

As such, completed regulatory account submissions will play a crucial role in informing the determination of future prices in the Scottish water industry.

6.7 Question for consultation

1. Do respondents agree with our proposal to require Scottish Water to submit regulatory accounts?

Section 2: Chapter 7

Financial modelling

7.1 Introduction

In this chapter we describe how we will use a financial model to calculate the revenue that Scottish Water needs to raise from customers. The chapter also details our proposed assumptions and the ratios that we will use to determine whether the proposed price caps are consistent with financial sustainability for Scottish Water.

7.2 Background

We have a statutory duty to promote the interests of customers of Scottish Water's core business. One of the ways in which we do this is by ensuring that Scottish Water has sufficient funding to carry out its core functions as a water and sewerage service undertaker in an efficient manner.

Scottish Water's funding comes from two sources:

- revenue raised through charges to customers, and
- borrowing (usually from government).

The revenue that is raised from customers is determined by the price limits that we set for Scottish Water. We use a financial model to calculate the price limits. The model therefore plays a key role in the *Strategic Review of Charges 2006-10*, having an impact on:

- customers – because it determines the limits on charges for water and sewerage services; and
- Scottish Water – because it determines the level of funding available for the business to carry out its core functions.

The financial model has two principal elements:

- calculation of the revenue that Scottish Water requires to carry out its core functions; and
- the tariff basket model, which translates the

revenue collected from customers to the tariffs they will pay.

We will set a price limit for each of the four years covered by the *Strategic Review of Charges 2006-10*. Price limits are forward looking and therefore in setting price limits we have to make a number of assumptions. These assumptions concern both macroeconomic factors and factors that are specific to Scottish Water.

One of the key considerations of our modelling is the financial sustainability of Scottish Water. We use a set of ratios to assess financial sustainability. These ratios are the same as those used by other regulators to assess the financial sustainability of other utilities.

7.3 The financial model

The model calculates the required price limits having taken account of the costs that Scottish Water is likely to incur. Constructed in Microsoft Excel®, the model consists of a series of linked spreadsheets. The model goes forward to March 2025.

At the end of September 2004 we intend to publish on our website both the model itself and a user manual, which will contain more detailed information about the model.

7.3.1 Development of the model

We developed the model using internal resources. It takes account of the proposals outlined in our methodology consultation and has been subject to rigorous internal analysis. This has ensured that all of the formulae perform as we would have expected and that the results are consistent with our expectations when inputting test information.

We asked Ernst & Young LLP to audit the financial model, and will publish the results of this audit later this year.

In June 2004 we provided a draft version of the model to Scottish Water. We also gave Scottish Water an opportunity to comment on the model at a workshop in July 2004.

We believe that our own internal challenge and the detailed scrutiny provided by Ernst & Young LLP's audit should reassure stakeholders that the output of the financial model is reliable. We would welcome stakeholders' views on the model.

7.3.2 Best practice guidelines

The Institute of Chartered Accountants for England and Wales publishes a useful guide on building financial models, *'Spreadsheet modelling best practice'*¹. It provides guidelines on scoping, specifying, designing, building, testing and using spreadsheet models. It recommends that spreadsheet models should make distinct the following processes:

- inputs;
- calculations; and
- results.

Further, it recommends that there should be a title sheet explaining the model; that where possible the spreadsheet should read from left to right and top to bottom; that several worksheets are used rather than one complicated worksheet; and that each row contains only one formula.

We believe that our model is fully consistent with these guidelines and that it complies with best practice.

7.3.3 Structure of the model

The structure of our model follows the guidelines for best practice outlined above. The spreadsheets within the model can be divided into six categories:

- Key – this explains the use of colours within the model;

- Input – these are the sheets into which we will input the information;
- Process – these sheets use input information in calculations that feed into the output sheets;
- Accounting outputs – these spreadsheets show the projected financial statements for Scottish Water. They allow us to understand the minimum amount of revenue required by Scottish Water;
- Main outputs – these worksheets contain financial ratios analysis. These sheets are critical to an understanding of whether the level of revenue is consistent with the financial sustainability of Scottish Water; and
- Variation sheet – this allows the user to understand whether the level of revenue is at the minimum level but also consistent with financial sustainability for Scottish Water.

7.3.4 Information in the model

We provided Scottish Water with the input tables for the financial model as a part of the business plan guidance which we issued in June 2004. The information provided in Scottish Water's business plan will be useful. For example, we will be interested in its assessment of the scope for efficiency. We will rigorously review the information provided by Scottish Water before finalising the information to be input to the financial model.

The model also contains financial assumptions (detailed in a later section of this chapter). These assumptions include information on interest rates and inflation expectations.

All of the input information will influence the final answer that is calculated by the model. We will produce a full audit trail for each input into the model. When we publish our draft and final price limits we will publish our final version of the model with the input information.

¹ Nick and Johnathan Batson, *'Spreadsheet modelling best practice'*, April 1999, available at <http://www.eusprig.org/#DOWNLOADS>.

7.3.5 Changes to the model

We intend to use the audited version of the model when we assess Scottish Water's revenue requirement. However, the model may change after publication, for example as a result of changes following the current methodology consultation.

Given that our proposed approach closely resembles that used by Ofwat for its recent price review, we do not anticipate material changes to the model. However, we would inform Scottish Water about any changes as soon as possible and would offer it the chance to comment on changes.

Any changes that we make would be fully documented and subject to full version control. We would publish any changes, with the reasons for making them, so that all stakeholders have an opportunity to understand how the model has evolved. If necessary we would consult with Ernst & Young LLP on the need to update the audit.

7.4 Calculating the revenue requirement

In Chapter 5 we explained our proposal to adopt a Regulatory Capital Value (RCV) approach to price setting. Under this approach, the revenue requirement is calculated by:

$$\text{Revenue required}^2 = \text{allowable operating costs} + \text{allowable PFI costs} + \text{depreciation} + \text{infrastructure renewal charge} + \text{tax} + \text{cash return on the RCV}$$

Each of these items is discussed below. It should be noted that interest on debt, new debt and capital expenditure are not an explicit part of the calculation of revenue.

7.4.1 Allowable operating costs

Operating costs are day-to-day running costs, including items such as employment costs, electricity, materials, contracted costs, local authority rates, insurance, software licences and vehicle running costs. Bad debt is also regarded as a running cost.

Total operating expenditure includes the costs of providing the base service and net additional running costs associated with improvements. Base service expenditure comprises the cost that is incurred to maintain a constant level of service during the regulatory control period. New operating expenditure includes the efficient increased operating costs resulting from improvements to customer service, higher treatment standards etc. Such new operating expenditure would tend to increase customers' charges.

Efficiency savings in operating expenditure would tend to decrease customers' charges.

Operating expenditure and the associated assessment of efficiency will be discussed in Volume 4 of our methodology. Our financial model takes account of each of the following factors:

- base service operating expenditure and associated efficiencies;
- new operating expenditure and associated efficiencies; and
- the impact of inflation on operating expenditure.

7.4.2 Allowable PFI costs

The revenue requirement takes into account the costs of PFI contracts. Between 1999 and 2001 the former water authorities (now Scottish Water) signed nine PFI contracts for the provision of wastewater assets and services. Scottish Water now pays a single annual fee for the service provided rather than interest, maintenance and operating costs. In 2003-04, Scottish Water paid around £120 million in charges for these contracts.

PFI charges are treated separately from operating expenditure on sewerage because they contain elements of capital and financing costs.

² Cash received from the disposal of assets is deducted from the revenue requirement.

7.4.3 Depreciation

Each year Scottish Water invests to both maintain and improve its asset base. Capital expenditure relating to the replacement of worn-out assets is termed capital maintenance. Investment in improving or increasing the asset base is termed 'quality' and 'growth' investment.

As we discussed in Chapter 3, water and sewerage assets can be divided into infrastructure and non-infrastructure. This distinction is important because we treat them differently when setting price limits.

The level and type of capital expenditure that Scottish Water must make in each regulatory period is determined by Scottish Ministers following public consultation (the Quality and Standards process). The current investment programme – *Quality and Standards II* – is scheduled to run from April 2002 until March 2006.

The next investment period (*Quality and Standards III*) will run from April 2006 until March 2014. *The Strategic Review of Charges 2006-10* will therefore cover the first half of the *Quality and Standards III* period. Ministers will determine the levels of investment required and we will assess the scope for efficiency before inputting information on capital expenditure into the financial model.

We include information on:

- delayed investment from the previous regulatory period;
- claims for efficiency that are unsubstantiated; and
- forecast investment for the current regulatory period, divided between investment in infrastructure and non-infrastructure assets in the financial model.

7.4.4 Delayed investment

Some *Quality and Standards II* investment may not have been delivered before the start of the *Quality and Standards III* period. We propose to assume that any delayed investment will be delivered evenly across the 2006-10 period.

We propose to subtract the post-efficiency value of undelivered investment from the initial RCV. We will then add this back to the RCV as it is delivered. *Quality and Standards II* additions will be depreciated once they are added. This ensures that customers do not pay twice for the same investment outputs.

We do not propose to apply any efficiency targets to undelivered investment. However, we also intend not to make any additional allowance for inflation. Effectively, we are assuming that any undelivered investment has been contracted at a fixed price.

7.4.5 Unsubstantiated efficiencies claimed by East of Scotland Water Authority

In the *Strategic Review of Charges 2002-06*, the capital efficiency targets set for each of the three authorities were the same. However, we explained that the actual percentage targets that were set for the former East of Scotland Water Authority were lower. This reflected efficiencies that were claimed by the authority in defining its investment needs during the second Quality and Standards process. Since the Strategic Review we have attempted to confirm the efficiencies claimed by the authority, but been unable to do so. We can only assume that these efficiencies were not made. It is therefore in customers' interests that Scottish Water is required to improve its future capital efficiency by an amount equivalent to the extra cash made available to Scottish Water in the current regulatory period. The additional savings that will be required amount to £74 million.

In order to allow Scottish Water to plan and deliver the current capital programme more effectively, we have agreed with Scottish Water that we will not reduce the funds available for investment in this regulatory period. Instead, we will increase the capital efficiency targets that are assessed for the next Strategic Review period by £14.8 million a year for the first five years of the review period (that is, £74 million spread over the five-year period).

7.4.6 Investment in infrastructure and non-infrastructure

It is assumed that non-infrastructure assets (generally

those that are above ground) depreciate, ie it is assumed that they have a finite life and that they lose value equally throughout their life. It is important that detailed information is available about the age of the assets in order to forecast the appropriate depreciation. When setting prices, we consider both depreciation of existing assets at the start of the regulatory period and assets that are added during the period.

The method that we propose to use to calculate depreciation for above ground assets is different from that which Scottish Water uses to calculate depreciation in its statutory accounts. The base value for depreciating the assets is not the book value of assets. Instead, the base value of assets that we propose to use for depreciation is the Modern Equivalent Asset Value (MEAV)³.

The gross MEAV is the estimated cost of constructing an equivalent system at current prices, while the net MEAV is the depreciated value to match the remaining life of the current assets. The net MEAV is the starting point for calculating depreciation.

The estimated asset value is then divided into five categories according to its remaining life. We propose to use the same asset life categories and assumed asset life as those that Ofwat uses. These are shown in Table 7.1.

Table 7.1: Asset life categories used in the financial model

Category	Assumed life (years)	Description
Very short	5	Assets having a life of up to five years, eg vehicles and computer equipment.
Short	10	Assets having a life of 6 to 15 years, eg some ICA plant, telemetry, heavy vehicles and plant.
Medium	20	Generally, mechanical assets having a life of 16 to 30 years, eg pumping units and associated electrical plant, process plant, filter bed media, glass coated steel storage tanks.
Medium/long	40	Generally mechanical assets having a life of 31 to 50 years, eg filter bed structures, site fencing.
Long	60	Generally operational structures including service reservoirs, treatment work structures, inter-process pipe work and filter bed structures. Such assets will have a life exceeding 50 years.

We propose to categorise assets that are added during the regulatory control period in the same way and to depreciate them over their assumed life. In any one year, if Scottish Water's capital expenditure on non-infrastructure assets is greater than depreciation it is adding to its non-infrastructure assets.

Assumptions about depreciation affect revenue – and therefore prices – in several ways:

- Scottish Water is allowed to collect annual depreciation from customers, so the higher the depreciation charge the higher the revenue that is required from customers;
- Depreciation is deducted from the RCV each year. This reduces the return on capital that Scottish Water is allowed to collect from customers;
- New non-infrastructure assets are added to the RCV. This increases the return on capital that Scottish Water is allowed to collect from customers; and
- Scottish Water will benefit from the depreciation on new asset additions in additional revenue from customers.

7.4.7 Infrastructure renewals charge

We discussed in Chapter 3 that infrastructure assets need to be treated in a different way from non-infrastructure assets.

In common with the water and sewerage companies south of the border, we will include an Infrastructure Renewals Charge (IRC) in our calculation of prices. The IRC is the notional level of investment required to maintain infrastructure assets.

In any one year the actual level of investment in infrastructure assets is termed the infrastructure renewals expenditure. When we input our assumptions into the financial model, we propose to assume that Scottish Water's projected figures for the IRC will be the same as infrastructure renewals expenditure. We are

³ We are currently consulting on this methodology (please refer to Chapter 3).

assuming that Scottish Water will spend the theoretical level required to maintain the infrastructure assets during each year of the regulatory control period.

7.4.8 Taxation

We do not expect Scottish Water to pay Corporation Tax in the 2006-10 period. We will therefore not include Corporation Tax in the financial model.

7.4.9 Cash return on the regulatory capital value

In Chapter 5 we discussed our proposal to change our approach to price setting and to use the RCV approach. This is consistent with the approach of other utility regulators.

Scottish Water would earn a return for holding its assets. To calculate the cash return on the RCV we would need to set:

- an initial RCV for Scottish Water; and
- the rate of return that Scottish Water should be allowed to earn.

7.4.10 Regulatory capital value

Chapter 8 outlines our approach to establishing an initial RCV. The RCV would change over time; it would be increased by annual investments in water and sewerage assets made by Scottish Water and would be decreased by the level of depreciation of those assets. The effects of inflation, and the efficiency with which new assets are delivered, are also taken into account. This is explained in Chapter 10.

We propose to take an average⁴ of the opening and closing RCVs for each year. The average RCV is the first input to the cash return on the RCV.

7.4.11 Rate of return

We will input an appropriate rate of return to the financial model. In Chapter 9 we discuss how we intend to set this rate of return.

7.5 Financial assumptions

In building our model, we need to make a number of financial assumptions. These are briefly described below.

7.5.1 Inflation

Inflation measures increases in the prices of goods and services. Our assumptions concerning inflation are important because the model projects costs forward over a number of years.

Indexes are used to calculate inflation. In the Strategic Review we propose to use two indexes to measure inflation, namely:

- the Consumer Price Index (CPI) for all non-asset costs; and
- the Construction Output Price Index (COPI), to assess the impact of increases in prices on investments.

7.5.2 CPI

We believe that the CPI is an appropriate measure of inflation for non-capital goods costs. The CPI is now the measure of inflation targeted by Government and the Bank of England. Ofwat currently uses the Retail Price Index (RPI) in its price setting.

We also propose to assume that CPI will be 2% for each year of the regulatory control period. This is in line with the Bank of England's target.

7.5.3 COPI

We propose to use COPI for analysing the effect of inflation on capital expenditure. COPI measures the movement in prices of construction work that is carried out. There are five different indexes that are calculated: public housing, private housing, public non-housing, private industrial and private commercial. Finally there is

⁴ Average RCV = (Opening RCV + Closing RCV) ÷ 2.

an output index called the 'all new construction output index', which is a weighted average of all five previous indexes. We propose to use the latter definition in our Strategic Review.

The Department of Trade and Industry (DTI) publishes these indices on a quarterly basis. We will forecast COPI in the financial model. When we forecast COPI in the Strategic Review we intend to examine by how far and in what direction COPI has diverged from RPI (and latterly CPI). We believe that COPI should track CPI in the long term. We will therefore assess whether future COPI should track downwards or upwards in order to reverse any divergence. If we consider that there has been no material divergence we propose to set COPI at 2% per year.

7.5.4 Dividends

As the owner of Scottish Water, the Scottish Executive could theoretically ask for a dividend to compensate for the ownership risk. We do not expect this to happen, but need to allow for the possibility in our model. Rather than assume a given percentage of revenue paid out in dividends, we have asked Scottish Water to indicate any dividend they would expect to pay.

7.5.5 Cash

We propose to assume that Scottish Water has zero cash balances. Cash was around 0.1% of revenue in 2002-03 and around 1.0% in 2003-04. This assumption is likely to benefit Scottish Water as it would earn interest on any cash balance. Our model would not include any such benefit. We believe that this is a valid assumption that simplifies the model and would not have any material impact on the outcome.

7.5.6 Working capital and other balance sheet assumptions

The most common definition for working capital is current assets minus current liabilities. Current assets are defined as those assets that would be turned into cash in less than one year. Current assets can be cash, debtors, stocks or prepayments. Current liabilities refer

to those liabilities that will mature within one year. These include items such as trade and capital creditors, and short-term debt.

Differences in working capital have a direct impact on Scottish Water's cash flow. These will be forecast in the financial model.

In the model we use different assumptions for each of the accounts mentioned. The cash account assumption has already been explained. Our other assumptions are outlined in Table 7.2

Table 7.2: Balance sheet assumptions

Title	Assumption	Value
Trade debtors	Number of days	35
Stocks	Percentage of operating expenditure excluding PPP	2%
Prepayments and accrued income	Percentage of revenue	5%
Other debtors	Percentage of revenue	2%
Trade & capital creditors	Percentage of capital expenditure	17%
Accruals and deferred income	Percentage of operating expenditure including PPP	30%
Other creditors	Percentage of operating expenditure including PPP	7%

Changes in non-current accounts will also affect the cash needs of the company. On the assets side we have the fixed assets account, which we assume will vary in proportion to the investment programme. On the liability side, there are accounts such as creditors (amounts that have been due for more than one year) and provisions for liabilities. These will be inputs in the model.

7.5.7 Exceptional/extraordinary costs

By definition, extraordinary items are related to transactions that are unusual in nature, infrequent in occurrence and material in amount. For instance, in the last Strategic Review most of the spend-to-save expenses were projected as extraordinary items, as these were considered to be one-off expenses related to reorganisation.

When we assess prices we propose to assume that there are no exceptional items. We will reconsider this assumption if evidence from Scottish Water suggests

that exceptional items may be a material expense.

7.6 Financial sustainability

In this section we explain the financial ratios we propose to use in the *Strategic Review of Charges 2006-10*. The model will automatically calculate these financial ratios. We can compare the outcome of these calculations with the ratios used by Ofwat. Ratios are important tools that allow us to assess the financial sustainability of Scottish Water.

There is no single financial ratio that can fully describe the financial performance of a company. Usually, financial ratios measure the profitability, liquidity and solvency of a company. Ratios can be compared to benchmarks to assess the company's relative financial position. A commercial bank, for example, will use financial ratios to decide whether to approve a loan.

7.6.1 Financial ratios in our Strategic Review of Charges 2002-06

In the last Review, we highlighted several ratios that we believed were important in understanding the relative financial sustainability of Scottish Water. The ratios contained within the Review are shown in Table 7.3.

Table 7.3: Financial ratios calculated in the Strategic Review of Charges 2002-06

	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	47.3%	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 depreciation life (years)	25	23	21	21	22

In addition, we specified that the ideal cash flow cover of interest should be around 1.5 and that we would encourage Scottish Water to achieve this target in the long term. We discussed our use of this ratio in more detail in Chapter 4.

7.6.2 Ofwat's use of financial ratios

Ofwat has a duty to ensure that an efficient company can finance its functions. Ofwat therefore uses financial indicators to assess the financial sustainability of water and sewerage companies. Ofwat does not prescribe an optimal capital structure or preferred rating for company debt, but it does use financial ratio comparisons to ensure that a company will be able to access the capital markets.

Ofwat consults with the capital markets on the appropriate financial ratios for the regulatory capital period. We propose to compare Scottish Water's financial ratios with those used in Ofwat's last two price determinations:

- 1999 price review – covering the period 2000-05; and
- 2004 price review – covering the period 2005-10.

Ofwat set out a list of the financial ratios that it had taken into account in setting price limits at the 1999 review in its report, *'Final determination: Future water and sewerage charges 2000-05'*. These ratios are shown in Table 7.4.

Table 7.4: Ofwat's target ratios for 2000-05

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

In *'Future water and sewerage charges 2005-10: Draft limits'*, Ofwat outlined the financial indicators that it has used to set prices for the next regulatory period. Table 7.5 shows these ratios.

Table 7.5: Ofwat's draft target ratios for 2005-10

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

Ofwat outlined its reasons for changing the financial ratios in its MD190 letter⁵. Its reasoning was based on a publication by Moody's, *'The UK water sector: financial parameters and structural enhancements for leveraged financings – rating methodology'*⁶. The ratios have changed because the rating agencies have become more concerned about cash based ratios and gearing measured as a percentage of RCV. The post-maintenance cash interest cover ratios are also now considered to be more significant.

7.6.3 Our proposals for the Strategic Review 2006-10

We propose to adopt the ratios used by Ofwat in its price determinations for 2005-10. We would therefore intend to target the same levels that Ofwat has targeted. Where Ofwat has stated that a target is "around" a certain level, we assume that the ratio for Scottish Water should be within 25% of the target. We would change price limits to ensure that Scottish Water remains compliant with each of these ratios, except debt/RCV (leverage). This is because Scottish Water has no equity finance.

We also propose to publish the two debt payback period ratios and the cashflow to capital expenditure ratio that Ofwat used for the 2000-05 regulatory period. It would be desirable for Scottish Water to remain within these targets. However, we will not change price limits to ensure compliance with the targets for these ratios. This reflects the capital market's view that these ratios are now outdated. We believe that it is useful to continue to

monitor these ratios to ensure consistency in our approach to financial sustainability.

The following paragraphs explain how each of these ratios will be calculated⁷ and their significance. The financial model manual explains in detail how each of the inputs for these ratios is calculated.

7.6.4 Cash interest cover (2004 price review)

This formula calculates the number of times the profits of one year (generated from operations and after paying any taxes) can cover interest expenses of the same year. A number of 1 would mean that the company generated enough cash to cover interest expenses. This ratio does not take into account any expense on capital. Ofwat expects this financial ratio to outturn at around 3 times for companies south of the border.

Cash interest cover will be calculated as follows:

$$\frac{\text{Net cash flow from operations} - \text{taxes}}{\text{Interest paid}}$$

7.6.5 Adjusted cash interest cover (2004 price review)

This ratio calculates the number of times that interest can be paid out of the profits in one year, adding back maintenance. Ofwat differentiates between maintenance charges and maintenance expenditure and calculates two separate ratios. Throughout the financial model we have assumed that the maintenance charge (infrastructure renewals charge) is the same as infrastructure renewals expenditure. We will correct for any material differences from this assumption at the next Strategic Review through a process of logging up and down⁸. We therefore only calculate one ratio.

Ofwat expects companies to achieve a ratio of around 1.6 times for the maintenance expenditure ratio and around 2 times for the maintenance charge ratio. We

⁵ MD 190, 'Further guidance to companies for final business plans'. March 2004.

⁶ Moody's Investors Service. July 2002.

⁷ Unlike Ofwat, we do not include interest received as income, as the projected amounts are not expected to be material.

⁸ This process is explained in Chapter 11.

propose to use 1.6 times as the appropriate target for Scottish Water.

The adjusted cash interest cover ratio will be calculated as follows:

$$\frac{\text{Net cash flow} - \text{depreciation} - \text{infrastructure renewals expenditure} - \text{tax}}{\text{Interest paid}}$$

7.6.6 Funds from operations to debt (2004 price review)

This ratio measures the percentage of outstanding debt that can be covered by the funds from operations generated over the year. Ofwat expects this ratio to be greater than 13%.

The funds from operations to debt ratio is calculated as follows:

$$\frac{\text{Net cash flow from operations} - \text{taxes} - \text{interest paid}}{\text{Net debt}}$$

7.6.7 Retained cash flow to debt (2004 price review)

This ratio measures the ability of a company to pay its debt back from cash retained within the business. The output is a percentage; Ofwat expects the companies to achieve a ratio of no less than 7%.

The ratio is calculated as follows:

$$\frac{\text{Net cash flow from operations} - \text{taxes} - \text{dividends}}{\text{Net debt}}$$

7.6.8 Gearing (2004 price review)

This is a measure of Scottish Water's level of indebtedness. It is the total debt divided by the RCV. Ofwat expects companies to maintain a ratio of below 65%.

We will monitor this ratio, but we do not expect Scottish Water to decrease its leverage levels significantly.

The ratio is calculated as follows:

$$\frac{\text{Net debt}}{\text{RCV}}$$

7.6.9 Debt payback period (EBITDA basis) (1999 price review)

This is a measure of how many years it would take a company to pay back its debt from earnings before interest, tax, depreciation and amortisation:

$$\frac{\text{Net debt}}{\text{Net cash flow from operating activities}}$$

7.6.10 Debt payback period (EBDA basis) (1999 price review)

This is a measure of how many years it would take a company to pay back its debt from earnings before depreciation and amortisation but after interest and tax:

$$\frac{\text{Net debt}}{\text{Net cash flow from operating activities less interest less tax}}$$

7.6.11 Cash flow to capital expenditure 1999 price review

The cash flow to capital expenditure ratio measures how much of the capital programme is being paid out of current cash flows:

$$\frac{\text{Net operating cash flow from operating activities less tax less interest}}{\text{IRE plus other asset additions less asset disposals}}$$

7.7 Calculating customers' charges

We have described the financial model that we will use to calculate the amount of revenue Scottish Water needs to raise from customers.

After we have established the revenue required, we need to translate this revenue into customers' charges. To do this we use the tariff baskets. The tariff baskets require us to take account of any underlying changes in the customer base that would either increase or decrease the change in prices necessary to match the

change in revenue required. For example, the number of Council Tax Band D equivalent households is increasing at around 1% a year. This means prices for household customers have to increase by less in order to match the revenue required.

Price limits will be applied to primary income only⁹. We propose to subtract the costs associated with providing secondary services from the revenue requirement before matching required revenue to expected revenue. We will ask Scottish Water to forecast its expected costs of providing secondary services. We will also require Scottish Water to justify its assumptions and assess whether or not they are appropriate.

7.7.1 Changes in customer base affecting revenue

We begin by forecasting what the revenue would be if tariffs were kept constant each year. We multiply the tariffs by the relevant tariff multiplier¹⁰.

We will ask Scottish Water for a projection of the relevant tariff multiplier for each tariff. We expect these projections to be based on sensible assumptions and to be justified by reference to historical trends. We would propose to modify any tariff multipliers that we do not consider to have been appropriately justified. If we do modify a multiplier, we will outline our reasons in the *Strategic Review of Charges 2006-10*.

The following example covers charges for unmeasured customers, who pay a fixed charge for connection and a charge based on their rateable value.

Table 7.6: Example of calculation of expected revenue

	Year 0	Year 1	Year 2
Fixed rate	£100	£100	£100
Rateable value rate	£0.1/£1 of RV	£0.1/£1 of RV	£0.1/£1 of RV
Number of customers	1,000	1,100	1,120
Total rateable value	£5,000,000	£6,000,000	£6,050,000
Fixed revenue	£100,000	£110,000	£112,000
Rateable value based revenue	£500,000	£600,000	£605,000
Total revenue	£600,000	£710,000	£717,000
Percentage increase	-	18.3%	1.0%

In this example the revenue from unmeasured customers would increase by 18.3% then 1% if Scottish Water did not change its tariffs. We would repeat this calculation for all tariff baskets¹¹. The result is the expected revenue of Scottish Water for the regulatory control period.

The expected revenue with no tariff change has to be compared with the required revenue that was forecast in the financial model. We then need to calculate the percentage increase in expected revenue required to match the revenue requirement. Table 7.7 shows a worked example.

Table 7.7: Changes in expected revenue (with no tariff change) to match required revenue

	Year 1	Year 2
Previous year revenue	620,000	760,000
Percentage increase in revenue from customer base	18.30%	1.00%
Revenue without tariff change	733,460	767,600
Required revenue (from financial model)	760,000	780,000
Total price increase required	3.62%	1.62%
Inflation	2.00%	2.00%
Weighted average increase (the k factor)	1.62%	-0.38%

⁹ Primary income refers to tariff charges for the provision of water and waste water services. Secondary income is income collected for all services not defined as primary services. For instance, secondary income refers to charges for water for building work, caravans, field troughs, outside taps, septic tank services and sewerage connections. In the year 2003-04 the percentages of primary and secondary income to total income were 96% and 4% respectively.

¹⁰ A tariff multiplier is the appropriate unit that a tariff is multiplied by to calculate a bill. For example, this may be the rateable value, the number of connections or the volume of water consumed.

¹¹ Tariff baskets are explained in Chapter 12.

7.7.2 Understanding the effects of increases on charges for individual customers

Scottish Ministers have asked us to prepare the *Strategic Review of Charges 2006-10*. As part of this Review, we have been asked to set charge limits for various customer groups. We will therefore need to define these groups and to model the effects of increases. Broadly, we will follow the process we have outlined for setting the weighted average price increase for the whole customer base, but do so for individual customer groups. Our aim will be to meet the objectives set by Ministers in their statements on the Principles of Charging in January 2005.

7.8 Summary

Our financial model will provide a reliable, transparent and auditable basis for price setting. We believe that our assumptions are prudent and appropriate but welcome views from respondents on the proposals in this chapter.

7.9 Questions for consultation

1. Do respondents agree with the financial assumptions that we propose to make?
2. Do respondents agree with our proposal to use the Ofwat ratios as the primary indicator of financial sustainability? If not, which ratios should we use?

Section 2: Chapter 8

Establishing an initial RCV

8.1 Introduction

In Chapter 5, we outlined our proposed approach to setting prices. We believe that the price setting process will be more transparent if we establish a Regulatory Capital Value (RCV) for Scottish Water. The cash return allowed on this RCV will form a core element of the price setting approach. This will be consistent with the use of an RCV by other utility regulators in the UK, and with the views of the Competition Commission (formerly the Monopolies and Mergers Commission).

As yet, no RCV has been determined for Scottish Water; in this chapter we discuss the potential approaches we might take in establishing an initial RCV. Chapter 10 examines how the value of the RCV will change over time as a result of additions to the asset base and depreciation of the assets that make up the asset base.

There are four broad approaches that can be used to establish the initial RCV for a regulated utility in the private sector:

- The accounting approach.** The RCV can be constructed by considering the accounting value of a company's individual assets. By adding up the values of individual assets we can build up a picture of the overall asset value of the company. This approach is also referred to as the 'asset based' approach;
- The market value approach.** A second way to value the RCV is to consider the value that financial markets place on the firm. The value placed on the company by the stock market is known as the equity value. The total value of a firm is the market value of its debt added to its equity value;
- The comparator approach.** It is possible to set an RCV by comparing Scottish Water with other similar organisations. The comparator company should carry out the same activities and provide the same services as the utility in question. Ideally, the comparator should be a similar size as the utility, although the observed RCV can be scaled to take account of any difference; and
- The discounted cash flow approach.** The fourth approach to setting an initial RCV considers the discounted value of the cash flows generated by the assets. This method of asset valuation is based on developing a financial model of the company over a given period, typically 20 years. An assessment is then made of revenues minus costs over the period. The estimated RCV is the net present value of the revenues and costs.

Most UK regulators used the second approach to estimate the initial RCV of their regulated businesses. In the electricity, gas, telecommunications and rail industries, and in most of the water industry outside Scotland, the initial RCV was determined as the value of equity plus the value of debt. There were, however, some differences in the way that the approach was applied. For example, in most cases the equity price was taken at the close of the market on the day of the sale, whereas for the water industry in England and Wales an average price over the first 200 days of trading was used.

Although the market-based approach is the one that is most commonly used, it is obviously not possible to apply this method for a public corporation such as Scottish Water. There is no market value of equity to form the basis of an estimate of RCV. We therefore need to use an alternative method to set an initial RCV for Scottish Water.

In the remainder of the chapter we consider the approaches used by Ofwat for determining initial values for the water and sewerage companies and the water only companies. We then set out the options for estimating Scottish Water's initial RCV which we believe could work. We would welcome the views of stakeholders.

8.2 The water industry in England and Wales

8.2.1 Ofwat's approach

At the time of privatisation in 1989, the Secretary of State for Environment and the Secretary of State for

Wales assessed an asset value for each water and sewerage authority. In advance of flotation there was no market evidence to value the authorities, and the book value of assets was not considered to provide a reliable guide to the current market value. The Secretaries of State therefore valued the authorities on the basis of the cash flows that would have been generated had they remained in the public sector. The resulting values were known as the 'indicative values'.

This approach, however, appeared to undervalue the companies when compared with subsequent market evidence. Ofwat therefore consulted on the appropriate way to set an initial capital value in the run-up to its 1994 price review. In November 1992, Ofwat issued a consultation document, *'Assessing capital values at the periodic review: a consultation paper on the framework for reflecting reasonable returns on capital in price limits'*, which considered the following key issues:

- The use of market evidence on company values, both at the time of initial price setting and at the time of the periodic review;
- Accounting treatment of possible advancement of price limits to achieve satisfactory financial profiles. This concerns the need to make an adjustment to the allowed price limits so that the companies' financial ratios are viewed as acceptable by financial markets, given the regulator's duty to ensure that properly managed companies can access the capital markets; and
- How differences between expectations and outturn should be handled. In other words, how price limits should reflect changes in the planned level of outputs and differences in costs (either because of changes in efficiency or because general price movements were different from those expected).

It is the first issue which is relevant to establishing an initial RCV for Scottish Water. With respect to the water and sewerage companies in England and Wales, the consultation stated:

"At initial price setting, the Secretaries of State had to make an assessment of the value of existing assets in establishing the overall return required by water companies. At the Periodic Review, the Director has some market evidence which can be used more directly, at least in the case of the water and sewerage companies. There are, nonetheless, a variety of ways in which these company values might be measured.

Market evidence relates principally to the equity component of a company's capital. But the reasonable return on capital needs to remunerate both investors and creditors. To determine the total value, the value of debt therefore has to be added (or any cash balances deducted). In principle, the market value of debt should also be used; in practice, only book values are readily available.

The proceeds from the sale of the water and sewerage companies were around £5.2 billion. In establishing the appropriate initial value for equity it is appropriate to make some allowance for the expected premium on flotation. One approach would be, as suggested by the NAO report¹, to consider the market capitalisation at the end of the first day's trading. This was £6.1 billion². The handling of the cash injection of £1.5 billion is more problematic. On one view, it resulted in a permanent reduction in price limits, and should be regarded as a source of finance for new capital expenditure on which the company should not expect a return; on another, it merely changed the profile of charges, without affecting company value."

With respect to the water only companies in England and Wales, the consultation stated:

"The comparable assessment of the values of water only companies is less obvious, since these companies were not floated and, in many cases, are not currently quoted or widely traded. There are therefore problems in interpreting available share price information, and alternative approaches may be required. The Director is considering this matter further in conjunction with those companies."

¹ *Sale of the water authorities in England and Wales*, February 1992.

² The NOA report indicates that the average premium, after adjustments for general movements in share prices, was 8.7%, within the 10% target set by the Department of Environment and the Welsh Office.

The periodic review document, *'Setting price limits for water and sewerage services: the framework and approach to the 1994 periodic review'* set out Ofwat's conclusions following the consultation. This formalised Ofwat's use of the RCV to determine capital costs for the purposes of price regulation. This approach was used at the 1999 periodic review and again at the 2004 review.

At the 1994 price review, Ofwat discussed two approaches that could be used for estimating the initial value of the RCV. The first approach was the accounting approach, which used the asset values reported in historic cost or current cost accounts. The second approach was the market valuation approach.

Ofwat's 'initial market value' approach in setting the initial RCV for water and sewerage companies is summarised as follows:

- The initial market value is the initial capitalisation, based on share prices adjusted for the part-paid nature of the shares, plus any debt and deduction of the cash injection;
- In considering what needs to be remunerated, the value of debt in the company's balance sheet is included. Borrowing cost, as well as dividends, is part of the financing costs that must be met from the overall return on capital;
- Cash balances are deducted in determining the initial value. Until used to purchase fixed assets, these cash balances were remunerated by interest receipts;
- For the value of equity, a number of measures of initial capitalisation could be taken. For water and sewerage companies, Ofwat adopted the market value based on share prices averaged over the first 200 days of trading as offering the most reasonable measure of initial share value to be remunerated; and
- For the value of debts, Ofwat would have used the market value in principle, but in practice only book values were readily available.

It was practical to carry out this exercise on the water and sewerage companies. However, as noted above, dealing with the water only companies was more problematic because reliable market data was not available.

Ofwat therefore established the RCV for water only companies using water and sewerage companies as comparators. They argued that this approach was consistent with the general approach to estimating the RCV for privatised industries and was relatively straightforward to apply. To apply the comparator approach, Ofwat assumed that the ratio of 'market value' to 'current cost accounting (CCA) asset value' was the same for the water only companies as the average for the water and sewerage companies.

Ofwat recognised, however, that such an approach presented practical difficulties. As it explained:

- the ratios for individual water and sewerage companies vary significantly;
- the approach could give only a broad indication of the comparable initial RCV; and
- at the initial price setting, the Secretary of State identified alternative measures of the indicative value for the water only companies, which in some cases were significantly different from each other.

8.2.2 The Monopolies and Mergers Commission (MMC) view of Ofwat's approach

The Monopolies and Mergers Commission (now the Competition Commission) is the body to which the water companies can appeal if they disagree with Ofwat's price determinations. The MMC has the authority to redetermine an appellant company's price limits after examining Ofwat's review in detail. After an investigation it comments, in a published report, on the suitability or otherwise of each element of Ofwat's methodology.

Following the 1994 periodic review the MMC reported on the determinations of South West Water and Portsmouth Water. In its reports, the MMC broadly endorsed Ofwat's approach to the RCV.

With respect to the initial value of the RCV the MMC stated³:

“At least as important as the issue of the cost of capital is that of the capital base to which it should be applied. The former water and sewerage authorities were privatised at some 15 per cent of their then current cost book value. There is clearly no justification for applying the cost of capital to the full current cost value of the asset, which would result in significant redistribution of income from consumers to shareholders; nor, given the long life of assets and the sufficiency of funds to cover depreciation of existing assets and renewal of infrastructure assets, is there any economic reason to do so. On the other hand, it is clearly necessary to apply a capital base which allows existing shareholders a reasonable return; uncertainty over returns to shareholders would itself jeopardise the attraction of new capital to the company.”

As part of the appeals to the MMC in 1995, the water industry trade associations objected to Ofwat's calculation of capital value and suggested that full indicative values should be adopted. They argued that the average market value of equity over the first 200 days of trading in company shares (less any net cash position) was not a fair reflection of the true value of the companies for the purposes of setting future price limits. As we have seen, the MMC rejected any valuation that does not reflect how much investors paid for the companies.

The trade associations also complained that Ofwat's approach had been materially different from the approach taken by the Director General of Electricity Supply in determining price controls for the electricity distribution businesses and from the approach taken by the MMC in its report on British Gas. The water trade associations were concerned that they could be disadvantaged in the long term relative to other regulated utilities by unjustified variations in approaches towards common issues taken by the various regulatory bodies. However, the MMC also rejected this complaint, explaining that the different circumstances of the water industry justified the different approach.

“The treatment adopted by the Director differs from that put forward by the MMC in the context of the Gas inquiries. In the Gas reports, we acknowledged that the appropriate value for the ratio of stock market valuation to CCA values (referred to as the market to asset ratio – MAR) could not be precisely calculated. In the context of that inquiry (including other financial factors), we suggested adoption of a ratio similar to that prevailing some six months prior to the start of the inquiry and we also proposed a somewhat different approach to treatment of investment, allowing for all investment rather than net investment in calculating subsequent additions to the asset base. The circumstances of the water industry are different, in particular the extent of the Director's involvement in the investment programme of the companies, both in requiring that particular investment programmes are undertaken, and in disallowing investment in certain cases over and above the statutory requirements in setting prices.”

8.3 Potential options for setting Scottish Water's initial RCV

8.3.1 Introduction

At the last Strategic Review of Charges we used a cash-based approach to assess the industry's revenue requirement. At this Review we propose to adopt the RCV approach.

As we have seen above, there are a number of approaches that could be used to set Scottish Water's initial RCV. The most common approach, which uses the market value of the firm's equity plus the value of debt, cannot be applied. The three remaining approaches to establishing an initial RCV are:

- asset based approaches;
- comparator approaches; and
- discounted cash flow approaches.

³ *South West Water Services Ltd: A report on determination of adjustment factors and infrastructure charges for South West Water Services*, MMC, 1995.

8.3.2 Asset based approaches

In Australia regulators have tended to use asset based approaches. There are several different asset based approaches. Four common approaches are:

- depreciated actual cost;
- depreciated indexed historical cost;
- depreciated optimised replacement cost; and
- modern equivalent asset value.

Depreciated actual cost (DAC)

The depreciated actual cost approach is the simplest of the asset based approaches. The DAC is the value that would result from taking the historic cost value of the fixed assets and subtracting the accumulated depreciation for those assets.

In accounting terms, the historical cost value of an asset is the original cost of the purchase, delivery and installation of an asset. In contrast, the current cost value of an asset is the original cost in current price terms. Supporters of depreciated actual cost argue that if regulation is to act as a surrogate for competition, the asset valuation methodology should be the same as that used by the private sector. In Australia, most listed companies use depreciated actual cost as a basis for recording asset value.

The simplicity of the DAC approach makes it attractive. However, the use of a simple historic cost measure for the RCV raises a number of issues:

- The DAC approach does not allow for the impact of inflation on asset values. Over time the money value of all assets tends to increase, in just the same way that the prices of the goods and services that we buy in the shops tends to increase. If the prices of all goods and the values of all assets tend to increase in line with inflation, we might expect the same to be true for the RCV as well. This is important because, for a given rate of return, the

total return will be lower if the asset base has not been adjusted for inflation;

- The DAC approach does not allow for the impact of innovation asset values. Innovation means that a modern asset can deliver the same output more cheaply and more efficiently than an old asset. For a given rate of return, the total return will be higher if innovation is not taken into account when valuing the asset base; and
- The DAC approach does not take account of efficiency.

It is also argued that DAC generally bears little resemblance to the economic value of the assets, in the sense that it bears no direct relationship to future cash flows that the assets will generate in their normal use.

Depreciated indexed historical cost (DIHC)

Some regulators consider DIHC as a useful reference point for setting the initial capital base. The DIHC approach adjusts historical asset values to take account of inflation by applying an appropriate inflation index. The inflation index takes account of the increase in capital prices experienced by the economy as a whole. One index that could be used for making this adjustment is the Capital Output Price Index.

The DIHC approach is one form of current cost valuation. As a result of applying the inflation adjustment the asset valuation will be higher than it otherwise would be. It is, however, more likely to reflect the actual current value of the assets.

Depreciated optimised replacement cost (DORC)

The DORC methodology focuses on the physical attributes of the assets. The DORC is the net current cost of replacing an existing asset with an asset that has similar service potential. The valuation has two important characteristics:

- The potential replacement assets take account of innovation; and
- The new asset base incorporates opportunities to optimise the configuration of the network.
An optimised system is a reconfigured system designed to serve current demand plus the expected growth in demand as efficiently as possible over a specified period. This method excludes any unused or under utilised assets beyond the specified planning horizon.

Calculating the degree of optimisation is a contentious issue. On the one hand utilities are faced with the possibility that they will recover insufficient depreciation if the potential for optimisation is overestimated. On the other hand, customers will be concerned that charges are higher than they need to be if the potential for optimisation is underestimated.

The DORC approach is difficult to calculate. It is appropriate in a mature industry with well-developed asset registers and well-defined analytical processes for evaluating over-design, capacity and redundant assets. This may rule this method out for setting the initial RCV of Scottish Water.

Modern equivalent asset valuation (MEAV)

Similar to the DORC approach, the MEAV methodology values the assets on the basis of replacing the existing assets with a technically up-to-date new asset with the same service capability. It further allows for any difference in the quality of output and in operating costs. Net MEA value is the gross MEA value net of accumulated depreciation.

MEAV is most suited for industries that use long-lived assets, such as the water industry, where the technology behind these assets is steadily (but not rapidly) evolving. It is used by Ofwat and other utility regulators in the UK as it provides an up-to-date valuation of the asset base; some of which will have been purchased and installed many years ago, making the original acquisition cost a poor indicator of current value.

We ask Scottish Water to provide a gross and net MEA value as part of its regulatory return to us. One concern would be that the reported MEAV has been rather volatile in the last few years. However, using the net MEAV as an indicator of the initial RCV may be relatively straightforward.

8.3.3 Comparator approaches

We could use the comparator approach, which is consistent with the approach Ofwat used to set the initial RCV of the water only companies. To do so, we would need to identify companies that are broadly comparable to Scottish Water. Ideally, the comparator should have comparable business risk exposure, should have similar core and non-core business lines, and should be of a similar size. Two sets of information would need to be available for the comparator company:

- First, a financial measure that is also available for the utility (ie Scottish Water) should be available for the comparator. This financial measure could be the book value of debt, the book value of fixed assets or the current cost accounting value of fixed assets; and
- Second, a financial measure that is relevant to estimation of the RCV should be available for the comparator. If the comparator were regulated and had an RCV this could be the RCV itself. If the comparator had no RCV it could be an equity value for the firm.

We would then consider the relationship between various financial measures for the comparator firm. For example, if we had information on the value of fixed assets and on the market value of equity we could calculate the ratio of market value to fixed asset value.

If the comparator company is similar to Scottish Water we could assume that the same relationship would hold for Scottish Water. We can then use our knowledge of the value of Scottish Water's fixed assets to establish the initial RCV.

The water and sewerage companies in England and Wales would provide the most obvious comparators for Scottish Water. We believe that there are a number of ways that we could look to set an initial RCV for Scottish Water based on comparison with the companies south of the border.

The options would include setting the initial RCV for Scottish Water by making comparisons with:

- asset bases (in terms of both value and structure);
- non-infrastructure capital investment;
- Welsh Water’s debt to RCV ratio;
- companies’ funding costs of RCV ratio (ie debt and dividends); and
- assets relative to the type and number of customers served.

The options would also include comparing the factors outlined above historically with those for Scottish Water today, in order to reflect the opportunities that Scottish Water has had to transform its operations.

Each of these comparisons is likely to yield different answers. If we use this method, we are likely to consider using average, median or mode calculations in order to finalise an initial RCV for Scottish Water.

8.3.4 Discounted cash flow approaches

The final option that we propose to consider is the discounted cash flow method of asset valuation. We would use our financial model to calculate the current value of Scottish Water.

In order to calculate a value we would have to consider the value of Scottish Water today. We can calculate this by keeping prices consistent in real terms, assuming that operating and PPP costs increased in line with inflation, and that capital expenditure is equal to depreciation. The cash flow of Scottish Water would then equal:

Revenue – operating costs – PPP – capital expenditure
= cash flow for valuation purposes

We would then use an appropriate discount rate to assess a value for these cash flows in current money.

Discounting future cash flows at an appropriate rate takes account of profits that will occur in the future. This discount rate recognises that £1 of profit in the hand today is worth more than the promise of £1 of profit in one year’s time. Likewise, the promise of £1 of profit in one year’s time is worth more than the promise of £1 of profit in two year’s time. The discount factor works by scaling down the value of the profit by a small amount more for each year that it will occur in the future. The value today is retained by totalling the discounted future profit for each year.

There are a number of difficulties in using the discounted cash flow method to establish an initial RCV. There are the obvious assumptions that have to be made to assess future cash flows. For example: Are the assumptions on revenues and costs realistic? Should capital expenditure take account of innovation?

Perhaps even more problematic is the choice of an appropriate discount rate. The higher the discount rate, the lower the initial RCV. As the RCV is a factor in calculating the resources that are required to finance current and future assets, it follows that a lower RCV would require a higher rate of return for the industry to be funded on a sustainable basis. It would be difficult to justify using a different rate of return and discount rate for establishing the RCV, because that would introduce a degree of circularity into the calculation that is not desirable.

8.4 Summary

As we explained in Chapter 5, our proposal to use the RCV approach to price setting will require us to set an initial RCV for Scottish Water. We are unable to use the market based approach of other regulators because Scottish Water is in the public sector.

We believe, however, that other methods are available which will allow us to set a robust initial RCV for Scottish Water, namely an asset value approach, a comparator approach and a discounted cash flow approach.

We are encouraged that Ofwat has used the comparator approach successfully in setting the initial RCV of the water only companies. It could also be useful to draw on experiences in Australia in setting RCVs for public sector companies.

8.5 Questions for consultation

1. Do stakeholders agree that there are broadly three ways to establish an initial RCV for Scottish Water?
2. Which method would stakeholders see as the most reliable, and why?

Section 2: Chapter 9

The allowed rate of return

9.1 Introduction

In Chapter 5, we outlined our proposals to switch to a Regulatory Capital Value (RCV) approach in setting prices at the Strategic Review of Charges 2006-10. The RCV approach separates the cash cost of replacing assets (depreciation) from the financing and management costs. These financing costs and management costs are the cash return on the regulatory capital value. We explained that we would estimate the cash return on the RCV using the formula:

$$\text{Cash return on the RCV} = \text{RCV} \times \text{Allowed rate of return}$$

In Chapter 8 we explained how we intend to set an initial RCV. In the private sector, a regulator sets an allowed rate of return. This is often referred to as the cost of capital. The regulator will set this rate of return to reflect current and expected market conditions. The regulator has a duty to set an appropriate rate of return that allows an efficient company to properly finance its functions. The company is free to choose a mix of debt and equity funding, but its rate of return is capped (unless it outperforms efficiency targets).

In the public sector, the regulator is not able to set the rate of return based on his observation of the cost of capital in the market. Scottish Water’s cost of debt is set by Government. As a public sector organisation, Scottish Water has no contributed equity capital, although it generates trading surpluses and reinvests these proceeds.

This chapter outlines our proposals for how we might arrive at the appropriate rate of return in the Strategic Review. It begins by explaining the rate of return; it then reviews how regulators have set the allowed rate of return for companies in the private sector. The chapter concludes by outlining how we propose to set the allowed rate of return in the Review. We welcome views from all stakeholders on our proposed methodology.

9.2 The allowed rate of return

9.2.1 What is a rate of return?

A simple example of what the rate of return means would be to consider the interest that is earned on savings in a bank account. Say, for example, that we deposited £200 in a bank at the start of the year and at the end of the year the bank statement says there is £210 in the account. We can calculate the rate of return as follows:

$$\begin{aligned} \text{Rate of return} &= \frac{210 - 200}{200} \times 100\% \\ &= \frac{10}{200} \times 100\% \\ &= 0.05 \times 100\% \\ &= 5\% \end{aligned}$$

In the above example, calculating the rate of return in the year is a relatively straightforward exercise since we know the values at the start and at the end of the period. The bank sets a rate of return that it believes will allow it to attract funds. The bank will make use of these funds to generate a profit.

In a similar way, we need to set a rate of return that will allow Scottish Water to cover its costs, invest for the future and remain financially sustainable.

9.2.2 What is an allowed rate of return?

The allowed rate of return is the rate of return that we believe Scottish Water requires in order to meet the objectives that have been set by Scottish Ministers.

If we set the allowed rate of return at too low a level, there is a risk that Scottish Water would not have sufficient funds to meet its obligations. This could result in debt increasing to unsustainable levels. This would benefit current customers, but would penalise future customers. Alternatively, it could result in a failure to

deliver environmental, public health or customer service benefits. Customers would pay lower charges if the rate of return was set too low, but they would also receive a poorer service.

If we set the allowed rate of return at too high a level, customers will pay more than they need to. This could act as a disincentive on management to achieve efficiency targets. This would mean that customers pay more than is necessary in the medium term. Alternatively, the level of outstanding debt could decline significantly relative to the asset value of the company. This would penalise current customers to the benefit of future customers.

Our objective therefore has to be to ensure that we set an allowed rate of return for Scottish Water so that it can finance its efficient operation.

9.2.3 What is a weighted average cost of capital?

The Weighted Average Cost of Capital (WACC) is the overall cost of capital for a firm. It takes account of the capital structure of the firm (ie the market value of its debt and equity) and the rates of return it pays on both its debt and equity.

Retained earnings and share issues are examples of equity. Investors normally hold equity because they expect that they will earn dividends or because they expect that the shares will increase in value.

A private firm can also borrow, by issuing bonds or commercial paper or by seeking a loan from bankers. The firm will have to repay the initial amount of money borrowed at the end of the loan term, and meet interest costs as they become due.

Investors will seek a higher return if they consider that the investment carries a higher level of risk. By risk, we mean the possibility that the investor will not get back some or all of the money invested.

Debt is usually viewed as being less risky than equity. This is because debt normally carries a defined annual

rate of interest and in the event of bankruptcy debt holders get paid before shareholders. Equity also pays a less certain amount each year (dividends are at the discretion of the firm). Investors therefore typically require a greater return from equity of a firm than from its debt.

However, as the amount of debt a firm has increases, so does the risk that a firm will not be able to meet its interest payments or repay all of its debt on time. Firms with high levels of debt may have to provide investors with a higher rate of return for new debt than other similar but less indebted firms.

The weighted average cost of capital combines the rate of return from debt and from equity relative to the share of each in the market value of the firm. The formula for assessing the weighted average cost of capital is shown in Figure 9.1¹.

Figure 9.1: Pre-tax weighted average cost of capital

$$WACC = \left[r^D \times \left(\frac{D}{D + E} \right) \right] + \left[r^E \times \left(\frac{E}{D + E} \right) \right]$$

Where:

r	=	return
D	=	debt
E	=	equity

As a worked example, assume that the market value of a firm's debt is £25 million and a firm's equity is £75 million. It pays an annual interest rate of 10% and dividends at 15% of the market value of the equity. The weighted average cost of capital is calculated as follows:

$$\begin{aligned} WACC &= 10\% \times \frac{25}{25 + 75} + 15\% \times \frac{75}{25 + 75} \\ &= 10\% \times 25\% + 15\% \times 75\% \\ &= 2.5\% + 11.25\% \\ &= 13.75\% \end{aligned}$$

In order to calculate a weighted average cost of capital, a regulator has to decide an appropriate rate of return for both debt and equity. He has also to assign an

¹ Assuming no tax advantage to debt or equity.

appropriate market value to the debt and equity of the firm. His calculation of the rate of return is further complicated by both taxation and inflation.

9.2.4 Taxation

Debt and equity are treated differently for tax purposes. Interest charges are an allowable expense for the purpose of corporation tax. Interest charges therefore reduce a company's tax bill. Dividends are paid from the profit that a company makes after paying tax.

The corporation tax advantages of debt are recognised in the post-tax weighted average cost of capital calculation. This is shown in Figure 9.2.

Figure 9.2: Post-tax weighted average cost of capital

$$WACC = \left[r^D \times \left(\frac{D \times (1-t)}{D + E} \right) \right] + \left[r^E \times \left(\frac{E}{D + E} \right) \right]$$

Where:
 r = return
 D = debt
 E = equity
 t = corporation tax rate

9.2.5 Inflation

Inflation is the measure of the general rise in the prices of goods and services. Inflation causes the purchasing power of money to be eroded. The investor is therefore concerned with the real rate of return – that is the return after having adjusted for the effect of inflation.

The formula for calculating the real rate is shown in Figure 9.3.

Figure 9.3: Formula for calculating the real rate of return

$$\text{Real rate of return} = \text{nominal rate of return} - \text{inflation rate}$$

It is important to differentiate between the real rate of return (when inflation has been taken off) and the nominal rate of return (when it has not).

9.2.6 WACC and public corporations

There are difficulties in assessing the WACC for a public corporation. This is because the regulator cannot easily observe the costs of debt or equity and, moreover, it is also difficult to estimate the market value of the organisation. We will return to these issues later in this chapter. First we consider how regulators of private companies assess the costs of debt and equity and address issues relating to market value.

9.3 How regulators set WACC for private sector companies

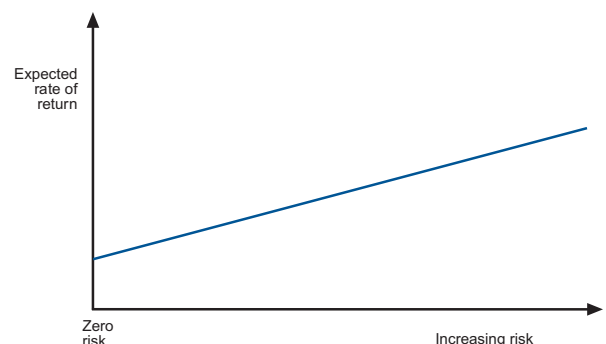
9.3.1 The rates of return for debt and equity

An investor decides where to invest his money by considering the rates of return offered to him by the options open to him, and taking account of the rate of return relative to its risk.

The ratio of the rate of return to the level of risk should be constant. The lowest rate of return is paid on an investment has no risk.

The investor makes his choice based on the rate of return and the level of risk. Figure 9.4 illustrates that an investor would expect a greater return if the investment was considered to be more risky.

Figure 9.4: Comparison of expected rate of return and risk



9.3.2 Risk-free rate of return

Figure 9.4 shows the 'risk-free' rate of return. Even if there is no risk an investor would still require a return because of the opportunity cost in choosing not to spend on goods and services immediately.

Government bonds² are generally considered to have no default risk. The Government will always meet its financial obligations. The return on a bond is set by the interest rate and the principal to be repaid. Over time inflation will erode the value of this return. There is therefore a residual inflation risk for the investor.

The Treasury also issues index-linked bonds. These bonds pay an annual interest rate of inflation³ plus a real rate of return. These bonds have no default or inflation risk.

Regulators can establish the risk-free rate of return by analysing the rate of return on index-linked treasury bonds. If we consider as an example an index-linked Treasury bond that costs £98 today which matures in one year's time, paying £100 plus £3 in interest and £2.50 in inflation. Inflation is expected to be 2.5%. The real risk-free rate of return would be calculated as follows:

$$\begin{aligned}
 \text{Real rate of return}^4 &= \frac{105 - [98 \times 1.025]}{98 \times 1.025} \times 100\% \\
 &= \frac{105.5 - 100.45}{100.45} \times 100\% \\
 &= \frac{5.05}{100.45} \times \frac{100\%}{1} = 5.03\%
 \end{aligned}$$

The real risk-free rate of return for the forthcoming year is 5.0%.

The risk-free rate will change according to market conditions.

² Also known as Gilt-edged bonds or Gilts.

³ Measured using, for example, the retail price index.

⁴ This is the real rate of return since it includes the effects of inflation.

⁵ Wright, Mason and Miles: *A study into certain aspects of the cost of capital for regulated utilities in the UK*; February 2003 report on behalf of Smithers & Company Limited, published by Ofgem and commissioned by the UK economic regulators and the Office of Fair Trading.

9.3.3 Estimates of the risk-free rate

The risk-free rate of return is an important input to the calculation of the WACC. Table 9.2 shows a comparison of some recent estimates of the risk-free rate. Each of the studies uses index-linked Treasury Bonds as the basis for their estimate. However, each estimate uses a different time-horizon to judge the appropriate risk-free rate.

Table 9.2: How other regulators estimate the risk-free rate

Regulator	Year of review	Basis	Time period	Rate
Ofwat	2004	Index-linked Treasury bonds	Medium-term historical average	2.5%-3%
Oxera (for Ofgem)	2004	Index-linked Treasury bonds	Considered both historical averages and future rates	2.25-2.75%
Civil Aviation Authority	2001	Index-linked Treasury bonds	Medium-term historical average	2.75%-3.25%
Joint Regulator study ⁵	2003	Index-linked Treasury bonds	Medium-term historical average	2.5%

A regulator also has to make an assessment of the extra risk (beyond the risk-free rate) that an investor in the regulated company must assume. The extra risk and therefore extra return required by an investor will be lower in the case of debt than in the case of equity.

9.3.4 Additional rate of return on debt

The debt of a regulated company has a risk of default. Investors will therefore demand a higher rate of return than the risk-free rate.

If a company's debt is traded on a market then the regulator can observe the additional rate of return that investors demand. The additional rate of return is calculated by subtracting the risk-free rate from the observed return on the company's debt.

Alternatively, regulators can seek to establish an appropriate return by using information from ratings

agencies. Firms with traded debt are rated by agencies such as Moody's, Fitch Ratings and Standard and Poor's.

One potential issue in setting an appropriate rate of return on debt is whether or not to include the cost of 'embedded' debt. A company borrows at prevailing market rates. The market rate will fall if inflation falls. A company has to accept the inflation risk when it borrows unless it borrows on an index-linked basis. Such borrowing (termed embedded debt) may appear expensive (or cheap) in the future.

In theory, if a regulator correctly assesses both the long-term risk-free rate and the long-term debt premium, companies should develop a portfolio of debt that is broadly equivalent to the long-term rate of return. At times of low interest rates a company will be able to borrow at below the assessed rate of return on debt; at times of high interest rates a company will be forced to borrow above the assessed rate of return.

It is not certain that the risk-free rate and debt premium can be determined with sufficient confidence or that a company is likely to issue debt sufficiently often to benefit from this portfolio effect.

Many commentators argue that embedded debt should, at least in part, be included in the cost of capital. However, allowing for the costs of embedded debt could reduce the incentive to manage debt efficiently. If companies know that the regulator will set prices that fund them for all debt that is taken out at above-market rates, then this could encourage firms not to take a prudent long-term approach to their finances.

In practice, the regulator has to make a judgement about whether or not to fund embedded debt.

Ofwat looks at market-based evidence, the companies' credit ratings and evidence from investors. In its 2004 draft price determinations⁶, Ofwat explained that it had analysed the premium to the risk-free rate paid by water companies and considered that it was historically low.

Ofwat considered that such a low premium to the risk-free rate was unlikely to be continued over the regulatory period. Its advisors supported this view and consequently Ofwat decided to allow a higher premium.

At its 1999 price review, Ofwat allowed an embedded debt premium. It accepted evidence from the regulated companies about the effects of embedded debt.

However, in its draft determinations for 2004, Ofwat has decided not to allow for any impact of embedded debt. It reasons that the arguments for an embedded debt premium are not as strong as they were in 1999, because Ofwat has allowed a higher premium to the risk-free rate in the draft determination than was necessary in the current market.

9.3.5 Estimating the rate of return on equity

The cost of equity cannot easily be observed in the market. Regulators therefore typically use the capital asset pricing model and the dividend growth model to estimate an appropriate cost of equity.

9.3.6 The capital asset pricing model

The capital asset pricing model estimates the return on a particular equity using three variables: the risk-free rate (discussed above), the market risk premium and the beta of the stock. The market risk premium is the expected return on the market minus the risk-free rate. This cannot be calculated with certainty but can be estimated using historical returns. The beta of a stock measures its volatility relative to the volatility of the market. A stock with a beta of 1 is no more or less volatile than the market, whereas a stock with a beta of 0.5 will be only half as volatile (ie it will typically move 0.5% if the market moves 1%).

The formula for the capital asset pricing model is shown in Figure 9.5.

⁶ "Future water and sewerage charges 2005-10 – Draft determinations"

Figure 9.5: The capital asset pricing model

$$r = r_f + \beta (r_m - r_f)$$

Where:

r	=	return on the equity of the firm
r_f	=	risk-free rate
β	=	beta
r_m	=	return on the market

9.3.7 Dividend growth model

The dividend growth model measures the return on a share by forecasting future dividend growth. The model assumes that expectations on future dividends are correctly incorporated into the current share price. The formula for the dividend growth model is shown in Figure 9.6.

Figure 9.6: The dividend growth model

$$r = \frac{DIV_1}{P_0} + g$$

Where:

r	=	rate of return
DIV_1	=	projected dividend for next year
P_0	=	current market price
g	=	expected rate of growth in dividends

The present share price can be observed in the market. Expected dividends and the likely growth rate of dividends have to be estimated based on company guidance or analysts’ reports.

9.3.8 How regulators have calculated the rate of return on equity

Ofgem, Ofwat and the CAA all use the capital asset pricing model to estimate the return on equity. Ofwat and Ofgem have also used the dividend growth model to confirm their analysis.

Regulators generally comment on the difficulty of estimating the market return. However, regulators have arrived at similar views of the equity risk premium. This is shown in Table 9.3.

Table 9.3: Comparison of calculation of market rate of return

Regulator	Year of review	Basis	Rate
Ofwat	2004	Forward looking, based on market evidence	4%-4.5%
Oxera (for Ofgem)	2004	Forward looking, based on market evidence	3.5%-4.5%
CAA	2001	Actual market returns on equity	3.5%-4.5%

Ofwat and Ofgem have used a beta of 1 in their 2004 draft determinations. They believe that recent declines in the beta are the result of increased market volatility and do not reflect a reduction in the risk of water companies or electricity distribution companies. Ofwat has suggested that it is prudent to use a beta of 1 in volatile markets.

9.3.9 The mix of debt and equity

As discussed above, regulators have to determine an appropriate capital structure in order to set an allowed weighted average cost of capital.

There is no consensus on the optimum mix of debt and equity. Regulators can set the allowed rate of return with reference either to:

- projected proportions of debt and equity in the market value of the company; or
- an assessed efficient level of debt and equity.

There are two ways that a regulator can measure the level of debt and equity in a company:

- By using the market value of debt and equity; and
- By using the RCV as a proxy for the market value of the company. The level of debt is the debt issued by the company; the difference between the RCV and the level of debt is therefore the level of equity.

Ofwat has used the RCV as a proxy for the market value of the regulated entity. This approach avoids the difficulty of assessing the market value of the regulated

firm's equity. This is difficult because the regulated firm will usually be a subsidiary of a holding company. It will be the shares of the holding company that are traded on the Stock Exchange.

If weights are set using the projected proportions of debt and equity in the market value of the company, then the allowed rate of return will probably better match the demands for interest payments and dividends that a company faces. However, companies are likely to have chosen different mixes of debt and equity. It would not be appropriate for a regulator to set a different allowed rate of return for each company. Moreover, it is important that the onus is placed on the company to maintain the balance between debt and equity that allows it to access the capital markets on a sustainable basis.

If weights are set on the basis of an assessed efficient capital structure then this creates the incentive for the company to manage the costs associated with debt and equity efficiently.

In 2004 Ofwat and Ofgem estimated WACC based on their view of an efficient capital structure. Their view on the efficient capital structure was based on discussions with experts, market observations, academic evidence and advice from the ratings agencies.

9.3.10 Summary of approaches to setting WACC by regulators of private sector companies

Regulators generally follow a broadly similar procedure in setting the allowed rate of return. This is summarised in the flow diagram in Figure 9.7.

Figure 9.7: Setting an allowed rate of return

- 1) Assess the appropriate risk-free rate using long-term return on index-linked Treasury bonds
- 2) Assess the appropriate debt premium. If the company's debt is not traded, find an appropriate comparator.
- 3) The sum of 1) and 2) gives the return on debt.
- 4) Calculate the market risk premium using long-term returns.

5) Calculate the Company's beta. If the company is not traded then we use the beta of a comparator.

6) Using information from 1), 4), and 5), calculate the return on equity using the capital asset pricing model.

7) Calculate the proportion of the company's RCV that is debt, use this to weight the information from 2) and 6) to calculate the company's weighted average cost of capital – this is the allowed rate of return.

The formula for calculating the allowed rate of return is shown in Figure 9.8.

Figure 9.8: Calculation of the allowed rate of return

$$WACC = \frac{D}{RCV} \times (r_f + r_i) + \left[\frac{1 - D}{RCV} \right] \times \left[r_f + \beta (r_m - r_f) \right]$$

Where:

D	=	level of debt
RCV	=	regulatory capital value
r_f	=	risk-free rate
r_i	=	interest rate premium
β	=	beta
r_m	=	return on the market

9.4 Setting an allowed rate of return for Scottish Water

We have described the process that is used by the regulators of the private sector utilities to set an allowed rate of return. The chapter continues by looking at how we might set an appropriate rate of return for Scottish Water. Our aim is to allow Scottish Water to earn a return that is sufficient for it to fund its activities in a sustainable way. We propose to seek a balance between current and future customers by ensuring that the allowed rate of return is only just high enough to cover the costs of the benefits provided to current customers.

9.4.1 Financing of Scottish Water

As a public corporation, Scottish Water has only two sources of funds: revenue from customers and new debt. Scottish Water does not borrow directly from the capital markets, nor does it borrow at commercial rates. Scottish Water borrows from the Scottish Consolidated Fund at public-sector borrowing rates.

Scottish Water does generate surpluses and therefore has retained earnings, which it can invest to achieve the outputs set by Scottish Ministers. It does not currently pay dividends and therefore all of the surplus generated can be reinvested for the benefit of current and future customers. These retained earnings have essentially the same properties as retained earnings (a form of equity) in the private sector, except that they are reinvested for the benefit of customers, rather than with the specific aim of generating increased future profits.

In considering this source of funds for Scottish Water we will refer to 'customer retained earnings'. The use of customer retained earnings to fund investment will result in a higher RCV and an unchanged level of debt. The ratio of debt to RCV will therefore decline. As a direct consequence, borrowing more would still be consistent with the financial sustainability of Scottish Water.

To set an allowed rate of return for Scottish Water by adopting the same principles as the regulators of private sector utilities, we would need to estimate an allowed rate of return on debt and an allowed rate of return on customer retained earnings. Scottish Water should be allowed to earn a return when it uses customer retained earnings as a source of funds.

Although it may seem feasible to estimate a weighted average cost of capital for Scottish Water, there are issues associated with applying the conventional approach to assessing an appropriate WACC for a public corporation. The conventional WACC approach assumes that we can identify market rates of return for debt and equity. Scottish Water does not have debt or equity that is publicly traded. We are not therefore able to establish a market-based measure of equity or debt returns for Scottish Water in the way that we would for a private sector company. Neither have we been able to identify another public corporation for which an allowed rate of return has been set independently of the management or Government.

The WACC approach is further complicated because regulators have tended to regard the RCV as a proxy for

the enterprise value (market values of the debt plus the equity) of the regulated business. The market value of the equity is therefore equal to the RCV minus the outstanding net debt. As we described in Chapter 10, the RCV will increase over time to reflect the efficient net new investment in the assets of the company. It is therefore reasonable to regard these investments as increasing the value of the company. The respective RCVs reflected the market's view of the value of the companies in the period after privatisation. The RCV would therefore seem to be a reasonable approximation of the value of the companies in England and Wales.

However, we believe that it would be difficult to justify an assertion that the RCV would be a reasonable estimate of the enterprise value of Scottish Water. Chapter 8 outlines some of the difficulties that arise when attempting to establish the initial RCV for a firm in the public sector.

The value of an enterprise can be estimated in a variety of different ways. One common market-based approach is to use the dividend growth model, which combines the dividend yield⁷ and the expected growth in dividends to establish an equity value. However, Scottish Water does not pay dividends so this approach cannot be used. An alternative approach would be to calculate the Net Present Value (NPV) of Scottish Water's future cash flows. The NPV approach requires an appropriate discount rate to be established in order to discount cash flows that will occur in the future. However, it would be difficult to justify the use of a discount rate that is different from the allowed rate of return. The NPV approach cannot therefore be used since we need a market value to establish the allowed rate of return, but need an allowed rate of return to use the NPV method of establishing a market value.

For these reasons we consider that it is impractical to apply the conventional WACC calculation to Scottish Water. If a WACC is to be calculated, the approach would need to be modified to take account of Scottish Water's particular circumstances.

⁷ Dividend yield is calculated as the annual dividends per share divided by the price of the share.

9.4.2 Possible approaches

There are four possible approaches to setting an appropriate rate of return for Scottish Water:

- adopt the Ofwat allowed cost of capital;
- use long-term average real borrowing rates;
- use the discount rate suggested in HM Treasury's Green Book; and
- use a hybrid approach.

We will examine each in turn and summarise the advantages and disadvantages of each approach.

Ofwat's assessment of the allowed cost of capital

One possible approach would be to use Ofwat's allowed rate of return. This could be justified on the grounds that the companies in England and Wales are good comparators for Scottish Water. However, we believe that such an approach would not be in customers' interests.

At each periodic review, Ofwat establishes an allowed weighted average cost of capital for the water companies south of the border. Ofwat describes the estimate of the WACC as a 'highly significant element within the determination of price limits'⁸. In the private sector, if the allowed rate of return is set below the level that investors will accept, the companies will experience difficulties in financing their mandatory investment programmes. If the allowed rate of return is set too high, customers' bills will be too high and shareholders will earn windfall returns.

Ofwat's current proposed allowed rate of return for the water and sewerage companies is 5.1%. This estimate may be modified when the final determination is published in December 2004. The cost of Scottish Water's debt (both the current overall cost and the cost of new debt) is lower than Ofwat's estimate of the cost of debt for the companies south of the border. This

would suggest that Ofwat's WACC would significantly overestimate the appropriate rate of return for the water industry in Scotland. If we were to set an allowed rate of return that was significantly in excess of the cost of new debt, Scottish Water would not face a tight budgetary constraint and consequently would be under less pressure to improve its efficiency. This is because Scottish Water would be able to afford the extra interest payments and a higher level of operating cost than was justified.

Moreover, the allowed rate of return south of the border has to be sufficient to attract debt and/or equity investment. As we outlined above, investors will consider the opportunity cost of providing new capital to the water industry: in other words, they will compare the return that is available with their view of the risks that they face. The water and sewerage companies have to compete for capital with many other investment choices that are available to providers of capital. Ofwat has a duty to ensure that an efficient company is able to access the capital markets and attract sufficient capital to finance its functions.

In contrast, Scottish Water does not have to compete for capital in the same way. It would therefore not be realistic to set an allowed rate of return at or close to the same level as in England and Wales.

The risk profile of Scottish Water could also reasonably be considered to be lower than that of the companies south of the border. This is because competition is more extensive in England and Wales, where inset appointments, special deals outside the tariff baskets (which are at the risk of the shareholder) and common carriage are possible. The companies have also improved their operating cost efficiency and thereby reduced the opportunity for significant outperformance of the regulatory settlement.

Long-term average borrowing rates

Scottish Water currently relies on debt provided by government and retained earnings to finance an increase in its asset base. A second possible approach

⁸ 'Setting price limits for 2005-10: Framework and approach', Ofwat, 15 October 2002.

for establishing an allowed rate of return for Scottish Water would be to apply an average of observed historic real borrowing costs.

This would be relatively straightforward to apply, although there would be decisions to be made concerning the choice of maturities and the period of the comparison.

The approach could also overestimate the required rate of return in the medium term, as the premium on longer-term debt is at historic lows. If we were to use this method, we believe that it would not be appropriate to allow extra costs associated with embedded debt to be recovered from customers.

There would still potentially be an issue about the rate of return that should be allowed on customer retained earnings, which represent an important source of funds for Scottish Water.

The Treasury Green Book⁹

'The Green Book', which is published by HM Treasury, is a guide to appraisal and evaluation in the public sector. 'Appraisal' relates to the decision to commit funds to the achievement of objectives and 'evaluation' relates to the assessment of past and present activities. The preface to the 2003 edition of the Green Book states that the guidance "is relevant to all appraisals and evaluations":

"Some central government bodies sell goods or services commercially, including to the government itself. These activities may be controlled by requiring prices to be set to provide a required rate of return (RRR) on the capital employed by the activity as a whole. Government policy is generally to set charges for goods and services sold commercially at market prices, and normally to recover full costs for monopoly services, (including the cost of capital as defined in the Treasury Fees and Charges Guide)."

The 2003 edition of the Green Book reduced the Treasury estimate of the discount rate to 3.5% real but did not update the 6% real estimate for the cost of

capital included in the 1997 edition:

"The discount rate is used to convert all costs and benefits to 'present values', so that they can be compared. The recommended discount rate is 3.5%."

The 'discount rate' measures 'the rate of social time preference'. The Green Book defines social time preference as "the value society attaches to present, as opposed to future, consumption".

A third possible approach to setting the allowed rate of return for Scottish Water would be to take the discount rate of 3.5% real as the allowed rate of return. There are two advantages of this approach. It uses a rate of return that is established by Government and it should therefore be sufficient for Scottish Water to fund its efficient operation. Secondly, this approach would cover both the debt and customer retained earnings portions of the regulatory capital value.

However, setting an allowed rate of return at 3.5% real may be quite significantly higher than the observed cost of new debt to Scottish Water. This could have the effect of encouraging Scottish Water to increase its borrowing and may delay the necessary improvements in efficiency. The effect of this could be reduced if we regarded the 3.5% real rate as the pre-tax return rather than the post-tax return.

Hybrid approach

A fourth potential approach would be to apply a modified version of the WACC approach. We would combine an observed real cost of debt with an estimate of an appropriate rate of return on the customer retained earnings (the equity portion of Scottish Water's RCV) in order to produce an allowed rate of return.

The future real rate of interest on debt for Scottish Water could be estimated in two ways. The first option would be to take the average of observed historic real borrowing rates, as discussed above. The alternative would be to take an average of current borrowing rates faced by Scottish Water.

⁹ 'The Green Book' Appraisal and Evaluation in Central Government, HMSO, 2003.

We would propose to make no allowance for embedded debt if we applied the observed real historic cost of debt. However, if we used the average of the real rates that have been available to Scottish Water over the current regulatory period, we would propose to make an allowance for the full cost of embedded debt.

For the current regulatory period we would propose to use whichever of these two options is more favourable to Scottish Water. However, we would also want to make it clear that we would not intend to make an adjustment for embedded debt in future regulatory periods, unless there was a very material change in the rate of inflation.

We propose that the pre-tax allowed rate of return on the customer retained earnings should be set at the post-tax allowed rate of return for debt. In real terms this rate is likely to be low. We believe that customers should be willing to finance a relatively low return on the customer retained earnings because this will replicate within a public sector capital structure the equity buffer that protects customers south of the border from operational or legislative shocks¹⁰. There will be no incentive for Scottish Water to seek to change its current ratio of debt to its regulatory capital value. If the return on the customer retained earnings is greater than the return on debt, Scottish Water would have an incentive to repay debt. In contrast, if the return on the customer retained earnings is lower than the return on debt, Scottish Water would have an incentive to take on more debt.

This approach should also help stakeholders to monitor Scottish Water's performance. The level of its outstanding debt relative to its RCV should be in line with the forecasts that are included in the Strategic Review of Charges. If the level of debt to RCV declines, either Scottish Water has outperformed its efficiency targets or it has not delivered its capital programme as planned. Conversely, if the level of debt relative to its RCV increases, Scottish Water is either ahead of schedule in delivering the capital programme or has underperformed relative to its efficiency targets.

¹⁰ This issue is discussed in detail in Chapter 4.

9.5 Our proposed approach to setting an allowed rate of return for Scottish Water

The four possible methods each have advantages and disadvantages. These are outlined in Table 9.4

Table 9.4 :

Method	Advantage	Disadvantage
Ofwat's Allowed Cost of Capital	<ul style="list-style-type: none"> Recognised cost of capital Underpinned by analysis of capital markets 	<ul style="list-style-type: none"> Relevant to public sector Top high relative to observed cost of capital
Long Term Average Real Borrowing Rates	<ul style="list-style-type: none"> Straightforward to calculate 	<ul style="list-style-type: none"> Issue of embedded debt Relevant to "customer retained earnings"
Green Book	<ul style="list-style-type: none"> Applies to whole RCV Official Government discount rate for public sector projects 	<ul style="list-style-type: none"> Higher than observed cost of debt
Hybrid Σ	<ul style="list-style-type: none"> Facilitates monitoring No incentives to change capital structure 	<ul style="list-style-type: none"> No obvious disadvantages

We propose to adopt the hybrid WACC approach outlined above. This approach has a number of potential benefits for customers:

- The information that we would need to establish an appropriate rate of return for Scottish Water using this approach is readily available.
- The estimated cost of capital will be consistent with Scottish Water's observed cost of capital. Customers will not be required to fund an allowed rate of return that exceeds Scottish Water's observed cost of capital.
- The approach facilitates performance monitoring.
- Scottish Water has no incentive to change its debt to RCV ratio. Increasing or reducing borrowing will not have any impact on customers' bills.

9.6 Questions for consultation

- Do respondents agree that it would not be appropriate to adopt the rate of return allowed for the private sector water industry south of the border by Ofwat?

2. Do respondents agree that the hybrid approach described above should be used to set the allowed rate of return for Scottish Water? If not, which other method would respondents suggest? In particular how could the suggested method facilitate monitoring and avoid any incentive for any stakeholder to seek to change the ratio of debt to RCV?
3. Do respondents agree that we should make an allowance for embedded debt for this regulatory control period, but only make such allowances in the future if there has been a material change in the rate of inflation?

Section 2: Chapter 10

Regulatory capital value – treatment of depreciation and additions

10.1 Introduction

In previous chapters we introduced the concept of using the Regulatory Capital Value (RCV) in price setting, and examined the options that are available to us when calculating the initial RCV. We also discussed the significance of the rate of return allowed on the RCV and how this can influence prices.

In this chapter we discuss how the value of the RCV changes over time, and how the method we use to take account of these changes can influence the prices that customers pay. This Chapter is principally further background to the use of the RCV method of price setting. There are therefore no specific questions for consultation. However, the views of stakeholders would, of course, be welcome.

The RCV is a value placed on a company's asset base and on which it should earn a return. Obviously this value will change over time. As the assets represented by the RCV grow older, their physical usefulness declines. As a result, the financial value of the assets also declines. As explained in the previous chapter, we refer to this reduction in value over time as depreciation.

A company may choose to add to its asset base by buying entirely new assets (enhancement), replacing existing assets (renewals) or repairing existing assets (maintenance). All of these activities increase the usefulness and value of the asset base. We refer to increases in the asset base as additions.

In order to ensure that the RCV continues to be representative of the value of Scottish Water's asset base, we need to take account of additions and depreciation. It is important for customers that we do so, as the value of the RCV influences the price that customers pay. By adjusting the RCV for additions and depreciation, we ensure that customers only remunerate an RCV that represents the value of the assets which serve them.

10.1.1 How additions and depreciation affect prices

As we have noted in previous chapters, the RCV plays a role in determining Scottish Water's revenue requirement.

Revenue requirement = operating costs + public/private partnerships (PPP) + infrastructure renewals charge (IRC) + depreciation + return on capital

Depreciation and additions play a role in this calculation through the impact they have on the RCV, and in the case of depreciation, as a separate component of the revenue requirement.

Additions affect the price cap by increasing the RCV. As the rate of return remains constant (it is a percentage of the RCV), any increase in the RCV increases the amount of return allowed in Scottish Water's revenue requirement, and hence increases prices.

The role of depreciation is a little more complicated. It can affect prices in two ways:

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

Depreciation can therefore influence Scottish Water's revenue requirement either directly, or indirectly (by affecting the level of return).

10.2 Rolling forward the RCV

As explained above, both additions and depreciation have a significant effect on Scottish Water's revenue

requirement. It is important that we take both additions to, and depreciation of, the RCV into account throughout the regulatory period. In order to do this, we will calculate the RCV on an annual basis. This process of adjusting the RCV from its starting value to reflect changes in its value is known as ‘rolling forward’.

We explained the use of the RCV for price setting in Chapter 5. Here we look at the process in more detail. We begin by considering the adjustments that are necessary in order to roll forward the RCV. We then examine in more depth how we treat additions and depreciation, and how we account for differences in projected and actual changes in the RCV.

Scottish Water’s revenue requirement for each year of the next regulatory period will be established before the period has begun. Only in exceptional circumstances will it change¹. This means that, rather than taking account of how the revenue requirement changes each year as it happens, we have to project how we expect it to change at the outset. In the context of the RCV, it means that we have to anticipate both the additions we expect will be made to the RCV and how it will depreciate for each year of the regulatory period. It also means that at the end of the regulatory period, when we know what actually happened, a process needs to be in place to adjust the RCV for any difference.

Figure 10.1 outlines how the change in the RCV is calculated for each year of the regulatory control period.

Figure 10.1: Rolling forward the RCV

Closing RCV (previous year)	
+	
Indexation	
+	
Capital expenditure (excluding IRE)	} Additions
+ Infrastructure renewals expenditure (IRE)	
-	
Infrastructure renewals charges (IRC)	
-	
Grants and contributions	
-	
Depreciation	
-	
Disposals	
=	
Closing RCV	

In order to roll forward the RCV, there are a number of adjustments that need to be made. We deal with each of these below.

10.2.1 Indexation

In order to ensure that the RCV does not decrease in real terms as a result of general price rises in the industry itself, we will adjust the RCV each year to take account of inflation. This is calculated according to anticipated changes in the construction output price index (COP1). Where the actual COP1 has differed from the expected COP1, this can be taken into account at the next price determination.

10.2.2 Capital expenditure and IRE (additions)

Any capital expenditure on non-infrastructure assets and expenditure on infrastructure assets (IRE) are regarded as additions to the RCV as they are expected to enhance or maintain Scottish Water’s asset base.

When Scottish Water spends money on its non-infrastructure assets, it can be allocated to:

- maintenance to preserve base service levels (maintenance non-infrastructure or MNI expenditure);
- enhancement to improve the existing asset base.

Projected capital expenditure and IRE are added to the RCV each year. One of the critical issues is that only the efficient value of the capital expenditure is added to the RCV. This protects customers from paying for inefficiency. We will discuss this in more detail later. The application of depreciation is shown schematically in Appendix 1.

10.2.3 Infrastructure renewals charge

The infrastructure renewals charge (IRC) is an explicit component of the regulated company’s revenue

¹ Chapter 11 explains the instances in which an interim determination can be triggered.

requirement. As explained in chapter 3, it is intended to allow the company to fund investment in infrastructure assets. Because an allowance for funding infrastructure assets has been made directly, we must ensure that customers do not pay for the same investment again through the RCV. For this reason we cannot simply allow the RCV to grow by the amount of the infrastructure renewals expenditure. The IRC is therefore subtracted from the RCV each year, reflecting the cost of use for the year that should be met by customers.

The net expenditure on infrastructure assets may have an impact on the value of the RCV. In order to explain how this happens, we must consider the effects of the IRC and the IRE together. Whereas the IRC is an allowance made by the regulator, the IRE is the actual amount of expenditure on infrastructure assets.

Suppose that the regulator has allowed £10 million in the revenue requirement for infrastructure expenditure. If the company actually spends £12 million there may be a case for allowing the company to recover a further £2 million. The regulator can do this by adding £2 million to the RCV. The company will then recover £12 million, £10 million through the IRC and £2 million through the RCV.

Suppose that the regulator has allowed £10 million, but the company has actually spent only £8 million. The regulator must claw back £2 million to ensure that customers are not paying for investment that has not been made. The regulator can do this by deducting £2 million from the RCV.

When we project IRE and IRC across the regulatory period, however, we assume they are both equal. We explain the reasons for this later in the chapter.

10.2.4 Grants and contributions

Any grants and contributions made towards capital expenditure by a third party are deducted from the RCV. Although they represent an addition to the asset base, they are in reality a gift. They are therefore not added to the RCV as they should not be remunerated by customers.

10.2.5 Depreciation

Businesses expect to use fixed assets such as buildings, plant and machinery for several years. However, these assets will eventually wear out and become obsolete. Depreciation is a monetary measure of the cost of use of an asset for each year of its life.

10.2.6 Disposals

When an asset reaches the end of its useful life, or is sold, it is a disposal from the asset base. As it is no longer used to the benefit of customers, its net book value (the value of the asset less any depreciation) is also deducted from the RCV.

10.3 Treatment of additions to the asset base

10.3.1 Capital expenditure (excluding IRE)

The key role of the RCV in price setting is to reflect the value of the physical assets used to provide a service to customers. When Scottish Water makes an investment in its assets – be it simply to replace or maintain assets that have worn out, or to actually enhance the asset base – this should be reflected in an increase in the RCV. In increasing the RCV, we are ensuring that the return earned on total assets will increase in recognition of the investment made.

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

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

The *Quality and Standards III* process will define the investment needs of the industry over the next regulatory period. The process should provide more detail than its two predecessors about the outputs that capital expenditure is expected to deliver. We will apply efficiency targets to this expenditure². We will then be able to make projections of how much capital investment is expected to take place each year over the duration of the regulatory period, and how it will affect the RCV.

We will use these projections to calculate the cash return on the RCV. An important assumption that we will make in so doing is that Scottish Water will deliver the expected outputs at the expected cost, ie they will meet the efficiency target.

We recognise that the reality of what will actually occur over the ensuing regulatory period could differ from these projections. Therefore, at the end of each regulatory period, if necessary, the closing RCV will be adjusted to reflect the actual value of investment delivered. We will do this by comparing the actual RCV at the end of the regulatory control period with the projected RCV.

There are a number of potential outcomes from making this comparison. We describe these outcomes below, along with the action that would normally be taken for each³:

Scenario:	Total actual expenditure exceeds that assumed in the price caps.
Cause (1):	Over the period, additional obligations (such as changes in water quality standards) have been placed on Scottish Water which have required greater expenditure than anticipated.
Action:	In this circumstance, the additional expenditure would be justified as additional benefit had been brought to customers. The RCV would be increased at the close of the regulatory period to reflect this extra investment.
Cause (2):	Greater than expected inefficiency.
Action:	To the extent that actual capital expenditure exceeds anticipated capital expenditure, but only delivers anticipated outputs, the difference is not added to the RCV at the close of the regulatory period.

Scenario:	Anticipated outputs are not delivered by the end of the regulatory period.
Cause:	Possible causes could be poor management or inefficiency.
Action:	Where expected outputs have not been delivered, the RCV would be decreased to reflect these shortfalls in delivery. Therefore, in the next regulatory period, customers would not be paying for inefficient investment.

Scenario:	Capital expenditure is lower than expected, but anticipated outputs have been delivered – 'outperformance'.
Cause:	Due to greater than anticipated capital expenditure efficiency, anticipated outputs have been delivered, but at a lower than expected cost.
Action:	The RCV would be reduced to reflect the lower actual expenditure. This passes the benefit of the efficiency on to customers. Until that time, Scottish Water would retain the financial benefit of the outperformance. This should act as an incentive for management. In England and Wales, Ofwat allows the regulated companies to retain this benefit for a full five years in order to enhance the incentive for efficiency.

10.3.2 Infrastructure renewals expenditure

We explained above that expenditure on infrastructure assets is remunerated in two ways. First, the IRC is a component of the revenue requirement. Second, the difference between the IRC and the IRE may have an impact on the value of the RCV, and hence the cash return on the regulatory capital value.

The IRC is calculated as an average of historical infrastructure renewals expenditure over a typical timescale of 15-20 years. As with non-infrastructure capital expenditure, we estimate the IRC for each year of the regulatory period.

We explained above that the IRE is added to the RCV and the IRC is deducted from the RCV. However, the actual IRE each year may differ from the IRC. IRE will often fluctuate on a year-to-year basis due to a high or low rate of system failures, extreme weather or the actions of a third party which require Scottish Water to undertake maintenance.

Where differences in IRE and IRC occur, they are termed:

- **Accruals** – Where IRC exceeds IRE, it is added to Scottish Water's accounts as a liability. That is, Scottish Water has received funding for

² The basis for these targets is discussed in Volume 5 of our methodology consultation documents.

³ This will be discussed in more detail in the next chapter.

infrastructure renewals that have not yet been carried out.

- **Prepayments** – Where IRE exceeds IRC, Scottish Water has already carried out infrastructure renewals for which it has not yet received funding.

Over the course of the regulatory period, accruals and prepayments should tend to balance each other out. When we set price limits, we assume that the IRC will equal IRE in each year of the regulatory period. As such, we are assuming that at the end of the regulatory period, total IRE should equal IRC, and the effect on the RCV should be neutral.

10.4 Treatment of depreciation

Depreciation can have an impact on the revenue requirement in two ways:

- It is deducted from the RCV and hence reduces the return on capital.
- It is an item in the revenue requirement as it contributes to the level of funding for capital expenditure.

As we have explained, depreciation measures the annual cost of using an asset during its life. It is deducted from the RCV to reflect benefit that customers have received from these assets. All other factors remaining the same, if depreciation exceeds new expenditure, then the RCV will be reduced, and the return on capital earned will be lower. Similarly, if depreciation is lower than new investment, the RCV will increase and the return on capital earned will be higher.

Depreciation is also a component of Scottish Water's revenue requirement in its own right. Customers should pay for the use that they get from existing assets and Scottish Water needs revenue to continue to replace assets as they wear out. By including depreciation in the revenue requirement, we are taking account of the cost of non-infrastructure assets wearing out, and providing

revenue to replace them. Depreciation is not applied to infrastructure assets, as their maintenance is funded out of the IRC.

At present, we are consulting on how we should establish an initial RCV for Scottish Water. However, like Ofwat, we intend to calculate depreciation separately from the RCV, and to deduct it each year from the RCV.

10.5 Depreciating non-infrastructure assets

We explained in the previous chapter that we propose to use the modern equivalent asset method to value Scottish Water's assets. We also propose to use the same standard asset lives as Ofwat uses.

10.6 Depreciating infrastructure assets

We explained the nature of the infrastructure renewals charge in the previous chapter. In *Setting price limits for 2005-10 : Framework and approach*⁴ Ofwat summarises:

"Infrastructure assets are not depreciated. The industry adopted infrastructure renewals accounting in 1989. Under this method, the infrastructure network is treated as a single asset system to be maintained in perpetuity rather than a collection of individual assets each with its own life and maintenance requirements. An annual charge, the IRC, is made against profits for the annualised cost of maintaining the system at its current level of operations. We call expenditure to maintain and replace the network infrastructure renewals expenditure (IRE). The level of IRC should be broadly constant, in real terms, over the medium term, assuming that the network systems are in a steady state as regards operational capacity."

10.7 Ensuring that calculated depreciation is appropriate

In England and Wales, before (or after) a depreciation charge is included in price caps and later deducted from the RCV, Ofwat carries out a check to ensure that the

⁴ Page 52

depreciation charge is at an appropriate level. This check is known as 'broad equivalence'. The broad equivalence test applies to depreciation on existing assets and additions. Where projections of depreciation fail this check, they can be adjusted accordingly.

The rationale behind the principle of broad equivalence is relatively straightforward⁴. As existing assets reach the end of their useful lives and are removed from the asset base, they are no longer liable for depreciation. As such, the depreciation charge falls. However, as new expenditure enters the depreciation calculation, it should rise again by a compensating amount, that is, depreciation should remain constant. Providing there is no enhancement of the asset base (it is in a constant state, neither improving nor declining), the overall level of depreciation should equal the new expenditure on non-infrastructure maintenance, or at least be broadly equivalent in the long run⁶.

The practical effect of broad equivalence is to use projected non-infrastructure maintenance expenditure as a 'cap' on future depreciation. It is used to ensure that customers do not pay a level of depreciation that funds more than is necessary. This helps the regulator to ensure that prices are as high as they need to be but no higher.

The process of assessing whether or not there is broad equivalence, and calculating adjustments where necessary, can be very complicated. In order to carry out the test, a number of practical difficulties must be overcome.

10.7.1 Issues with broad equivalence

Ofwat's broad equivalence principle is complicated by the fact that future non-infrastructure maintenance needs are assessed on the basis of past non-infrastructure maintenance requirements to preserve base service. This presents the possibility that if past

non-infrastructure maintenance has been understated, future non-infrastructure maintenance and hence depreciation may also be understated. The reverse could also be true, and depreciation could be higher than necessary. As prices are sensitive to the depreciation charge, this could mean that customers pay too much or too little for the base level of service they receive.

The approach also depends on being able to test reliably if broad equivalence holds. If such a comparison is to be made between Scottish Water's non-infrastructure maintenance expenditure and depreciation, we will have to consider a number of other factors :

- **Which base year should be used?** Ofwat uses 1992-93 as a base year for its calculations as this was the first year for which both MNI and depreciation figures were robust and the asset base was in a steady state⁷. A similar base year would need to be determined for Scottish Water.
- **What is an appropriate period for broad equivalence to hold?** In order for non-infrastructure maintenance to exactly equal depreciation, then the comparison must be made over the lifetime of the oldest asset in the asset base. For instance, if the oldest asset life is 60 years, the total MNI spent on replacing it should only equal depreciation once the asset is fully depreciated and has reached the end of its useful life.

However, in practice this is difficult to calculate as the reliability of non-infrastructure maintenance projections decreases with time. It would be very difficult for a water company to produce non-infrastructure maintenance projections of the required level of accuracy to test broad equivalence for 60 years⁸. It is for this reason that Ofwat uses 28 years – it is a compromise between the long length of time required to test broad equivalence

⁵ Ofwat first set out the rationale in its consultation for the 1999 periodic review of charges, *Setting price limits for water and sewerage services. The framework and business planning process for the 1999 Periodic Review* (February 1998).

⁶ Ofwat, *The approach to depreciation for the periodic review 2004: A consultation paper* (March 2002), p.21.

⁷ *Setting water and sewerage price limits for 2005-10*, p.64.

⁸ Ibid.

and the declining accuracy of non-infrastructure maintenance expenditure projections with time.

- **What is an appropriate tolerance limit?** In recognition of the difficulties associated with calculating broad equivalence, Ofwat assumes that it will not hold exactly and allows a tolerance limit of 5% of total turnover. That is, if the difference between MNI and depreciation is greater than 5% of turnover, Ofwat will consider adjusting depreciation to ensure that this 5% limit is not exceeded⁹. However, depending on the degree of accuracy of information provided by Scottish Water, a higher or lower tolerance level may be more appropriate.
- **Under what circumstances is it reasonable to expect the tolerance level to be exceeded?** There are a number of factors that could justifiably distort the balance between depreciation and MNI. For instance, although assets are depreciated, they may not be replaced within the period that broad equivalence is expected to hold. As such, a protocol is needed to assess the validity of these factors.
- **Can broad equivalence be made to work if the asset base is undergoing strong growth?** If the asset base is undergoing strong growth, then it is crucial that expenditure on capital enhancement is deducted from the calculation. However, this must be carried out accurately otherwise broad equivalence will not hold.
- **How should technical progress be allowed for?** Companies in England and Wales have argued that rapid technical progress is resulting in assets having shorter lives. This requires them to be depreciated more quickly. As a result, the profile of depreciation of the overall asset base is changing, tending towards being more akin to the reducing balance method¹⁰.

- **Accuracy of the information available.** Broad equivalence relies on accurate information, particularly the allocation of expenditure between asset categories. In order to calculate broad equivalence effectively, the regulated company and the regulator must be able to distinguish clearly between MNI and capital enhancement¹¹. They must also be able to distinguish between maintenance on assets in existence in the base year, and maintenance on those added since the base year.

At present, the historical non-infrastructure maintenance information required to test broad equivalence is not available in Scotland. This essentially precludes any possibility of implementing broad equivalence for the next Strategic Review of Charges. However, it is an issue that we would like to revisit should sufficient information become available.

10.8 Summary

However it is first calculated, Scottish Water's RCV will not remain static over time, as the value of the assets that the initial RCV represents will decline both financially and operationally. Conversely, as additional investment is made in these assets, the RCV will increase. We need to take account of these changes in order to ensure that the RCV remains representative of the value of the assets that serve customers.

As customers pay for additions to the RCV through higher prices, we need to ensure that the additions are justified and efficient. The expected capital expenditure must have delivered the agreed outputs.

Similarly, the way in which depreciation is charged can affect the prices that customers pay both through the return on the RCV and as an explicit component of the revenue requirement. Customers should pay for the cost of using existing assets each year. To do otherwise would impact future generations unduly.

⁹ Ofwat., *The approach to depreciation for the periodic review 2004: A consultation paper* (March 2002), p.23.

¹⁰ Ibid., p.25

¹¹ Ibid.

Section 2: Chapter 11

Interim determinations and logging up and down

11.1 Introduction

Regulatory reviews occur at fixed intervals. In Scotland, a Strategic Review of Charges is carried out every four years, while in England & Wales a price review is carried out every five years. The period of time between regulatory reviews is referred to as the regulatory control period. At a regulatory review, the regulator sets price caps or revenue caps for the next regulatory control period.

In order to set price caps or revenue caps, the regulator forecasts the costs that the regulated company will incur over the next regulatory control period, if it carries out its functions efficiently. The revenues recovered by the company must be sufficient to cover these costs.

The regulator forecasts costs based on the information that is available to him at the time of the review. This information comes from many sources: company business plans, research, representations from stakeholders, etc. In some cases the regulator can be confident that the assumptions underpinning the price determinations are reliable. During the regulatory control period things may turn out to be a little different from the way that was assumed, but generally the assumptions will prove to be broadly correct. However, in other cases the regulator knows that there is a good chance that the assumptions that underpinned the review may prove to have been incorrect.

This chapter considers what can be done in order to take account of the fact that some things are uncertain, and therefore difficult to take into account, when a determination is made. We need to achieve a balance between having a flexible enough process to allow for significant changes and a process that is not too uncertain. Customers generally seek predictability in the level of charges.

We consider two mechanisms that have been used by Ofwat in England and Wales. The first is the mechanism for carrying out 'interim determinations of price limits' between regulatory reviews. The second is the approach of 'logging up and down' at a regulatory review.

In the current regulatory framework in Scotland, the Water Industry Commissioner for Scotland provides advice to Scottish Ministers on charges. Ministers can commission advice whenever they consider it necessary. In this framework, there is no need for a specific process for interim determinations since it would be for Ministers to judge when advice needs to be revisited.

The *Strategic Review of Charges 2002-06* was the first full analysis of the revenue needs of the Scottish water industry. Logging up and down can only apply at the end of a regulatory control period. It is only now appropriate to consider whether we should introduce such a process.

The proposed change in the regulatory framework to create a Water Industry Commission with a power to determine prices will, we believe, make it necessary to introduce both the possibility of an interim determination and the logging up and down process. This will ensure that Scottish Water is able properly to finance its functions and can recover the costs of any unexpected expenditure that results from uncertainty rather than underperformance.

The chapter addresses the following questions:

- What are interim determinations and logging up and down?
- What is their rationale?
- How has Ofwat applied them in England & Wales?
- What issues does their application in the Scottish water industry raise?

In general, we would propose to replicate as much of the Ofwat process as is consistent with the structure of the industry in Scotland. Clearly, we would not be able to rely on licence conditions¹ but we believe that it should be possible to use the business plans and the price determination to highlight issues that may cause an interim determination to be appropriate.

¹ Each of the companies south of the border operates under a licence. The licence details their responsibilities and how prices will be set. It also sets out the mechanism for price changes during a regulatory control period.

11.2 What are ‘interim determinations’?

An interim determination is a reconsideration of a firm’s price limits that is undertaken between formal price reviews. The reconsideration is carried out in the light of a particular set of circumstances or factors that were not taken into account at the last review. Either the firm or the regulator may initiate an interim determination.

An interim determination is not a ‘mini periodic review’. The full range of factors that are considered by the regulator at a price review are not considered at an interim determination. Only those circumstances that have triggered the review will be taken into account.

The factors that can trigger an interim determination fall into two categories:

- First, relevant changes of circumstance (RCCs), which are factors that are recognised in the company licences, ie the Instruments of Appointment; and
- Secondly, notified items (NIs), which are factors that were identified and noted at the last price review, but were not allowed for in the determination of prices.

In addition, some water and sewerage company licences refer to any other circumstance (other than a relevant change of circumstance) that has a material impact on the firm. The impact on the firm is described in the company licences as:

“(a) a substantial adverse effect on the Appointed Business or on its assets, liabilities, financial position, or profits or losses, not being one which would have been avoided by prudent management action taken since the transfer date; or

(b) a substantial favorable effect on the Appointed Business, or on its assets, liabilities, financial position, or profits or losses, being one which is fortuitous and not attributable to prudent management action.”

11.2.1 Relevant changes in circumstance (RCCs)

RCCs refer to the variations in circumstances, as laid down in Condition B of the company licences, in respect of which Ofwat may make adjustments to price limits.

There are four principal relevant changes in circumstance:

RCC 1 – new legal requirements: a new or changed ‘legal requirement’ affecting companies in their capacity as water or sewerage undertakers. The change could be a legal requirement ceasing to apply, being withdrawn or not being renewed. New or changed legal requirements include the impact of:

- national legislation;
- regulations made by the Council or Commission of the European Communities;
- undertakings given to the Secretary of State by the Appointed business, and accepted by the Secretary of State; and
- legal judgements (ie decisions made in courts of law).

RCC 2 – proceeds from the disposal of land: a difference in the proceeds of land disposals from that assumed when price limits were last set.

RCC 3 – failure to take steps: the Appointee has failed to take steps that the determination assumed it would take in order to comply with a legal requirement. As a result the amount allowed by the determination is substantially greater than the costs incurred, and the purpose has not been otherwise achieved.

RCC 4 – relative price effects (RPE): the cost of an allowed capital investment is different from what was assumed at the last price review due to an increase or decrease in capital prices relative to the Retail Price Index (RPI). The indicator of the relevant prices is the Notified Index, which is the change in ‘Construction Output Price Index’ (COPI) relative to RPI. This relevant change in circumstance applies only to Anglian Water Services Ltd, United Utilities Water plc and Yorkshire Water Services Ltd.

11.2.2 Notified items

At a price review, Ofwat may identify items that could have an impact on the companies' turnover. There may be uncertainty about whether the items will materialise, or about the size of any impact if they do. Ofwat can formally acknowledge that these items have not been allowed for, either in full or at all, by recording them as notified items in the determination.

If, as a result of a factor identified in a notified item, actual costs or revenues differ from the levels assumed in the determination, these differences can trigger an interim determination.

There are currently three notified items:

- A variation (increase or shortfall) in the number of customers requesting meters, free of installation charge, compared to the numbers assumed when the price limits were set;
- The effects of the prohibition of disconnection of household supplies for non-payment of charges. This includes changes in the level of customers' debt and the costs of managing customers' debt, as a result of the fact that companies are no longer able to disconnect domestic customers for non-payment of bills; and
- Companies' increased administrative costs resulting from operating the statutory scheme to abate metered charges for domestic customers who are members of vulnerable groups.

11.3 What is logging up and down?

Whereas an interim determination occurs between reviews, logging up and logging down is an adjustment that takes place at the end of the regulatory control period to reflect differences in cost from the original determination. Such differences will have an impact on prices only in the next regulatory period.

In June 2002, Ofwat issued a consultation paper on logging up and down². This paper provides a description of the logging up and down process:

"Between periodic reviews there may be changes to the outputs that a company is required to deliver. Where a change, either in terms of additional obligations or the removal of obligations, is material this can trigger an interim determination of price limits. If the change is not sufficient to trigger an interim determination (or if a company or we choose not to seek one), we provide a mechanism for the company to 'log up' any reasonable net additional costs to be taken into account at the next periodic review. Similarly reductions in outputs required are 'logged down'.

This consultation paper goes on to explain:

"The logging up and down process deals primarily with smaller changes to the items specified in the licence. If the change is not sufficient to trigger an interim determination (or if the company or we choose not to seek one), we provide a mechanism for the company to 'log up' any reasonable net additional costs to be taken into account at the next periodic review. Similarly reductions in outputs required are 'logged down'. The logging up mechanism is not specifically included in companies' licences although such a mechanism is implied by the need to reflect in the periodic review the actual circumstances faced by companies.

The net amount of logged up capital expenditure taken into account at the 1999 periodic review was around £600m. A similar amount was logged up at the 1994 periodic review. Additional operating costs arising from changes to the quality enhancement programme which arose in the period 1995-96 to 1999-2000 were £21m.

There are differences in the way the logging up and interim determination processes deal with changes in revenues and costs. The interim determination mechanism treats the changes as if they had been known when we originally set price limits. The logging up mechanism takes into account the financial impacts of the changes from the start of the next price setting period only.

² MD179 *Logging up and down - dealing with shortfalls in outputs and new requirements between Periodic Reviews*, 28 June 2002.

The shortfalls process deals with delays in delivering outputs compared to the assumptions we made when we set price limits. There are differences in the way in which we treat logging down of outputs and shortfalls in outputs.”

11.4 What is the rationale for interim determinations and logging up and down?

Regulation is forward looking. Carrying out a regulatory review involves setting price caps, or revenue caps, to cover a period of four or five years that will occur in the future. The regulatory review process typically begins two years before the end of the current regulatory control period. In England and Wales, this means that Ofwat has to make judgements about the appropriate level of costs seven years hence.

As the regulatory control period unfolds, circumstances may turn out to be different from those that were assumed in the determination. If circumstances are very different this could have a significant financial impact on the firm, either to the firm's benefit or to its detriment. When the regulator is deciding what to do about this difference between actual circumstances and the circumstances that were assumed at the determination, he must take account of the actions that were and are open to the managers of the firm. Companies should not be rewarded (or punished) for ineffective (or effective) management.

The regulatory framework in England and Wales ensures that improvements in efficiency by the water and sewerage companies (beyond the regulatory targets) ultimately benefit customers. Companies are allowed to keep the benefit of outperformance for five years, after which it is transferred to customers. This is seen as an important incentive to companies to deliver a more effective service.

However, managers cannot control all of the firm's costs and they cannot influence all of the firm's revenues. Customers will benefit if managers are encouraged to improve those things that they can control, either to reduce the firm's costs or to secure revenues. In contrast, there is no benefit to customers if managers

are punished or rewarded for things that are outside their control.

There are two situations in which regulators might consider taking action between reviews if their assumptions turn out to be inaccurate. On the one hand it is possible that:

- costs are significantly higher, or revenues are significantly lower, than was assumed at the review; and
- managers had no control over the causes of the higher costs or lower revenues and they had no way of addressing the issue once it had arisen.

In this case the incentives placed on managers are not improved by forcing the company to operate within the price caps or revenue caps decided upon at the determination. Instead, there is a case for the regulator to make an adjustment to increase the price cap or revenue cap.

On the other hand, it is possible that:

- costs are significantly lower, or revenues are significantly higher, than was assumed at the review; and
- managers had no responsibility for the causes of the lower costs or higher revenues.

In this case there is no justification for allowing the price caps or revenue caps that were decided upon at the determination. Instead, there is a case for the regulator making an adjustment to reduce the company's price cap or revenue cap and to pass the benefit to customers.

If costs are materially different from those forecast in a price review or as a result of management action, no change is made to the determination.

The interim determination process is important in ensuring that prices reflect costs that have been reasonably incurred. By bringing prices into line with costs in cases where this does not damage the incentives of managers, and where failure to bring

prices into line with costs would have a serious financial impact on the firm, the regulator ultimately reduces the firm's cost of capital. As a result, finance providers would consider the investment to be less risky.

At the same time, the regulator must recognise that many customers value stability in prices. There is a balance to be struck between ensuring that prices reflect costs and ensuring that prices are stable. For this reason, adjustments should be made between reviews only when this is absolutely necessary. In the case of an interim determination³ in England & Wales, Ofwat requires the impact on the firm from a change in circumstances to pass a materiality threshold. This ensures that customers do not see continuous small changes in prices relative to those that were agreed at the determination.

Smaller changes in costs and revenues which do not pass the materiality threshold, but which may nevertheless have a significant impact on the firm, are dealt with at the next review through logging up and down. This ensures that customers pay prices that reflect costs.

The logging up and down mechanism also has important incentive properties in the Regulatory Capital Value (RCV) approach to price setting. Managers know that if they fail to make the investments that they have promised, and fail to deliver the outputs that customers expect, this will affect the RCV of the company at the next regulatory review. If a company does not deliver the agreed capital programme, the RCV would be adjusted downwards to reflect both the non-delivered items and any timing difference in the delivery. A lower RCV will result in Ofwat setting lower prices. Managers therefore have an incentive to deliver the agreed programme of investment and to ensure that the investment provides customers with the outputs that are expected.

11.5 The mechanics of interim determinations

The interim determination process consists of a number of well-defined steps. An important feature of these

steps is that they are transparent. All company requests, or Ofwat proposals, for a change in the price cap between regulatory reviews are published. Similarly, Ofwat's assessments of the cost and revenue impacts of RCCs or NIs are published. In addition, before any price cap is changed Ofwat consults with industry stakeholders and the general public.

This transparency is an important part of the regulatory framework. Regulation provides customers with certainty by setting price caps or revenue caps for a period of time. If the regulator changes price caps or revenue caps before the next regulatory review he risks causing uncertainty and inconvenience to customers. He also risks undermining the credibility of the price caps or revenue caps that are set at future reviews.

In order to avoid these problems it must be clear to customers that any changes to price caps or revenue caps that are made between reviews are not arbitrary. Instead, customers must understand that changes are justified and that they are made according to a well-defined process that is based on a clear set of rules. The steps in Ofwat's approach to an interim determination are as follows:

Step 1: The interim determination must be initiated.

Either the company or the Director General of Water Services can submit a notice for an interim determination. If either does, the other can submit a counter claim within a limited period. Companies must request an interim determination by 1 October of the year before the charging year for which they are seeking revised price limits. The charging year begins on 1 April each year. It follows that, for example, if a company had wished to have its charges revised for April 2003, it would have had to apply for an interim determination before October 2002.

Step 2: Ofwat confirms that the factors forming the basis of the claim are within the current RCCs or NIs.

Following a request for an interim determination, Ofwat will confirm that the factors declared fall within the

³ A short-hand acronym 'IDOK' is sometimes used by commentators (interim determination of 'K', the price limit).

current definitions of RCCs or NIs. Changes that affect the economy in general, for example the April 2003 change in National Insurance contributions, are picked up in the RPI element of the price cap. A company could not, therefore, use this factor to request an interim determination. If such general factors were included in the interim determination, their effect would be double counted.

Step 3: For each individual factor, Ofwat applies a triviality test.

When Ofwat considers whether a change is a relevant item, it only takes account of non-trivial changes. If the net present value (NPV) of a specific change is less than 1% of a company's turnover for the last reporting year, then it would be considered to be trivial and it would not be included as part of the materiality test. However, when assessing triviality, Ofwat groups together all schemes that are carried out in response to a single RCC. For example, all of the work necessary to comply with a cryptosporidium notice will be considered together (both monitoring and additional treatment costs).

Step 4: For all factors taken together Ofwat applies a materiality test.

The combined NPV of all of the factors must be more than 10% of the appointed business' turnover. For example, if one factor is worth 3% of turnover, another is worth 5%, and yet another is worth 4%, the total effect is 12%. This is sufficient to trigger an interim determination despite the fact that no single factor is worth 10% of turnover.

If the costs incurred do not relate to a relevant change in circumstance the materiality threshold is doubled.

The test is applied by calculating the NPV of the change in cash flows resulting from the factors. If costs are higher than forecast, the difference between forecast costs and actual costs is estimated. In the case of operating costs the difference is estimated for the period from when the additional costs began until the next price review. In the case of capital costs the difference is estimated for a period of 15 years from when the

investment was made. If revenues are lower than forecast, the difference between forecast revenues and actual revenues is estimated. The difference is estimated for a period of 15 years from when revenues fell below the forecast level.

Step 5: Revised price limits are calculated.

If the materiality threshold is passed, Ofwat calculates what change should be made to prices to recover the additional costs or allow for the reduction in costs. Ofwat's decisions on changes to price limits must be made within three months of a request.

Step 6: The company may appeal to the Competition Commission.

If the company does not accept Ofwat's assessment it may refer the issue to the Competition Commission.

11.6 The mechanics of logging up and down

A standard process is used to evaluate each item in a logging up claim or a logging down proposal. Ofwat set out the mechanics of the process in its publication, *'Setting water and sewerage price limits for 2005-10'*:

"Logging up

Logging up is an established policy used at the 1994 and 1999 reviews. The policy provides a means by which each company can seek to have the reasonable continuing net additional costs of meeting changes in obligations, standards or demands not previously recognised in price limits, reflected in the periodic review determinations. The policy aims to reflect forward costs from the start of the new price limit period (ie from April 2005 for this review). Logging up is not an alternative to an interim determination.

The policy deals primarily with capital costs. The policy does not seek to remunerate the in-period costs (ie in years 2000-01 to 2004-05 for this review). Without a logging up procedure a company would risk losing excess capital costs incurred to meet the

changes above the assumed investment profile. The policy can also be used where the impact of the changes has been managed within the assumed investment profile to avoid damaging the capital expenditure rolling incentive mechanism.

Our general policies on the base year starting position for operating expenditure and revenue deal with most of the operating expenditure and revenue issues associated with recognised changes. The exception is the adjustment to the opening position for the operating expenditure rolling incentive mechanism to avoid the loss of outperformance benefits caused by new quality obligations, notified items and service enhancements. If no such adjustment was made then outperformance benefits could be reduced or eliminated by costs arising from new obligations.

A standard process is used to evaluate each item in a logging up claim. This is set down in outline below. The information needed to inform the process is set down in section C5, table C15 of the PR04 business plan information requirements manual. The main submission on logging up should be in the draft business plan in August 2003 with an update in the business plan in April 2004.

Step 1. First triviality test. Are the submitted costs associated with the claimed change above the triviality threshold? The triviality threshold for a single change is 1% of service turnover in year 3 or when aggregated with other small changes is 3% of total service turnover in year 3. If yes proceed to step 2, if no disallow item.

Step 2. Recognised change. Is the item a recognised change not previously provided for in price limits? Is there a definitive output and due date for delivery or compliance? Recognised changes are normally in the following categories. The list is not exhaustive but the burden of proof lies with the applicant.

- **A new quality obligation** that results in a change in regulations or consents affecting the company and not previously included in price

limits. The item needs to be confirmed as a necessary change that is being enforced by either the Drinking Water Inspectorate or Environment Agency.

- An obligation covered by a **notified item** at a previous review in that it was not or only partially included in price limits.
- A **service enhancement** that has resulted in a permanent improvement in recorded service level over and above that required as part of the previous review package. Recognition of the change requires the prior endorsement of the need for the enhancement by WaterVoice and, prior notification to us of the intention to make the enhancement together with reasons and anticipated costs. If we have commented adversely on the proposal at the notification stage then it would not be accepted as a recognised change.
- Increases in **demand for water** above those assumed in price limits that have resulted in the need to commission new resources. The new resources must be shown to be necessary to maintain adequate security of supplies for the foreseeable future. Recognition of the change requires clear evidence of the increase in customer demand rather than increase in leakage. These items are not carried forward into the rolling incentive calculations since the objectives are not to protect from these in period risks and to encourage robust forward planning in the company.

If the item meets the requirements of any of this list then proceed to step 3, if not then disallow the item.

Step 3. Reporter's confirmation. Has the company's reporter confirmed that both the solution chosen and the submitted costs are reasonable and properly set down as relevant to the change? If confirmation satisfactory then proceed to step 4, if not then refer item back to company and reporter for resolution of the concerns. If this is not forthcoming then the item will be disallowed.

Step 4. Reasonable net additional costs.

Adjustments to the submitted costs to reflect both concerns arising from the reporter's scrutiny and catch-up factors identified through the relative efficiency analyses. No adjustments will be made for a company at the efficiency frontier. These adjustments are to ensure that customers only finance reasonably efficient costs and to provide strong incentives for efficient delivery.

Step 5. Second triviality test. Are the reasonable net additional costs associated with the recognised change above the triviality thresholds (Step 1). If yes proceed to Step 6, if no disallow item.

Step 6. Financial adjustments. The reasonable net additional capital costs related to all the recognised items are carried forward into the opening Regulatory Capital Value and so reflected in the return on capital assumptions in price limits.

For recognised items associated with new obligations, most notified items and service enhancements, the reasonable net additional costs are also used to revise the in period regulatory expenditure profile (operating expenditure) or total (capital expenditure). The revised profile or total is used in the rolling incentive mechanism.

Logging down and shortfalls

Logging down is the mirror image process, normally triggered by Ofwat, where changes in obligations, standards or demands not previously recognised in price limits reduce costs or where outputs already financed in price limits are no longer required. The process then ensures the reasonable continuing net reduced costs are reflected in periodic review judgements. Again the policy aims to reflect forward costs from the start of the new price limit period.

Shortfalls are associated with a failure to deliver on time assumed outputs already financed in price limits. In addition to the standard logging down there is also an adjustment to reflect in full the net present value of the 'benefit' accruing to the company from the

delayed delivery or failure to deliver the output in the current period. This represents a cost neutral adjustment not a penalty since the relevant quality regulator could seek through the court penalties for shortfalls in meeting quality requirements.

We use the costing assumptions and phasing from the previous review of prices for the calculations for both logging down and shortfalls."

11.7 Consistency between logging up and down and interim determinations

In MD179 '*Logging up and down – dealing with shortfalls in outputs and new requirements between periodic reviews*', 28 June 2002, Ofwat consulted on the issue of consistency between logging up and down and interim determinations. Ofwat stated:

"3.1.1 Companies believe that there should be a clear link between the logging up process and interim determinations. Items which are normally logged up are those that result from RCCs or NIs that were not material enough to trigger an interim determination, particularly new legal obligations.

3.1.2 Companies have suggested that the logging up process should aim to put companies in the same financial position as if the item at issue had been included in price limits (either at the previous periodic review or an interim determination).

3.1.3 Differences between the logging up process and interim determinations arise in two ways:

- the treatment of financing costs for capital investment, and
- the treatment of operating costs and revenue losses.

3.1.4 [...] When we log up capital expenditure, we do not make any allowance in price limits for the cost of financing the investment from the date it was incurred until the start of the next price review. Shareholders bear the cost of this for up to five years. (Similarly where an item is logged down, shareholders benefit

from the financing costs allowed in price limits for up to five years.) For an interim determination, the financing costs are allowed (or recovered) from the date the investment is incurred (or was expected to be incurred).

3.1.5 However, our current approach allows us to challenge the companies' assumptions, proposals and performance rather than directly manage the delivery of the outputs required. The current processes provide incentives to the companies to identify changes to outputs which entail additional costs. There are much weaker incentives for companies to identify changes where outputs are less onerous than we originally assumed. Because there is an information imbalance between the companies and the regulator, it is difficult for us to identify such changes. The trade-off in changing the logging up process to one which puts companies in the same financial position as if the item had been included in price limits, would be for us to try to counter or remove this imbalance. We would have to devote significant time and effort and a higher degree of scrutiny to identify changes lessening the obligations on companies to the same extent as the companies identify ones requiring more work. This would involve additional monitoring and data gathering, more risk of managing rather than challenging companies and hence a weakening of the incentives provided by the RPI-X regime.

3.1.6 For operating costs and revenue losses we allow, through the logging up (or logging down) process, any increase (or decrease) arising from those items identified as an RCC or a NI from the first year of the next price review period only, not from when the change in costs first arises. For an interim determination, all past operating costs and revenue losses relating to an RCC or NI are accumulated and recovered through the new price limits. As the NIs introduced at the 1999 periodic review are mainly operating cost and revenue based, this has highlighted the differences in treatment.

3.1.7 In the past the costs which have been logged up have related to changes in the quality enhancement programme. The vast majority of these costs have

been capital costs. The treatment of operating costs and revenues for logging up purposes has not been an issue. However, we took specific account of the increased likelihood of changes involving operating costs and revenues at the 1999 periodic review when we amended the materiality calculation for interim determinations.

3.1.8 As with changes in capital costs, the trade-off for aligning the interim determination and logging up processes for changes in revenue and operating costs would be increased scrutiny and challenge to identify items to be logged down. It would be a major exercise for us to put in place processes to do this. Companies would have to clearly separate out shortfalls in outputs from efficiencies. Our efficiency assessment would have to exclude the effect of any shortfalls and other calculations, such as the rolling incentive mechanism for operating costs, would also have to be adjusted.

3.1.9 We believe that the current balance between interim determinations and logging up is about right. While we do not believe that companies should retain unneeded funds, neither do we believe that companies should be required to fund all material changes in requirements between reviews. Although there have been more interim determinations since the 1999 periodic review, this is a direct result of the NIs we introduced and the change in materiality calculations for the impact of revenue losses and increased operating expenditure."

In *'Setting price limits for 2005-10: Framework and approach'*, Ofwat explains why it does not intend to amend the logging up process:

"9.23 In the consultation we set out our concerns that amending the logging up process would remove incentives for companies to challenge or seek to reduce the financial impact of new legal obligations placed upon them as costs would be fully reimbursed by customers. The companies argued that they would continue to do this regardless of a change in the logging up process. Some other respondents argued for changing the logging up process to encourage companies to carry out more environmental improvements.

9.24 Our concerns set out in MD179 remain. There is an asymmetry of information which exists between the companies and the regulator. Companies have incentives to identify items to be logged up but not those to be logged down. If we amended the logging up process we would have to subject companies to much more scrutiny and challenge to identify items to be logged down. In their responses companies argued that they believe we have all the necessary information to identify items for logging down. While we are able to identify the most significant of these items we continue to believe that we would have to take steps to address the information imbalance. Even if we did this it would still be less easy for us to identify items for logging down than it is for the companies to identify those for logging up.”

We would agree with Ofwat that the regulated company tends to benefit from the information asymmetry between the regulator and the regulated entity. While we understand the potential advantages in bringing the rules for interim determination and logging up/down more into line, we do not believe that this would be practical. Ofwat has explained the increase in the regulatory information requirement that would be required. We do not believe that this would be consistent with the Better Regulation Task Force’s requirement that regulation be better targeted.

11.8 Interim determinations and logging up and down in Scotland

11.8.1 Are interim determinations or logging up/down required in Scotland?

We explained earlier that in preparing either advice or a determination, a regulator has to form a view on the costs that are likely to be incurred several years into the future. This requires him to forecast inflation (both for retail prices and capital expenditure), costs of capital and as the timing and efficiency of investment. Some of these assumptions are likely to favour the regulated company, others are likely to favour customers. An adjustment to the price settlement is required when either the customer or the company benefits by a significant amount.

A good example from the last Strategic Review of Charges is our forecasts of retail price and capital goods inflation. We overestimated retail price inflation and, to date, have underestimated capital inflation. At the current time, Scottish Water has been disadvantaged by a total of £31 million. We believe that this is not material and that an adjustment to prices would not have been appropriate.

However, there have been two circumstances where, if there had been a mechanism for adjusting prices, it may have been appropriate to consider an interim determination:

- the unsubstantiated claim for efficiency made by the former East of Scotland Water Authority prior the last Strategic Review; and
- the current slow progress in the delivery of the *Quality and Standards II* programme.

In our *Costs and Performance Report 2002-03*, we noted: “In the Strategic Review of Charges, the capital efficiency targets set for each of the three authorities were the same. However, we explained that the actual percentage targets that were set for the former East of Scotland Water Authority were lower. This reflected efficiencies claimed by the authority in the definition of its investment needs during the second Quality and Standards process.

Since the Strategic Review we have attempted but been unable to confirm the efficiencies claimed by the authority. We can only assume that these efficiencies were not made. It is therefore in customers’ interests that Scottish Water be required to improve its future capital efficiency by an amount equivalent to the extra cash made available to Scottish Water in the current regulatory period. The additional savings that will be required amount to £74 million.”

Similarly, slower delivery of the capital programme results in Scottish Water having received more money from customers relative to the outputs delivered than was intended. In such circumstances we believe that it could be appropriate to seek an interim determination.

11.8.2 Proposed approach

In Chapter 4, we discussed the importance of ensuring that the regulatory regime establishes a robust framework. It is vital that a regulated company faces a tight budgetary constraint; in the absence of such a constraint there will be little pressure on the company to improve its efficiency. This would clearly not be in customers' interests.

We also differentiated between a 'shock' that was the result of ineffective management, and circumstances where the outputs required from a company changed. It is important that customers do not pay twice for the same output, but also that they benefit from a financially sustainable industry. This requires the regulator to distinguish between such shocks. A company should be able to be confident that unscheduled pro-active investment, which will benefit customers, is taken into account in setting prices. Similarly, the company should know that a delay in delivering benefits to customers will also be taken into account.

Our proposal to use the Regulatory Capital Value method of price setting will make any future adjustments to Scottish Water's price caps more transparent. Ofwat's approach to interim determinations and logging up and down has been in place for more than ten years. The mechanisms used are well documented and well understood. For this reason we propose to adopt Ofwat's approach as far as is consistent with the framework of the industry in Scotland.

We propose to adopt the same timetable as Ofwat for interim determinations. This would require either this Office or Scottish Water to give notice by 1 October in the year before the interim determination should take effect.

We propose to set out clearly the timetable, rules and consultation process for interim determinations in our draft determination of prices.

important safeguard (for customers and for companies) in Ofwat's regulation of the privatised water and sewerage industry. They help to reduce the operating risk for companies and consequently their cost of capital. They also provide a clear incentive for companies to deliver the outputs included in the regulatory price settlement.

We believe that both Scottish Water and its customers would benefit from the introduction of interim determinations and logging up and down in Scotland. The views of stakeholders would be very welcome.

11.10 Questions for consultation

1. Do stakeholders believe that there should be a process to adjust prices during a regulatory control period? If so, should we seek to introduce a process for interim determinations?
2. Do stakeholders believe that it is appropriate to adjust prices in the next regulatory control period to reflect actual outcomes in the previous period? If so, should we seek to introduce a similar process to Ofwat's logging up and down?
3. What factors should trigger an interim determination? At what level of materiality should an interim determination be triggered?
4. Are there other relevant changes in circumstance that we should consider introducing?
5. What is the most effective method for consulting with customers about a potential price change?
6. Would customers prefer the regulator to revise prices downwards during a regulatory period (eg in the event of slow delivery of outputs) even if prices are likely to increase by a greater percentage in the future as a consequence?

11.9 Conclusion

Interim determinations and logging up and down are an

Section 3: Chapter 12

Setting price caps: the role of the tariff basket

12.1 Introduction

We are committed to improving the transparency of the regulatory regime. As part of this commitment, we believe that it is vital that customers can more readily understand the likely impact of the *Strategic Review of Charges 2006-10* on their bills.

In earlier chapters we discussed how we intend to assess the level of revenue that Scottish Water should be allowed to raise from customers. This chapter sets out our proposals for translating the allowed revenue into the tariffs that impact on customers' bills.

In January 2005, we expect to receive guidance from Scottish Ministers on the principles of charging that should be applied in the *Strategic Review of Charges 2006-10*. This guidance will identify any cross subsidies between customer groups that need to be unwound.

We propose to establish tariff baskets to cover the principal [core] services provided by Scottish Water. The use of tariff baskets will also help to ensure that the process of unwinding cross subsidies is as transparent as possible. In addition, we consider that tariff baskets will allow customers to see more clearly the likely impact of the Strategic Review on their bills. In this regard, our proposals to increase the number of 'standardised customers' (which we discuss in the next chapter) will further increase transparency in the price setting process. Adopting 'tariff baskets' will also bring the price setting process more into line with the other utility regulators in the UK, such as Ofgem, Ofwat and Postcomm.

The detail of the tariff baskets will be available on our website early in 2005. This will give customers better access to information about bills and will help strengthen the regulatory regime.

The chapter begins by reviewing the current annual process for the approval of charges and the structure of tariffs in Scotland. It continues by describing how tariff baskets work and our proposals to use them in Scotland.

12.2 Current regulatory framework

In 2001, the Minister for Environment and Rural Affairs commissioned a Strategic Review of Charges. He asked for the Review to cover the period 2002-06. The Review had to provide advice on the factors that should be taken into (and left out of) account in the setting of charges. The Minister could accept the advice, accept the advice with modifications, or reject the advice and substitute his own advice. The original advice and the Minister's response (including reasons if he amended or rejected the original advice) needed to be published.

Scottish Water has to provide this Office with a 'scheme of charges' each year during the regulatory control period. This scheme of charges contains its proposals for tariffs for the next financial year. Our role is to review this submission and to establish whether the scheme of charges is consistent with the advice that was accepted by Ministers. We analyse whether or not:

- the proposed tariffs are consistent with the agreed revenue caps;
- the balance between customer groups and between types of tariff are consistent with the advice.

If we are content that the scheme of charges is consistent with the advice accepted by Ministers, we approve the scheme. If not, we have to propose amendments such that the scheme of charges would be consistent with the advice. If Scottish Water accepts the amendments, we approve the scheme of charges. In the event that we cannot agree a scheme of charges with Scottish Water, we refer the proposed scheme and our suggested amendments to the Scottish Ministers. They will then set charges for the next financial year.

12.3 Limitations of the current regulatory framework

As we discussed in Chapter 2, many customers have not understood the impact of the *Strategic Review of Charges 2002-06* on their bill. We believe that this has not been helped by the annual scheme of charges approval process.

Over the period of the current Strategic Review of Charges, it has become clear that the existing arrangements for establishing charges, and communicating changes to customers, have a number of limitations. In particular:

- the link between the revenue cap and customers' bills is not clear;
- information on tariffs is not available until around two months before they take effect;
- there is only limited scope for flexibility in the approval process for the annual scheme of charges.

In Chapter 5, we discussed our proposals to introducing 'price caps' in place of revenue caps. A price cap regime would establish a clearer link between the Strategic Review of Charges and the bills that customers pay. We believe that setting price caps will allow customers to understand the likely impact of any tariff changes on their bill.

By using tariff baskets we can establish, and communicate to customers, the impact on bills of changes in charges. Tariff baskets are the collection of charges to which the annual regulatory price caps would apply. There are very many individual tariffs and it would be not be practical to set a cap on each individual tariff. Instead we group tariffs into baskets and impose a price cap on each basket. There can therefore be modest differences in the changes in the levels of the individual tariffs within a single basket, but overall the impact on all customers in that basket should be very similar.

12.4 The structure of charges in Scotland

Charges to individual customers will vary according to the type of customer and the service they are receiving. In particular, customers are classified as:

- domestic (household) or non-domestic (non-household – businesses, charities or public sector organisations);

- measured (metered), un-measured (un-metered) or (for wastewater only) trade effluent;
- water or wastewater.

12.4.1 Domestic unmeasured water

Unmeasured domestic (household) customers pay for water charges based on the Council Tax band of their home. Their bill does not depend on their consumption. Discounts are currently provided to single person household and to second home owners.

12.4.2 Domestic unmeasured wastewater

Charges for unmeasured domestic wastewater customers are also based on the Council Tax band of the property. This charge includes surface water and roads drainage¹. The same discounts are available.

12.4.3 Domestic measured water

Fewer than 1% of domestic customers have a meter. These customers pay a fixed charge based on the size of their meter connection and a volumetric rate based on how much water they consume. All domestic metered water customers currently have a standard 20mm connection. This is the smallest connection available.

In April 2004, Scottish Water introduced a low user tariff discount for domestic and non-domestic metered customers with a standard 20mm connection who use less than 25m³ of water² a year. Such customers now pay a lower standing charge but a higher volumetric rate for the first 25m³ of water. Their charges then revert to the standard volumetric rate for consumption greater than 25m³.

12.4.4 Domestic measured wastewater

Domestic metered water customers do not have a meter to measure their wastewater. Instead they pay a standing charge based on the size of their water meter connection and a volumetric rate which assumes that 95% of their water consumption is returned to sewer.

¹ Surface water drainage charges cover the cost of draining surface water from a property. Roads drainage charges cover the costs of draining surface water from the public highways.

² 1m³ of water is equal to 1,000 litres.

These customers pay for surface water and roads drainage based on the Council Tax band of their property.

12.4.5 Non-domestic unmeasured water

Unmetered non-domestic customers are currently charged relative to the rateable value of their property. These customers pay two fixed charges, neither of which reflect their consumption of water: a minimum charge for access to the network and an additional charge that is a proportion of their rateable value.

12.4.6 Non-domestic unmeasured wastewater

Charges for unmeasured non-domestic wastewater are also a function of the connected property's rateable value. Customers pay three separate fixed charges: a minimum charge for accessing the network and two charges that are a proportion of their rateable value. One covers wastewater and the second covers surface water and roads drainage.

12.4.7 Non-domestic measured water

Metered non-domestic customers pay a standing charge, which depends on the size of their meter connection, and a volumetric charge based on how much water they consume.

Non-domestic measured water customers with a standard 20mm connection are charged in the same way as metered domestic customers for water.

Larger meter connection sizes range from 25mm to 600mm. Annual water consumption up to 100,000m³ is charged at the standard 20mm volumetric rate. Customers who use in excess of 100,000m³ of water during the year receive a discount from the standard volumetric tariff for any consumption above the 100,000m³ threshold. A second increased discount applies above 250,000m³. Customers who commit in

advance to using a minimum amount of water can obtain a larger discount on their consumption over 100,000m³ and 250,000m³.

12.4.8 Non-domestic measured wastewater

Non-domestic wastewater customers pay a fixed charge based on the size of their water meter connection and a volumetric rate based on an assumption that 95% of their water consumption is returned to sewer. If a customer can demonstrate that less than 95% of water returns to sewer (for example, a company that uses water in its production processes) then they can apply to have the assumption of 95% reduced.

There are no discounts for customers who discharge large volumes of wastewater.

The surface water drainage charge for non-domestic metered customers, whether metered or unmetered, is based on the rateable value of their properties.

12.4.9 Trade effluent

Charges for trade effluent are based on the Mogden formula³. This formula assesses a charge for the treatment of a particular strength and volume of effluent based on the costs of treating this wastewater.

Trade effluent customers pay an annual fixed charge on the basis of expected discharge of effluent and a variable rate based on the actual volume and strength of the effluent discharged.

12.4.10 Summary of charges

Table 12.1 presents a summary of Scottish Water's charges.

³ We discussed Scottish Water's charging for trade effluent and its use of the Mogden formula in Volume 2 of our methodology consultation documents. This is available on our website at www.watercommissioner.co.uk.

Table 12.1: Summary of charges

	Type of charge		
	Fixed £ per annum	Fixed – based on rateable value (pence per £ of RV)	Volumetric (pence per m ³)
WATER			
Unmetered domestic	✓		
Metered domestic	✓		✓
Unmetered non-domestic	✓	✓	
Metered non-domestic	✓		✓
SEWERAGE			
Unmetered domestic			
Wastewater (including foul and surface water drainage)	✓		
Metered domestic			
Sewage	✓		✓
Surface water drainage	✓		
Unmetered non-domestic			
Sewage	✓	✓	
Surface water drainage		✓	
Metered non-domestic			
Sewage	✓		✓
Surface water drainage		✓	
Trade effluent	✓		✓ ⁴

12.5 A definition of tariff baskets

In the previous section we outlined the wide range of services provided by Scottish Water. A tariff basket would include all of the tariffs that impact on customers who receive a particular service. For example, if measured non-domestic customers were considered as a group, all of the tariffs that impact them would be included. Such a tariff basket would therefore include the standing charges relating to the different sizes of connection available and the volumetric tariff.

The balance of tariffs within the basket will be determined by the number and type of connections, amount discharged and by increases or decreases in the tariffs included in the basket.

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

⁴ Trade effluent is charged for using both volume and strength.

⁵ See Chapter 7, Financial Modelling.

In this example, there are just two tariff baskets:

	Number of customers Years 1 + 2	Consumption Years 1 + 2	Tariff Year 1	Tariff Year 2	Revenue Year 1	Revenue Year 2
Basket A	5	10	£1.00	£1.50	£50.00	£75.00
Basket B	5	10	£2.00	£2.50	£100.00	£125.00
Total	10	20	-	-	£150.00	£200.00

A 50% increase is allowed in Basket A and a 25% increase in Basket B. Revenue from Basket A increases from £50 to £75 and from Basket B from £100 to £125. Total revenue increases from £150 to £200.

12.6 Defining the weighted average price increase (WAPI)

WAPI is the weighted average price increase and is a measure of the overall impact of all the tariff changes in each tariff basket. It is therefore the amount by which tariffs on average have increased within the tariff basket.

At the Strategic Review of Charges we are proposing to set real caps on the weighted average price increase on each tariff basket. A real price cap is the allowed change in prices after inflation. If the real WAPI cap is zero, then prices would increase at the rate of inflation.

We will also estimate the implied nominal price cap in the *Strategic Review of Charges 2006-10*. The actual nominal price cap will be set in line with the appropriate level of the Consumer Price Index (CPI) for the setting year⁵.

We propose that the price cap regime should be applied in Scotland in the same way that it is applied in England and Wales. Scottish Water would be permitted to carry over any unused change in prices from one year to following years. We should not penalise Scottish Water for choosing to have charges below their allowed price cap in any one year. Unused price cap is denoted with the letter 'u'. The real price cap is denoted by the letter 'k'.

The maximum weighted average increase in prices is determined as follows:

$$WAPI \leq CPI + k + u$$

12.7 The use of tariff baskets; ensuring compliance with the price caps

We need to take account of the combined impact of changes in the individual tariffs that make up a customer’s bill. We do this by calculating a ‘weighted average’ change in prices for the tariff basket. We compare this with the price cap that has been applied to the tariff basket.

The weighted average price change is calculated by multiplying the percentage of Scottish Water’s total revenue that each tariff comprises by the change in the tariff. This gives a weighted percentage increase for each tariff. The total of these weighted percentage increases is then the overall weighted average.

This is illustrated using a sample tariff basket containing just three tariffs.

Table 12.2: The use of weighted average tariffs

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

The weighted average increase provides a good indication of the impact on customers, as it takes account of the relative size of the impact from each tariff change.

The impact of a change in tariffs may be different in subsequent years. It will depend on the importance of that tariff to the total revenue contributed by that tariff basket. In Table 12.3, the importance of Tariff A to total revenue has declined, while Tariff B’s has increased. The increases in tariffs remain the same.

Table 12.3: Effect of changing usage of different tariffs

	% increase	% of total revenue	Weighted % increase
Tariff A	5%	40%	2.0%
Tariff B	-5%	30%	-1.5%
Tariff C	20%	30%	6%
Weighted average (A+B+C)	-	-	6.5%

We believe that our proposed approach ensures that customers within a tariff basket are treated equitably. Introducing tariff baskets into the charging regime also would allow us to analyse carefully the impact of tariff changes on total revenue when customers each buy a different mix of services.

12.6 Timetable for setting charges

We are keen to establish a clear timetable for the annual tariff setting process. Our proposed timetable for 2006-07 is set out below. We use the following terms:

Charging year – the financial year to which the tariffs will apply (2006-07).

Setting year – the financial year in which the tariffs are set (which is one year prior to the charging year, 2005-06 in this example).

Reference year – the financial year from which customer information is taken (which is two years prior to the charging year, 2004-05 in this example).

Table 12.4: Proposed timetable for setting charges for 2006-07

End September in reference year (2004-05)	<ul style="list-style-type: none"> Customer numbers set Rateable value set
End March in reference year (2004-05)	<ul style="list-style-type: none"> Water and sewage volumes set Trade effluent volumes and loads set Revenue split set
April of setting year (2005-06)	<ul style="list-style-type: none"> Scottish Water proposes any new tariffs
June of setting year (2005-06)	<ul style="list-style-type: none"> Scottish Water submits customer numbers, rateable value information, consumption and revenue split in the annual 'June Return' for the reference year.
Beginning of September in setting year (2005-06)	<ul style="list-style-type: none"> Scottish Water submits scheme of charges, including tariff basket information.
End of November reference year (2004-05) to end of November setting year (2005-06)	<ul style="list-style-type: none"> CPI to be applied to prices is measured.
December of setting year (2005-06) set the inflation figure.	<ul style="list-style-type: none"> We write to Scottish Water to the inflation figure.
End December in setting year (2005-06)	<ul style="list-style-type: none"> We either approve the proposed scheme of charges or announce an alternative scheme with an appropriate explanation.
1 April in charging year (2006-07)	New tariffs take effect.

We recognise that tariffs will not be finalised until the end of December in the year before they would come into effect. However, the Strategic Review of Charges will have set out in detail the proposed weighting to be applied in each year to each tariff basket. This weighting will be in line with the guidance provided to us by the Scottish Ministers in January 2005. The Review will also forecast likely customer numbers.

This information, combined with the maximum revenue allowed to Scottish Water, should allow most customers to have a broad understanding of the likely level of their bill in each year of the regulatory control period.

12.8 Our proposed approach to tariff baskets

In England and Wales the process and formulae which define the tariff baskets used in setting prices are contained within condition B of the companies' operating licenses. Scottish Water's duties are set out in statute and there is no equivalent licensing regime in Scotland. We therefore propose to describe our proposed tariff baskets in detail in our *Strategic Review of Charges 2006-10*.

We propose to use the following information to determine the weighted average price increase:

- tariffs in the setting year;
- tariffs in the charging year;
- half-year customer numbers from the reference year;
- half-year rateable values in the reference year;
- water and sewage volumes for the reference year;
- trade effluent volumes and loads for the reference year;
- revenue split in the reference year; and
- the change in CPI between 1 November in the reference year and the end of October in the setting year.

We propose that there should be eight or ten separate tariff basket items:

- domestic unmeasured water;
- domestic unmeasured wastewater;
- non-domestic unmeasured water;
- non-domestic unmeasured wastewater;
- measured water [possibly split 20mm connection and other];
- measured wastewater [possibly split 20mm connection and other];
- surface water drainage (excluding unmeasured domestic); and
- trade effluent.

We believe that it may be worth considering the introduction of two separate tariff baskets to include tariffs (except surface water drainage) for customers

with a standard metered connection. There are four principal reasons why we consider that this may be worthwhile:

- metered customers with a standard connection are more like households than other metered customers;
- monitoring prices for this group separately should help to ensure that the interests of domestic customers are properly protected in the event that Parliament approves the current Water Services (Scotland) Bill;
- it should be easier to reflect the outcome of the 'Paying for water services' consultation in the tariff basket weightings; and
- the extra tariff baskets should improve the predictability of prices for a large number of smaller businesses.

There are two principal reasons why we should restrict the number of tariff baskets to eight:

- Scottish Water would have less flexibility in managing the expectations of its business customers; and
- greater complexity is introduced to price setting.

On balance we believe that the advantages outweigh the two potential disbenefits. We are, however, keen to hear the views of stakeholders on this point.

Our proposed approach uses a greater number of basket items than there are for the companies in England and Wales. Ofwat uses only five tariff basket items for water and sewerage companies, namely:

- measured water;
- unmeasured water;
- measured wastewater;
- unmeasured wastewater; and

- trade effluent.

We propose to introduce at least eight tariff baskets for three main reasons:

- Unmeasured domestic customers' bills are based on the Council Tax band of the property, whereas unmeasured non-domestic properties are currently billed on the basis of their rateable value. If we put both groups of customers in the same basket item then it is possible that the reported increase for the combined group would not be representative of either customer group.
- The Scottish Executive has asked us to determine charge limits for various customer groups. It seems appropriate that this should involve looking at smaller non-domestic, domestic, smaller and larger non-domestic customers separately. Putting domestic customers in separate tariff basket items would facilitate the determination of charges in line with guidance from Ministers.
- The Scottish Executive is currently proposing that the way Scottish Water charges for unmeasured non-domestic services should be changed in order to remove some of the anomalies created by rateable value charging. The impacts of this change will be easier to evaluate if we include unmeasured non-domestic water and wastewater as a separate item.

We also propose to separate the recovery of surface water drainage costs from the measured and unmeasured wastewater services. If surface water drainage and wastewater charges were grouped in a single basket item, tariff changes on actual bills may be quite different to changes in revenue from the tariff basket. Moreover, the Scottish Executive's proposal to change the method of charging for surface water drainage should be easier to implement and to monitor if it is kept as a separate item.

12.8 The use of the tariff basket

It is important to use a consistent method to calculate the appropriate weightings of tariffs. There are three possible ways we could weight our proposed tariff basket:

- By using the actual breakdown of revenue for each tariff in the reference year.
- By calculating a notional revenue for each tariff based on the customer numbers in the reference year and tariffs in either:
 - the setting year, or
 - the charging year.

We propose that the actual revenue in the reference year should be used to weight each of the increases in the tariff basket. This method is consistent with the approach adopted by Ofwat. It also has the advantage of being based on actual revenue from various customer groups.

Our proposed approach involves the following three stages for each tariff basket item:

- A notional revenue for the setting year is calculated. This involves multiplying the customer information in the reference year by the tariffs in the setting year.
- A notional revenue for the charging year is calculated. This involves multiplying the customer information in the reference year by the proposed tariffs for the charging year.
- We would then establish the percentage increase for the tariff basket item by dividing the notional revenue in the charging year by the notional revenue in the setting year, subtracting 1 and multiplying by 100.

An example should help to explain our approach. We have to assess the change in charges for metered water between Years 2 and 3. We would need to know the customer numbers for Year 1. We will assume that there were 10 customers and each had a 20mm meter

connection. We also assume that the total metered water consumption for the ten customers was 1,200m³.

We also need to know what the tariffs were in Years 2 and 3. Table 12.5 shows the tariffs used in this example. Table 12.6 shows how the percentage increase in measured water is calculated.

Table 12.5: Example tariffs

	Year 2	Year 3
20mm fixed charge	£150	£200
Water rate (£/m ³)	£0.75	£0.60

Table 12.6: Calculation of the percentage increase in revenue from a tariff basket

	Year 1 (units)	Year 2 (revenue)	Year 3 (revenue)
Standing charge	10	£1,500	£2,000
Volumetric	1,200	£900	£720
Total		£2,400	£2,720
Percentage increase			13.33%

We would repeat the calculation in Table 12.6 for each of the eight or ten items in Scottish Water's tariff basket. This would give us the increase for each item. We would then check that the revenue likely to be raised from each tariff basket was consistent with the weightings set out in the Strategic Review of Charges. To do this, we would weight the implied increase in revenue from the tariff basket with the weightings for the appropriate reference year.

12.8.1 Comparison with Ofwat's approach

For measured customers we are proposing to use the same approach as Ofwat. We would use one set of customer numbers and calculate the impact of the percentage increase in charges on total revenue⁶. Each year's price change would not use information from any previous year's change in price.

For unmeasured services, however, we would propose to use a different approach from that taken by Ofwat. It calculates one notional total revenue and a

⁶ Since the customer numbers are the same it does not matter whether average bill or total revenue is used.

corresponding average bill each year. This notional average bill is compared with the previous year's average bill to work out the percentage increase for this group of customers.

The notional revenue is calculated by multiplying the tariffs in the charging year by the customer numbers as at December of the prior year. The average charge is calculated by dividing this notional revenue by the number of customers in the December of the prior year.

For example, Ofwat used customer numbers from December 2003 to assess the unmeasured price increase for 2004-05. Ofwat first multiplied the tariffs for 2004-05 by customer numbers in December 2003 to create the notional revenue. Ofwat then divided this notional revenue by customer numbers in December 2003. This created the notional average charge for 2004-05. Ofwat calculated the percentage increase in charges by dividing the notional average charge for 2004-05 by the notional average charge for 2003-04⁷.

The difference between Ofwat's approach for measured and unmeasured price changes would have no impact if all unmeasured customers were identical or if there were no changes to the unmeasured customer base. However, if a customer who leaves the unmeasured basket has a higher than average bill, bills for customers that remain within the basket must rise in order to maintain the average. Conversely, if a customer who leaves the basket has a bill of lower than the average, bills for customers that remain within the basket must fall in order to maintain the average.

There are three main reasons why we propose not to adopt Ofwat's approach to unmeasured charging:

- We believe that Scottish Water should not be able to offset the effects of a customer leaving the unmeasured basket by increasing charges to other unmeasured customers. It would be difficult to justify to unmeasured customers why their charges are rising faster than those for other customers. This would not be consistent with charges being broadly cost reflective;

- One of the reasons why the current approach to unmeasured services was introduced in England and Wales was to allow water companies to collect the same level of revenue as the customer base gradually moved towards metered services. It helped to create an incentive to switch to a metered tariff; and
- Ofwat has previously proposed changing this method. In a 1997 consultation, Ofwat proposed that the arithmetic of the unmeasured basket items should be changed so that they were similar to the metered basket items. The water companies rejected this proposal. We would have reservations about introducing a system which Ofwat itself has proposed to change.

12.8.2 Treatment of large customers

Larger customers in England and Wales can benefit either from an inset appointment or negotiation on price with their existing supplier. The inset arrangement allows another licensed supplier to supply customers⁸. Ofwat considers that pricing arrangements for larger customers could significantly distort tariff baskets and put at a disadvantage those who can neither benefit from competition nor negotiate.

Excluding large customers from the tariff basket has the effect that shareholders pay for these discounts.

In the public sector model in Scotland, the cost of any discount to one customer has to be paid by all other customers. Special agreements should only be entered into when everyone gains from the agreement. We would therefore propose that special agreements remain in the tariff basket. The creation of separate tariff baskets for standard measured customers would provide additional protection to such customers from the impact of any discount to larger customers.

⁷ Calculated the same way, but when Ofwat was reviewing the companies' tariff proposals the previous year.

⁸ There are 10 inset appointments in England and Wales. These are operated by Anglian, Thames, Hartlepool, Albion, Northumbrian, Severn Trent and Three Valleys.

12.8.3 Worked example of the proposed approach

The example below shows how our proposed approach to tariff baskets would operate. Table 12.7 sets out the split of revenue by tariff basket in Year 1. It also shows the percentage increases in Year 3. The weighted average increase in Year 3 is the percentage increase in each item multiplied by that item's share of total revenue in Year 1 that the item accounted for.

Table 12.7: Worked example of the use of tariff baskets

	Year 1 revenue (%) (A)	Year 3 increase (%) (B)	Weighted increase (%) (AxB)
Domestic unmeasured water	35%	1.0%	0.350%(C)
Domestic unmeasured wastewater	25%	0.0%	0.000%(D)
Non-domestic unmeasured water	3%	4.5%	0.135%(E)
Non-domestic unmeasured sewage	2%	12.0%	0.240%(F)
Measured water	10%	13.3%	1.331%(G)
Measured sewage	5%	-2.5%	-0.125%(H)
Measured water 20mm	35%	105%	0.3%(I)
Measured sewage 20mm	2%	0%	0%(J)
Surface water drainage	10%	0.9%	0.090%(K)
Trade effluent	5%	2.0%	0.100%(L)
Weighted average increase (C+D+E+F+G+H+I+J+K+L)			2.42%

If the company had been allowed a real increase of 0.5% in revenue for Year 3 and the appropriate CPI was 2%, the increase in charges would be within the weighted average price increase allowed. The company would also be allowed to carry forward 0.08% of an unused price cap to the following year.

It is important to emphasise that changes in the current balance of tariff baskets will be made to reflect the outcome of the Scottish Executive's Consultation, *'Paying for water services 2006-10'* and the Ministerial Guidance which we will receive in January 2005.

If Scottish Water wanted to change the balance of tariffs within a tariff basket, we would expect to see a clear and robust explanation of the rationale behind the change. Normally, we would approve such a proposal only if the proposed tariffs were demonstrably more cost reflective.

We summarise our proposed approach and the differences from the methodology used in England and Wales in Table 12.8.

Table 12.8: Summary of approaches in Scotland and in England and Wales

	Ofwat	Our proposals for Scottish Water
Basket items	<ul style="list-style-type: none"> Measured water Unmeasured water Measured sewage Unmeasured sewage Trade effluent 	<ul style="list-style-type: none"> Domestic unmeasured water Domestic unmeasured wastewater Non-domestic unmeasured water Non-domestic unmeasured sewage Measured water [possibly split 20mm customer and the rest] Measured sewage [possibly split 20mm customer and the rest] Surface water drainage (excluding unmeasured domestic) Trade effluent
Year used to weight charges	Reference year	Reference year
Unmeasured percentage increase	Measured using average charge from the setting year and comparing this with the average the year before. This gives companies increased certainty of revenue, but can cause large increases for unmeasured customers.	Measured using notional revenue. Customer numbers and volumes from the reference year are multiplied by tariffs in the setting year and the charging year. The percentage increase is the notional charging year revenue divided by the notional setting year revenue.
Measured percentage increase	Measured using notional revenue. Customer numbers and volumes from the reference year are multiplied by tariffs in the setting year and the charging year. The percentage increase is the notional charging year revenue divided by the notional setting year revenue.	Measured using notional revenue. Customer numbers and volumes from the reference year are multiplied by tariffs in the setting year and the charging year. The percentage increase is the notional charging year revenue divided by the notional setting year revenue.
Allowed increase	RPI + k + u	CPI + k + u
Where tariff basket is contained	In condition B of the companies' licences.	In the <i>Strategic Review of Charges 2006-10</i> .
Large customers	In England customers who consume more than 250,000m ³ are excluded. In Wales customers who consume more than 100,000m ³ are excluded. This is due to competitive supply for these customers.	All included within the tariff basket.
Special deals	Excluded from tariff basket as shareholders fund the discount for these customers.	Included within tariff basket.
When weighted average increase is assessed	February of the setting year.	September/October of the setting year.
Inflation measurement time period	November in reference year to November in setting year.	November in reference year to November in setting year.
New tariffs	To be based on sensible predictions of customer numbers.	New tariffs should be consistent with 'Paying for water services 2006-10'.

12.10 Summary

We propose to introduce the concept of tariff baskets to the water industry in Scotland. The tariff baskets and their weightings would be set out in the *Strategic Review of Charges 2006-10*. The introduction of tariff baskets should ensure that customers will be better placed to understand how their bills are likely to change during the regulatory control period.

In the next chapter, we outline our proposals to increase the number of standardised customers. This should further help customers to understand the likely impact of the Strategic Review of Charges on their bills.

12.11 Questions for consultation

1. Do you agree that the proposed approach for the tariff basket items is appropriate for Scotland?
2. Do you agree that we should introduce more tariff baskets than Ofwat?
3. Do you agree that we should establish tariff baskets for metered water and wastewater customers with a standard connection?
4. Do you agree that the proposed method for calculating the weighted average price increase is the most appropriate method to use? If not, which alternative method would be more appropriate and why?
5. Is a target date of the end of December for announcing tariffs (which will come into effect on 1 April in the following year) acceptable, given that details about tariff baskets and their weightings will be included in the *Strategic Review of Charges 2006-10*?

Section 3: Chapter 13

Standard customers

13.1 Introduction

In the *Strategic Review of Charges 2002-06*, we provided advice to Scottish Ministers on revenue caps. We also suggested that tariffs should be harmonised across Scotland for both domestic and non-domestic customers and that they should be made more broadly cost reflective. The impact of these recommendations was illustrated with reference to a number of standard customers.

We are keen to ensure that both the process and the outcome of the current Strategic Review of Charges are as transparent as possible. Consequently, we propose to develop our use of standard customers to help customers to understand better the likely impact of the Review on the bill that they pay.

This chapter starts by explaining the link between tariffs and bills. It then explains the role of standard customers and the changes that we propose to make.

13.2 The link between tariffs and bills

Sometimes the terms used to discuss bills can be confusing. When we talk about a bill, we mean the total amount a customer has to pay in a period¹. This bill will contain at least one tariff. A tariff is the amount that a customer pays for each unit of consumption of a particular service.

Consider, for example, hiring a bicycle. If a rental shop charged £2 per hour for hiring a bicycle, then £2 per hour is the tariff. If you hired the bicycle for five hours, you would pay £10. In this instance £10 is the bill.

In general when we look at Scottish Water's charges, we look at its tariffs. Scottish Water can propose amendments to tariffs to reflect more accurately their costs of providing the service.

The service that a customer receives or could receive depends on a number of factors. These include:

- type of connection (eg water/waste water, metered/unmetered);
- size of the connection;
- rateable value of the property;
- use of the service that the property makes;
- area of the property that drains to sewer;
- strength of the sewage it discharges; and
- Council Tax band for a household property.

A customer's bill will vary depending on the relative use of the services provided. For example, the bill for a domestic customer with no meter will be based on the Council Tax band of the property, whereas charges for a business customer with a meter will be based on:

- the size of the water connection;
- the amount of water consumed;
- an assumed size of the waste water connection;
- the assumed amount of waste water discharged; and
- the rateable value of their property (for draining surface water from the property).

The customer's bill will be the total sum of each of the relevant factors multiplied by the appropriate tariff.

If we want to provide visibility on how bills are going to change as tariffs change, we need a way to show how the changes will impact on bills for different customers.

For the 2.3 million domestic (household) customers this is a relatively straightforward process. These customers pay according to the Council Tax band of their property. This system is based on a defined number of ninths of a Band D charge. For example, a Band A customer pays

¹ Often this will be a year, however, some customers are billed monthly or quarterly, depending on their size.

six ninths of the Band D Charge, whereas a Band H customer pays 18 ninths. This means that charges to each unmeasured domestic customer rise or fall by the same percentage in any one year. They do not change by the same amount, as the Band H customer is paying three times as much as the Band A customer, so their bill will increase or decrease by three times the amount of the Band A customer's bill.

Scottish Water publishes the charge for each band in its annual scheme of charges. Domestic customers should therefore have sufficient information to understand how their charges will change.

Scottish Water has more than approximately 140,000 non-domestic customers. These customers will each require a quite different mix of services from the water and sewerage undertaker, so the impact of tariff changes will impact on their total bills in different ways.

This is perhaps best illustrated by a very simple example. There are three non-domestic water customers. These customers use different amounts of water as shown in Table 13.1.

Table 13.1: Sample customers' consumptions

Customer name	Water use description	Consumption (m3 per year)
Newsagent	Customer is a low water user.	10
Butcher	Customer is a moderate water user.	40
Tearoom	Customer is a high water user.	250

In this example, in Year 1 'ABC Water' levied a minimum charge of £50 on these customers and also charged them £1.00 per cubic metre of water used in year 1. In Year 2, ABC Water decided that, in order to make charges more reflective of the costs of supplying the customers, the minimum charge should rise to £100, while the rate for water usage should fall to £0.50 per unit.

Table 13.2 shows the customers' bills in Years 1 and 2. It also shows the percentage increase in each of their bills. The total figure represents the total revenue from the three customers of ABC Water in this example. The

total percentage increase refers to the increase in ABC Water's revenue.

Table 13.2: Impact on sample customers of changes in tariffs

Customer name	Bill in Year 1	Bill in Year 2	Percentage Increase
Newsagent	£60	£105	75%
Butcher	£90	£120	33.33%
Tearoom	£300	£225	-25%
Total	£450	£450	0%

In this example, ABC Water's revenue from the three customers has not changed year-on-year. However, two of the customers have faced very significant changes in their bills.

In practice, without analysing the components that make up each bill, it is impossible to predict the impact of tariff changes for every customer. We are therefore keen to establish a number of appropriate reference points in the *Strategic Review of Charges 2006-10*, so that customers can get a sense of the level of change in their bill that they are likely to experience.

13.3 Methods for assessing the impact of tariff changes

One way to assess the impact of tariff changes on bills would be to consider 'average customers'. This method is widely used in utility regulation where the impact of price changes on average bills are often quoted. There are, however, problems with this approach. The example with three customers shown above illustrate this.

The average yearly water use for all three customers is 100m3. If a customer existed that consumed this average amount, their bill would have been £150 in Year 1 and £150 in Year 2 - they would have seen no change and ABC Water could rightly claim that the tariff changes had not had an impact on the average customer. However, the bill did not stay the same for any of our three customers - in fact, two customers saw their bills rise by considerable percentages. It would be quite misleading to state that these tariff changes did not affect bills.

It is therefore necessary to develop more sophisticated reference points. The approach we adopted in the *Strategic Review of Charges 2002-06* was to use the concept of 'standard customers'. These are a set of representative 'typical customers' who are defined by aspects such as their consumption, connection size and rateable value. We can calculate the impact of tariff changes on the bills for each of these 'typical customers'. Customers can then match the service they receive with the standard customer who is most similar to them. This should allow them to understand the likely impact on their bills of changes in tariffs.

We believe that this is helpful because it allows us to explain the detailed year-on-year effects of tariff changes on a number of broadly representative standard customers. We therefore propose to continue using the standard customers approach for the *Strategic Review of Charges 2006-10*.

13.4 Impact of developments since the last Strategic Review of Charges on the standard customer model

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

As part of the work for the *Strategic Review of Charges 2006-10*, we propose to revise our list of standard customers to help ensure that we achieve as wide a representation as possible.

In the period since the last Review was completed, our understanding of the impact of tariff changes on customers has improved. The key changes which impact on our set of standard customers are as follows:

- We receive a larger number of complaints about bills, providing us with more information;
- Scottish Water submits more detailed customer information; and

- Trade effluent has become a core function of Scottish Water.

These changes are discussed below.

13.4.1 Information from complaints

One of our statutory duties is to investigate complaints from customers that Scottish Water has been unable to resolve itself. Following the change in Scottish Water's tariffs in April 2003, we received a large number of complaints from customers, particularly from small businesses, about the impact of the changes on their bills. One of the most common complaints that we received at the time was that the impact of the changes in tariffs had not been sufficiently well signalled.

While our set of standard customers did include those with low consumption and a meter, it did not include unmetered customers who pay according to their rateable value. We therefore propose to add standard customers of this type to our set.

13.4.2 More detailed information about customers

At the time of the *Strategic Review of Charges 2002-06* we asked each of the three former water authorities to provide detailed information about the make-up of their customer base². However, because of limitations on the information that was available at that time, the authorities were unable to provide as complete a response as we would have liked. The information in the *Strategic Review of Charges 2002-06* was therefore based on a subset of customers that, to the best of our knowledge, was representative of the total customer base.

In May 2003, Scottish Water submitted detailed information about its customer base for the first time. Since then, we have been analysing the effects of tariff changes on the different types of customer represented in Scottish Water's submission. As a result, we now have a much clearer understanding of the full range of customers.

² WIC1 followed by WIC22 after the Review, see Appendix 2 of Volume 1: *Our work in regulating the Scottish water industry: Setting out a clear framework for the Strategic Review of Charges 2006-10*.

We therefore propose to add to the list of standard customers used in the last Strategic Review some additional customer types that are more representative of Scottish Water's actual customer base.

13.4.3 Trade effluent becoming a core function

The draft *Water Services. (Scotland) Bill*, which was introduced in June 2004, includes a provision that trade effluent should be made subject to regulation by our office for the first time. This is discussed in more detail in our document, *Our work in regulating the Scottish water industry: Background to and framework for the Strategic Review of Charges 2006-10*³.

We will therefore be carrying out detailed analysis of the effects of changes in trade effluent charges on customers. Trade effluent charging is particularly complicated. It is calculated using the Mogden formula, which contains a number of elements. Tariffs for each of these elements could change and could have a material impact on customers' bills.

We therefore propose to add representative trade effluent customers to our set of standard customers.

13.5 Proposed set of standard customers for the Strategic Review of Charges 2006-10

In the previous section we discussed why we are proposing to modify the list of standard customers. We do not propose to remove any of the standard customers that we used in the last Strategic Review. We believe that it is important to continue to provide information for these standard customers. This will allow more straightforward comparisons of the impact of current tariff changes with those that take place during the 2002-06 regulatory period.

However, from our analysis of the customer base information provided by Scottish Water, it has become clear that some of the descriptions applied to the standard customers in the last Review were over simplified. In one sense this is unimportant because

what matters is the change in bills that standard customers are illustrating. However, we propose to update the descriptions of the standard customers to ensure that they are not misleading.

Table 13.3 shows the standard customer descriptions that we used in the *Strategic Review of Charges 2002-06*. It also shows the proposed new name for these customers for the *Strategic Review of Charges 2006-10*.

Table 13.3: Standard customers used at the 2002-06 Review

Name in 2002-06 Review	Proposed name for 2006-10	Water		Sewerage		
		Meters	Volume (m ³)	Meters	Volume (m ³)	RV
Newsagent	High Street newsagent	1 x 20 mm	30	1 x 20 mm	28.5	£5,000
Garage	Garage	1 x 20 mm	100	1 x 20 mm	95	£10,000
Restaurant	Large restaurant	1 x 20 mm	500	1 x 20 mm	475	£100,000
Commercial	Large office	1 x 25 mm	900	1 x 25 mm	855	£750,000
Retail	Retail group	2 x 20 mm 20 x 25 mm 1 x 35 mm	4,500	2 x 20 mm 20 x 25 mm 1 x 35 mm	4,275	£1,700,000
Food manufacturer 1	Food manufacturer 1	2 x 25 mm 1 x 80 mm	50,000	2 x 25 mm 1 x 80 mm	47,500	£100,000
Food manufacturer 2	Food manufacturer 2	2 x 25 mm 1 x 50 mm 1 x 100 mm	100,000	2 x 25 mm 1 x 50 mm 1 x 100 mm	95,000	£260,000
Manufacturing	Large manufacturer /pharmaceuticals	1 x 150 mm	175,000	1 x 150 mm	166,250	£1,225,000
Brewers	Brewers	2 x 25 mm 1 x 100 mm 1 x 150 mm	600,000	2 x 25 mm 1 x 100 mm 1 x 150 mm	150,000	£500,000

We outline below the standard customers that we propose to add to our existing list of standard customers.

13.5.1 Additional metered customers

Our review of the customer information provided by Scottish Water suggests that metered customers are reasonably well represented within the existing standard customers. We therefore propose to add only four additional standard customers.

³ Section 2 Chapter 13 of the document discusses the changes to trade effluent charging in detail.

The proposed additions, which are outlined in Table 13.4, are:

- a customer who would qualify for a discount under Scottish Water's 20mm tariff;
- a medium-sized hotel;
- a High School; and
- a Band H⁴ domestic property with a meter.

Table 13.4: Proposed additional standard metered customers

Name	Water		Sewerage		
	Meters	Volume (m ³)	Meters	Volume (m ³)	Rateable value
Warehouse	1 x 20mm	10	1 x 20mm	9	£500
Large house	1 x 20mm	110	1 x 20mm	104	Band H
High School	1 x 25mm	2,000	1 x 25mm	1,900	£18,000
Hotel	1 x 50mm	15,000	1 x 50mm	14,250	£75,000

We believe that these additions should ensure that there are sufficient reference points for metered customers.

13.5.2 Standard unmeasured non-domestic customers

Approximately 55% of non-domestic customers do not have a water meter. These customers were not included in the standard customers used in the *Strategic Review of Charges 2002-06*. In general, we would expect these customers to have a lower consumption and lower bills than metered customers. This is because it is likely that Scottish Water will have ensured that customers who use a lot of water have a meter. Moreover, we would expect customers to opt for a meter if they had a high rateable value relative to their consumption.

However, it is not always practicable to install a meter, for example when customers share a supply pipe. This may mean that some customers with relatively large rateable values pay on an unmetered basis. Our analysis of the customer information provided by Scottish Water suggests that there is some evidence of this.

We therefore propose to include four unmeasured non-domestic customers in our list of standard customers, as shown in Table 13.5.

Table 13.5: Proposed additional standard unmeasured non-domestic customers

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

13.5.3 Standard trade effluent customers

It is more difficult to define standard trade effluent customers than it is to define water customers or customers who discharge standard-strength sewage. There are just over 2,000 customers in Scotland who have trade effluent agreements. Scottish Water uses 31 different categories to group these customers and their size can range from a small garage to a large petrochemical firm.

Because of this, the aim in developing standard customers for trade effluent is not to represent all trade effluent customers. However, we hope to indicate the types of industries that have trade effluent agreements, and to show different varieties of strength and volume and different sizes of customer.

In developing this list of customers we have also considered whether the customers we have chosen would demonstrate the effect of changes in the components within the Mogden formula. Scottish Water's use of the Mogden formula is discussed in detail in Chapter 13 of Volume 2 of our series of methodology publications.

⁴ Around 800 household customers have meters. These customers do not pay for surface water drainage on the basis of a rateable value, but on the basis of the Council Tax band of their property.

The six additional standard customers that we propose are shown in Table 13.6.

Table 13.6: Proposed additional standard trade effluent customers

Standard customer name	Volume		Load		Average Strengths	
	Annual	Daily	Total suspended solids	Biological oxygen demand	Total suspended solids	Settled chemical oxygen demand
Bakery	200	0.55	0.5	0.75	575	1600
Clothing manufacturer	12000	32.9	1	1	20	300
Abattoir	90000	246.6	150	250	600	1500
Electronics Business	550000	1507	15	50	10	75
Printers	10000	27.4	5	40	100	2500
Distillery	150000	411.0	7	55	15	200

In summary, we hope that the changes and additions we propose to make to the set of standard customers will improve the reference points available to customers. This should ensure that the impact of tariff changes on customers' bills are more transparent.

13.6 The link between standard customers and tariff baskets

In the previous chapter we outlined our proposals to introduce 'tariff baskets' in Scotland. This proposal aims at bringing the Scottish water industry into line with other regulators in the UK. It is also part of the changes associated with the proposed use of price limits, rather than revenue caps, in the *Strategic Review of Charges 2006-10*. It provides a mechanism by which customers can see a more direct link between economic regulation of the industry and the bills they pay.

In assessing Scottish Water's charges scheme using tariff baskets, we will consider the following two questions:

- Is the weighted average price increase equal to, or less than, that allowed in the Strategic Review of Charges?
- Are the proposed charges discriminating against any individual customer, or group of customers?

If we are satisfied that the answer to the first question is "yes" and that the answer to the second question is "no" then we will be likely to approve the scheme of charges.

In our earlier three customer example we showed that there can potentially be large increases and/or decreases for certain types of customer within an average price increase. These may be a result of what is termed 'rebalancing', which is effectively reallocating costs between customer groups so that one group pays more and another less. Rebalancing can be justified where, for example, improved information about costs has shown that the new tariffs are more cost reflective than the old ones. It is, however, important that the customers affected can understand the changes and the impacts they will have on their bills.

For this reason we will continue to use standard customers to signal the effects of tariff changes to customers, alongside the proposed introduction of tariff baskets.

13.7 Key messages for customers and consultation questions

We use standard customers as a way to demonstrate the effects that tariff changes have on the bills customers pay. The technique is simple and transparent and allows customers to select a standard customer that has a similar service profile to their own.

To improve the representation of different customer groups, we propose to add an additional 14 customers and to rename existing customers for the *Strategic Review of Charges 2006-10*.

13.8 Consultation questions

1. We would like to hear your views on the proposed changes to the standard customers used in the *Strategic Review of Charges 2002-06*. Do you feel that our proposals will make it easier to identify the customer group represented? Are there any other changes you would like to see being made?

2. We would like to hear your views on the proposed additions and changes to the standard customers, as detailed above. Do you consider that we have achieved broad representation of the customer types? Are there any other customer types that we should add to the lists?
3. Are there any other customer types that are not properly represented in the revised list?

Section 3: Chapter 14

Method for setting retail and wholesale prices

14.1 Introduction

In previous chapters we described how we propose to set retail prices for customers in the *Strategic Review of Charges 2006-10*.

Proposals in the *Water Services (Scotland) Bill* that are currently under scrutiny by Parliament would establish a framework for competition in the Scottish water industry. This framework would allow new entrants to obtain a licence to provide retail services to non-domestic customers. These new entrants would be retail specialists who would buy water and sewerage services wholesale from Scottish Water. In light of the proposals set out in the *Water Services (Scotland) Bill*, we need to consider how we would determine appropriate wholesale prices for such retailers.

This chapter begins by explaining the implications of the *Water Services (Scotland) Bill* and how these changes affect our price review. We then explain what is meant by the terms wholesale and retail. We look at which pricing structures would best ensure that customers pay for the service they receive, and examine the potential advantages and disadvantages of alternative structures. We also review the approaches and views of other regulators, and conclude by setting out our proposals for consultation.

14.2 Background

14.2.1 Legislative developments

The possibility of competition in public networks has increased since 2000, when the *Competition Act 1998* came into force. Although the *Competition Act 1998* was to some extent the starting point for introducing competition into the water sector, a degree of competition did already exist, through 'off-network' deals and some small-scale brokerage (retail)¹ deals.

The *Competition Act 1998* prohibits agreements, business practices and conduct that damage competition in the UK. More specifically, the Act prohibits:

- anti-competitive agreements (known as the Chapter I prohibition); and
- abuse of a dominant market position (known as the Chapter II prohibition).

It is not clear at this stage what the impacts of the *Competition Act 1998* might be on the water industry. As a result, there is a risk that the framework for competition in the public water industry in Scotland could be determined by the Courts. The interpretation of the Act by the Courts may not be consistent with the broader policy objectives of the Scottish Executive for the water industry in Scotland. At the same time, the Scottish Executive has also recognised that, subject to safeguards which ensure broader policy objectives can be delivered, it may be beneficial to introduce some competition into the water and sewerage industry in Scotland.

The *Water Services etc (Scotland) Bill* was introduced in June 2004. It contains the following provisions:

- It prohibits common carriage²;
- Scottish Water will be required to establish a retail subsidiary – Scottish Water Retail (SWR). In other words, Scottish Water will be required to operate the two activities – wholesale and retail – as separate functions. Operating these two activities separately is likely to mean that there will be greater clarity in the allocation of costs;
- Retailers, including SWR, will be licensed. This means that they can be held accountable for their performance;

¹ Brokerage : a deal by which water is sold to customers by a third party, who is not responsible for anything other than the final supply of water to a customer's premises . Off-network : a privately owned water supply or waste water treatment and disposal system that reduces or eliminates the need for a connection to the public water and waste watersystem.

² Common carriage : common carriage enables a new entrant to abstract and treat water and arrange for this to be entered into Scottish Water's distribution system. The new entrant pays a fee for this "common-carriage", essentially the use of an "essential facility" (an asset that cannot reasonably be replicated). The new entrant's customer does not necessarily consume the new entrant's water.

- Retail competition will be restricted to non-domestic customers; and
- The market will cover both water and wastewater services.

We believe that the framework proposed in the *Water Services etc (Scotland) Bill* will benefit all customers. It will also reduce the likelihood of legal challenge under the *Competition Act 1998*. Such a challenge could, if successful, disproportionately affect vulnerable domestic customers. A successful challenge could place restrictions on:

- harmonised charges;
- cross-subsidy to assist vulnerable customers; and
- government lending to Scottish Water.

The required separation of Scottish Water's wholesale and retail activities and the improved cost allocation that is likely to result, should also benefit all customers.

14.2.2 Setting wholesale prices

In the first full Strategic Review of Charges, we advised Scottish Ministers on the revenue caps that should be applied to Scottish Water in the period 2002-06. The Review also contained estimates of the prices that customers were likely to face if the revenue caps and other recommendations were accepted. These were retail prices – i.e. prices to end users.

For this second Strategic Review of Charges, Scottish Ministers have asked that we set both wholesale and retail prices. We propose to set limits on both wholesale and retail prices in our tariff baskets (see Chapter 12).

It will be important to set an appropriate wholesale price. If it is set too low, new entrants would benefit, but the core water and sewerage treatment and network business would have insufficient revenue. This could adversely impact on the delivery of investment or could result in Scottish Water appealing to the Competition Commission to review the price determination.

If the wholesale price is set too high, there is a risk that new entrants would seek to challenge this price under the *Competition Act 1998*.

14.3 Defining the retail and wholesale activities

Retail is the selling of goods or services directly to consumers; it is usually in small quantities and the goods or services are not for resale. Wholesale is the selling of goods or services to merchants, usually in large quantities and for resale to consumers.

Retailers specialise in knowing and understanding customers: what they want to buy and how they would like it to be provided. They benefit from economies of scale by buying the product wholesale, and from economies of scope by using their capacity to sell the products and services of different suppliers to their customers.

Scottish Water currently handles all aspects of the water and sewerage service. Its activities can be represented in a value chain.

Figure 14.1: Scottish Water's value chain



Water abstraction is the collection or extraction of natural water, which can be either surface water such as lochs, streams and rivers, or groundwater, which is stored in naturally formed underground reservoirs called aquifers.

Water treatment includes all of the physical and chemical processes that make the water safe to drink. The level of treatment depends on the quality of the input water.

Treated water distribution involves transporting clean water from the treatment plant to customers, using a network of pipes and pumps called the distribution system. Distribution systems are local, or at best regional, which means that customers can normally only be served by one or two treatment plants.

Retail of treated water and sewage collection involves the direct, customer-facing activity in the supply of the service.

Collection of wastewater includes gathering all of the wastewater produced by households and non-households, together with rainwater from roads, footpaths and roofs (all known as sewage) and transporting it to a wastewater treatment works.

Treatment of wastewater includes all of the processes required to remove the non-water from wastewater and to clean the water so that it can safely be returned to the environment. Two products come out of a water treatment works: treated effluent, which is the treated wastewater, and sludge, which are the settled solids that came with the wastewater.

Disposal of treated effluent is the discharge of the treated wastewater into a river, stream or the sea. The discharge of treated effluent is regulated by law and is monitored and controlled by the Scottish Environment Protection Agency.

Sludge can be disposed into landfills or it can be used as fertilizer for agriculture or forestry.

The proposed framework would allow new entrants to undertake only a single activity in the value chain, namely the retail of treated water and sewage collection.

14.3.1 Scottish Water's wholesale activities

We need to define what the wholesale activities are in order to assess the appropriate level of costs that should be recovered from all retailers.

We believe that Scottish Water's wholesale activities include all of the operational activities that do not involve interaction with the end customer. Our initial view is that retail activities would include all matters relating to:

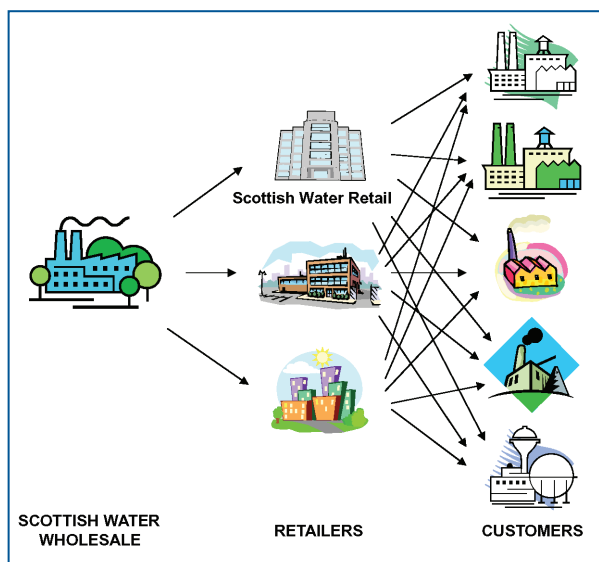
- retail pricing and tariffs;
- the billing process;

- collection of charges;
- debt follow up and debt management;
- meter reading, customer meter operations and ownership;
- call and correspondence handling;
- responses to customer enquiries, complaints or requests for information;
- key account management;
- liaison with the wholesaler to deal with customer issues; and
- marketing.

The Bill would require Scottish Water to establish a retail subsidiary. Scottish Water would be required to treat that retail subsidiary no differently to any potential new entrant.

Scottish Water would therefore become the wholesaler of water and sewerage services to its retail subsidiary and to any new entrants, with any new entrants becoming new retailers of these services to the end customers. The retailers would have to pay the wholesaler for the services provided, irrespective of whether or not they are paid by the end customers. This would mean that the costs of bad debt would therefore be transferred to the retailer.

We would expect that new entrants, as focused, specialist retailers, could improve the level of service offered to customers. For example, they could offer customers multiple payment alternatives (in method of payment and frequency), could combine the bills of various locations into one single bill (for multi-site customers), or could offer advice about how to reduce consumption. Further opportunities could exist if the retailer were already providing the customer with another utility service, as they would benefit from economies of scope, and could offer their customers a single bill that covers a number of utility services.

Figure 14.2: Retail competition

14.4 What we will consider when we set wholesale prices

In Volume 2 of our methodology, we explained that if the *Water Services (Scotland) Bill 2004* receives Royal Assent we will have responsibility for regulating wholesale charges. The way that Scottish Water's wholesale charges are set may have implications for the future of the Scottish water industry. Our choice of approach could have an impact on:

- whether competition develops if Scottish Water's wholesale and retail businesses are separated and competitors are allowed into the non-domestic retail market; and
- if competition does develop, the way in which it develops, for example, whether it focuses on a few large customers or includes more of the non-domestic customer base.

When we choose an approach, therefore, we must take account of the possible impact of that choice on customers. In order to ensure that customers' interests are best served, we propose to use the following criteria to assess different approaches.

14.4.1 Our proposed criteria are outlined below:

First, we believe that it is most important that the approach we use for setting wholesale charges must be theoretically sound. This includes the requirement that the approach should be consistent with the rules of competition law. From the point of view of customers, potential entrants and Scottish Water, this is a valuable constraint on the choices that we can make. It means that our approach to setting wholesale charges cannot be arbitrary, but instead must be defensible in principle and made through a rational process. The constraint that our approach must be defensible will be enforced through the right of retailers and Scottish Water to appeal to the Office of Fair Trading and the Competition Commission if they disagree with the level of wholesale charges. In addition, as explained in Volume 2, we can be subjected to judicial review if the process by which wholesale charges are set does not appear rational.

Second, the approach that we use must be practical. Setting wholesale charges must be based on a robust allocation of costs. Whatever approach we choose will have to be applied in practice in order to produce the wholesale charge available to potential new entrants to the retail market. An approach that is good in theory but that is also impractical will not benefit customers if it results in charges being set either too high or too low. It is important that both the wholesaler and new entrants are prepared to accept the wholesale charge.

Third, the approach that we use must be consistent with the Scottish Executive's policy objectives, as set out in its consultation *'Paying for water services 2006-10'* and the *Water Services (Scotland) Bill 2004*. The approach used for setting wholesale charges should result in prices that:

- allow Scottish Water wholesale to recover efficiently incurred costs;
- are consistent with the protection of public health and the environment; and
- are consistent with providing support to disadvantaged customers, which Ministers will determine.

Fourth, the approach that we use must be sufficiently flexible so that it can be developed to take account of changing circumstances. As competition develops, it is likely that the industry’s understanding of which activities belong in the retail businesses, and what the costs of those activities are, will evolve. It should be possible to adapt the approach to take account of these changes.

14.4.2 Possible approaches to setting wholesale prices

Under the Scottish Executive’s proposals, Scottish Water will still be responsible for delivering water to the customer’s premises and the removal of wastewater for treatment and disposal. The assets used to do this can be referred to as ‘essential facilities’ because they are essential to the provision of the retail services and cannot reasonably be replicated. The wholesale charge is the charge that Scottish Water will levy for providing retailers with the essential monopoly services.

There are four approaches to setting wholesale charges that we intend to consider:

- the efficient component pricing rule;
- the long run marginal cost approach;
- accounting approaches;
- comparator approaches.

During the Review we will analyse in detail each of these approaches, and any others that might be identified. We will take account of the factors noted above and any other considerations raised by respondents to this consultation. In the section below we outline the four approaches and make some initial observations on their strengths and weaknesses.

14.4.3 The efficient component pricing rule

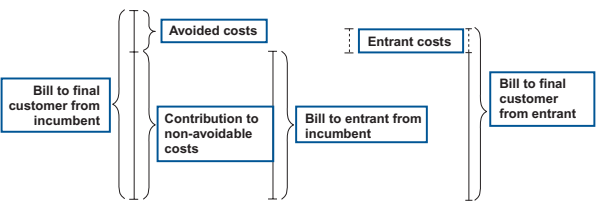
The ‘efficient component pricing rule’ (ECPR) was developed by economists during the 1980s as a method of setting charges for access to an essential facility. The rule was designed for situations where the incumbent

provides not only the monopolistic network elements of the service but also carries out the potentially competitive retail activities. The objective of the rule is to ensure that entry into the potentially competitive part of the market is efficient and so benefits customers.

The ECPR applies the concept of ‘avoidable costs’. An avoidable cost is the cost that a company no longer has to bear if it ceases to supply a customer. For example, suppose that a business customer decided that they no longer wished to receive water and sewerage services from Scottish Water. Scottish Water would no longer have to read the meter or produce a bill for that customer. The costs of those activities (for example, the cost of the time spent reading the meter and calculating the bill, the cost of the paper that the bill was printed on, and the cost of the postage) are the avoidable costs associated with supplying that particular customer.

Under the ECPR, access prices are set at a level calculated as the incumbent’s retail price minus the incumbent’s avoidable costs. The price faced by the customer is this access charge plus the costs of the entrant. This is illustrated in the figure below.

Figure 14.3: New entrants and ECPR



It can be shown mathematically that under the ECPR the entrant will only enter the market if his costs are lower than those of the incumbent. As Figure 14.3 shows, this means that whenever there is entry into the market the overall level of costs will fall. Economists refer to this as an improvement in productive efficiency.

The logic of the ECPR is widely accepted and yet the approach is a highly controversial one. An important reason for this is that the ECPR does not provide the incumbent with any incentive to improve the efficiency of the network. However inefficient the network operations are, the incumbent will recover their costs through the

access charge. Moreover, there is no incentive for the incumbent to examine the structure of his costs in order to ensure that they are consistent with changes in the number of retail customers that it serves. Inefficiency in the incumbent's retail function will always be paid for by new entrants and ultimately all customers.

Critics of the ECPR approach would also argue that it does not promote 'dynamic efficiency' in the wholesale business, that is, the network operator is not encouraged to improve its efficiency over time. Supporters of the approach, however, would claim that it is the job of the regulator to ensure that the monopoly part of the industry is efficiently run. They stress the fact that the ECPR promotes efficiency in the competitive part of the market, that is, the productive efficiency referred to above.

We are not convinced by this assertion since ECPR would, as a consequence, only be duplicating a supposed benefit of competition. If an inefficient company entered any competitive market, other more efficient companies, including the incumbent company, should either force it to become more efficient or to exit the market.

Applying the ECPR in practice also presents a number of problems. In theory, under the ECPR the incumbent should be indifferent between supplying the customer himself and granting access to an entrant who then supplies the customer. This is because the incumbent recovers his 'unavoidable cost' and an element of profit happens whatever. He recovers these costs either directly from the customer or indirectly via the access charge. However, in practice incumbents do not like to lose revenue. In the short term they will tend to misrepresent the balance between their avoidable and unavoidable costs in order to ensure that the access charge is as high as possible. This will discourage entry. The incumbent may actually distort the balance of their costs in favour of fixed costs. This would mean that if an entrant were to take a customer the incumbent would see very little difference in its revenues. Setting prices on this basis would make it likely that a new entrant would challenge the wholesale price.

Even if the incumbent were committed to providing all of the information that it had available on avoidable costs, the ECPR would be difficult to apply in practice. This is because the avoidable cost for one customer could be very different from the avoidable cost for another customer. For example, when the incumbent loses the first customer this may have no impact on the scale of billing operations. However, by the time the incumbent loses the hundredth customer there may be an opportunity to scale down billing operations. Avoidable costs will therefore change over time. Similarly, they may vary depending on where a customer is located.

In principle these differences should be reflected in the access charge if it is estimated on the basis of the ECPR. In practice, it is almost impossible for the incumbent to be able to provide the detailed information required to produce such an estimate.

A more feasible approach is to ask the incumbent to estimate the avoidable costs associated with losing chunks of the retail market. For example, the incumbent could be asked what costs would be avoided if they lost 20% or 50% of the market. Even this approach imposes a considerable information requirement on the incumbent. Much of that information is not available from standard regulatory accounts but would need to be produced specifically for the purpose by the incumbent. From the point of view of the regulator this makes the task of validating the information particularly difficult.

There is one further reason why our initial analysis would suggest that the use of ECPR would not be appropriate in setting wholesale prices in Scotland. The proposed *Water Services (Scotland) Bill* will require Scottish Water to establish a retail subsidiary. Scottish Water would have to charge the same wholesale price to both its retail subsidiary and to new entrants.

ECPR was developed to set an access price when the incumbent would provide retail services itself – not to set a wholesale price for an arm's length subsidiary company. The separation of Scottish Water's retail arm is important because otherwise there would be a risk of challenge from new entrants that the retail business (with access to cheap Government borrowing) has an unfair advantage.

14.4.4 The long run marginal cost approach

A second approach to access pricing would be to set the access charge at the 'long run marginal cost' (LRMC) of providing access to the network. The concept of a long run marginal cost can be considered in two parts:

- The 'marginal cost' is the change in cost that takes place when a firm increases its output by a small amount³.
- The 'long run' is the period of time that is sufficiently long to allow a company to make a capital investment in order to increase the volume of output that it is capable of producing. If Scottish Water faced a sudden increase in demand, in the short run it would have to manage with the assets that it has in place. This might mean taking more water out of a reservoir than it would ordinarily extract or running a treatment works for longer hours than usual. In the long run, Scottish Water could respond to the change in demand by, for example, building new reservoirs or treatment works.

LRMC therefore refers to the change in a firm's cost that happens when output increases by a small amount. It takes account of the possibility that the firm can expand its productive capacity through capital investment.

The LRMC is a measure of those costs that could arise in the future if demand were to change. In other words, LRMC is a forward-looking measure of costs. If prices are set at LRMC they provide a pricing signal of the cost consequences of additional demand. Proponents of LRMC stress that this is an efficient approach to pricing. Users will only demand the product or service if the value that they place on it matches the cost of providing it. This argument applies both to the provision of network services and the provision of the final product to customers.

The importance of LRMC for pricing in the water industry has been emphasised by Ofwat in a series of publications. MD123, *'Water pricing: the importance of long run marginal cost'* (February 1997) set out the

Director's views on the importance of LRMC, particularly with respect to the pricing of bulk supplies. Following MD123, companies have been asked to provide Ofwat with estimates of LRMC on various occasions, for example, as part of their supply/demand balance submissions in 1998 and their business plans in 1999. In 1999, Ofwat announced that it would be publishing companies' estimates of LRMC in the 1999-2000 *'Report on tariff structure and charges'*.

Ofwat argued that the quality of LRMC estimates would be improved by wider access both to the methodologies adopted and to the results.

Ofwat has also provided guidance on how LRMC should be estimated. In the reporting guidance for *'Periodic Review Information Requirement E'*, published in 1998, Ofwat suggested that LRMC could be derived from the cost of a future resource scheme. In MD159 *'LRMC and the regulatory framework'* (11 February 2000) Ofwat referred to more complex approaches advocated by some economists. Then, in MD170 *'The role of long run marginal costs in the provision and regulation of water services'* Ofwat provided a comprehensive description of how to estimate LRMC. Ofwat's favoured approach in MD170 took account of all of the new costs that a company would expect to incur over a future planning period of 30 years.

There are a number of potential problems that might arise if an LRMC approach were chosen to set wholesale charges in Scotland. These are discussed below.

First, the investment planning process in Scotland focuses on the periods defined by the Quality and Standards programmes. *Quality and Standards II* covers the current regulatory control period. In contrast, *Quality and Standards III* will extend beyond the end of the next regulatory control period to 2013. This has been designed to match the timetable for completing the requirements of the Water Framework Directive. Although *Quality and Standards III* will cover a longer period than both *Quality and Standards I* and *II*, it is considerably shorter than the period recommended by

³ In theory, the change in output could be a very small increase or a very small decrease, although generally economists use the term in the case of an increase in output by 'one unit'.

Ofwat for the estimation of LRMC. It is unlikely that a reliable 30-year view of investment needs in Scotland could easily be produced. In the absence of such a 30-year view, we could not estimate the LRMC in a robust way, and there would be a significant risk of challenge.

Second, in some cases marginal cost pricing does not generate enough revenue for the incumbent to cover its costs. This could be the case if the estimated LRMC is a very low number; for example, if there is excess capacity on the network and only modest investment in capacity is planned. The incumbent could be faced with significant existing costs of financing and running the network, but the wholesale charge may not be sufficient to recover these costs. The investment that the Scottish Executive believes is required for quality, replacement and enhancement will have an impact on the LRMC but there remains a risk that setting prices on this basis could adversely impact on the wholesale operation.

Third, marginal cost pricing may fail to generate sufficient revenue because the estimate of LRMC excludes certain costs. For example, overhead costs that result from the assets and activities that provide a benefit to the entire business are not included. Typical overheads would include head office and IT systems costs. These would not be included in an LRMC estimate. We believe, therefore, that an access price based on LRMC may be excessively favourable to new entrants.

A solution to the revenue sufficiency problem would be to apply a mark-up to the LRMC-based charge. One approach to mark-ups is to apply a different mark-up to different customers according to the relative responsiveness of their demand to the price charged. This approach is known as 'Ramsey pricing'. According to Ramsey pricing, the less sensitive the customer's demand is to the price charged, the higher should be the mark-up. This raises problems of political acceptability, and practicality. In practice there is unlikely to be reliable information on the responsiveness of demand to price.

An alternative to the Ramsey approach would be to apply a uniform mark-up, designed to recover the incumbent's costs of providing network services. The

resulting price would be identical to the wholesale price calculated by the accounting approach.

14.4.5 The accounting approach

Under an accounting approach the wholesale charge would cover the accounting costs of the wholesale business. These accounting costs would cover:

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

There are two steps required to calculate an appropriate wholesale charge on an accounting basis:

- First, we must identify wholesale and retail activities. If this approach is adopted, the initial split between wholesale and retail will be the best approximation that can be made at the time. However, the incumbent, potential entrants and customers may have different ideas about which activities belong in retail and which belong in wholesale. As further information becomes available about the activities that retailers might undertake, it may be necessary to modify the initial split; and
- Second, we must identify where the costs of Scottish Water's retail and wholesale businesses are recorded in the accounts. Wholesale costs will then be allocated to the wholesale business, while retail costs will be allocated to the retail business. Many costs will appear in the accounts under heads that are recognisable as wholesale or retail activities. However, in other cases, where assets are shared between the wholesale and retail parts of the business, an allocation rule will be required in order to share the costs between the two parts of the business. If this approach is adopted, the initial allocation in the case of these costs will be based on the best information available at the time. As the industry gains greater understanding about how

shared assets and common activities contribute to the different parts of the business, the initial allocation of costs is likely to require modification. It is noteworthy that £264 million (some 6% of electricity distribution costs) was reallocated to 'retail' after the initial separation had been implemented.

In Chapter 6 we set out our proposals to introduce a regulatory accounting framework for Scottish Water. We explained that regulatory accounts should provide greater clarity and transparency in Scottish Water's costs. There are two elements to this. The first is the separation of the core and non-core activities in the accounts. The second is the separation of retail and wholesale activities. This second separation will identify costs that are directly attributable to the retail and wholesale businesses. It will also require Scottish Water to allocate joint costs to each of the separate parts of the business. At the current time, the companies south of the border have not agreed to provide Ofwat with this level of information about their retail costs.

The regulatory accounts could provide a solid and practical basis for estimating the wholesale charge for the draft determination [of price limits in 2005]. As the industry's knowledge and understanding develops, the regulatory accounting framework should provide the flexibility that is required to incorporate this into the wholesale charge. We would expect, therefore, that any estimate produced from the regulatory accounts for the final determination would incorporate refinements to the charge reported in the draft determination.

14.4.6 The comparator approach

We also propose to consider the experiences of other network utility industries that have wholesale and retail activities. In particular, we will examine the evidence from those industries where good information is available on wholesale and retail costs.

The energy industries in England and Wales provide useful comparators. The gas and electricity industries are comparable to the water industry in that they have

network elements where it is most efficient to have a single monopoly provider. They also have elements where competition is possible, but where competing businesses rely on the services of the networks in order to be able to provide services to their customers. In both the gas and electricity industries there has been structural separation between the vertical components of the businesses. The monopoly elements of the businesses, that is, transmission and distribution, have been separated from those elements that are subject to competition. In the electricity industry the competitive elements include generation and supply (retail). In the gas industry the competitive elements include gas exploration and production, gas shipping⁴, and supply (retail).

Structural separation of the energy industries has been reinforced by legal separation between different businesses. One 'group' may own both a supply business and a distribution business, but each of those businesses must be a legal entity in its own right, with an independent board of directors and an independent Managing Director. The different businesses also have their own separate accounts. Where two or more businesses are owned within a group structure, transfer pricing is used to account for shared costs, for example, if there is a common IT system.

We propose to review the balance between wholesale and retail costs in the gas and electricity sectors. However, while the energy industries are similar to the water industry in the sense that they include network elements, they are also different in many ways. They use different assets to provide services, and the reliability and safety considerations associated with the provision of those services take a different form. We believe that the balance of costs between retail and wholesale activities in energy cannot simply be read across to the water industry. Instead, the evidence that is available from the energy industries should be used as a check on the results obtained for the water industry by other methods. The split should be taken as broadly indicative, but should be viewed in the light of industry-specific factors.

⁴ 'Shipping' involves purchasing transmission capacity and arranging for the delivery of gas.

That said, it should be possible to make comparisons between energy and water for some activities that are common to both. For example:

- What does a gas retailer do that a water retailer does not?
- What are the costs of the gas retailer?
- Why should the water retailer's costs be different?

This will allow us to check the reasonableness of some of the elements that might make up a wholesale charge for Scottish Water.

14.5 Proposals for setting retail and wholesale prices

We have explained the alternative structures for pricing wholesale and retail services. We are interested to hear the views of stakeholders before we confirm our proposed approach. However, it is already clear that whichever approach we adopt, we will need to consider how it can be implemented so that:

- it is practical;
- benchmarking comparisons can be maintained with England and Wales;
- it does not disadvantage either Scottish Water or the new entrant; and
- it can accommodate changes in the division between retail and wholesale activities.

We discuss these issues briefly below, and outline our proposals for dealing with them.

14.5.1 Practical approach

We believe that the information to support the setting of the wholesale price must be readily available and be capable of detailed audit. It will be important not to create an additional regulatory burden on Scottish Water if this can reasonably be avoided.

14.5.2 Benchmarking comparisons

In forthcoming Volumes 4 and 5 of our methodology, we will explain our detailed proposals for benchmarking the performance of Scottish Water against water companies in England and Wales and against other utilities. Our benchmarking will form the basis of the efficiency targets that we set in the Strategic Review. As there is no separation of wholesale and retail activities in the water industry in England and Wales, companies do not report these costs separately. We believe, however, that there may be good reasons to set different efficiency targets for the wholesale and retail activities of Scottish Water. We will examine the available evidence from other sectors to determine whether or not separate targets would be justified.

Although regulatory accounting information that we collect from Scottish Water will need to be more detailed than that South of the border, we will have to ensure that we can continue to make like-for-like comparisons with the water companies. We therefore propose to ensure that the framework and definitions for reporting regulatory accounting information will allow full reconciliation to Ofwat's regulatory accounts, and hence to reliable benchmarking and targeting.

14.5.3 Even-handedness

One of the principal benefits of the introduction of the proposed framework for competition is that it reduces the likelihood of Scottish Water being challenged under the *Competition Act 1998*. We believe that it is important that the wholesale price allows both Scottish Water's wholesale and its retail businesses the opportunity to recover all of their reasonable and efficient costs. This would ensure that new entrants face a level playing field and, as such, minimise the risk of challenge that the framework is biased against them.

14.5.4 Changes in the division between retail and wholesale activities

Earlier in this chapter, we set out our initial views on which activities would constitute retail activities. The present consultation process will help us to reach a considered view. Ultimately, however, the views of new

entrants to the non-domestic retail market will need to be considered. It is likely that agreement on the precise definition of retail will need to be reached between Scottish Water, the new entrant(s) and other stakeholders. The outcome of such negotiations will not be known until after the final determination of prices.

We propose, therefore, that changes in the definition of retail that are agreed after the *Strategic Review of Charges 2006-10* will be made a 'notified item', under the proposals described in Chapter 11. These arrangements allow prices to be adjusted to accommodate material factors that are expected to impact on costs or revenues in a regulatory control period but where it is not possible to quantify their impact at the time prices are set.

14.6 Questions for consultation

1. Do respondents consider that the criteria that we propose to use in assessing different approaches to setting wholesale prices (ie that the approach should be theoretically sound, practical, consistent with Scottish Executive policy and flexible) are appropriate?
2. What are respondents' views on the ECPR, LRMC, accounting cost and comparator approaches to the setting of wholesale prices?
3. Do respondents agree that the split between wholesale and retail activities should be a notified item?

Section 3: Chapter 15

Connection charging regime

15.1 Introduction

In previous chapters we examined the methodology by which customer charges will be established in the forthcoming *Strategic Review of Charges 2006-10*. We have also discussed how these charges are allocated across the range of existing customers who are connected to the network.

Each year, around 24,000 new customers are added to both the water and wastewater networks. The connection of new customers adds costs; such as the cost of extending the network to reach the new properties and the costs of supplying additional water and wastewater services. In some cases, particularly where the capacity of the network is limited, these additional costs can be very high.

Throughout the utility industry, issues have arisen in relation to allocation of costs for new connections between existing and prospective customers. At one extreme, it is clearly unreasonable for someone wishing to connect a new house to the water supply network to pay the full cost of providing a new reservoir, simply because the existing reservoir is fully committed. At the other extreme, it is equally unreasonable for someone wishing to connect a development of houses in an area where the existing wastewater capacity is known to be highly constrained to expect existing customers to pay for a complete new wastewater system.

In Scotland, the mechanism for establishing how costs should be shared between existing and prospective customers is currently being redefined by the Scottish Executive through changes set out in the *Water Environment and Water Services (Scotland) Act 2003*. The outcome of this process will impact on customer charges in the period of the next Strategic Review.

In this chapter we look at how these connection costs are allocated between existing customers and new customers connecting to the network. We explain the current connection charging arrangements and provide our assessment of the likely impact of the proposed

changes. We also compare the situation in the water industry in Scotland with other utilities throughout Great Britain. It will be important that we are able to monitor the costs of new connections and the allocation of costs between new and existing customers.

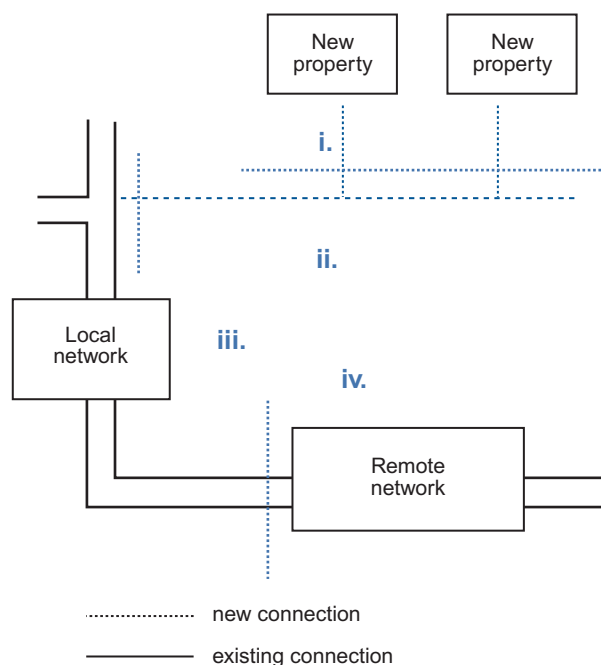
For both existing and new customers, the allocation of the costs associated with new connections needs to be both equitable and transparent. This requires a careful assessment of the impact of connection charging regimes, particularly where network capacity is limited. For the water industry in Scotland, the impact of limitations of the network capacity on new development confirms the need for robust connection charging arrangements to be in place.

15.2 The components of connection

Charging arrangements for new connections are relatively complex. To understand the allocation of costs between different parties, it is helpful to break down the process of connecting new developments to the water and wastewater network into the following four elements:

- i. laying a service pipe or drain to a property and making the connection to the water main or sewer (often termed 'service connections');
- ii. laying a section of new water main or sewer if not present nearby and connecting it to the existing network;
- iii. upgrading the existing local water/ wastewater network to accommodate the new connection, including, where necessary, upgrading local service reservoirs or local pumping stations; and
- iv. developing resources to accommodate the new connection, if water or wastewater services are already fully committed (including bulk mains, water treatment plants or sewage treatment works).

These four elements are illustrated in Figure 15.1.

Figure 15.1: Key components of a connection

The four elements of connection are common to most utilities, including water, electricity and gas. There is a degree of standardisation in the utility sector concerning the approach to funding the costs associated with each element.

The components of connection associated with parts (i) and (ii) are generally termed the 'shallow' reinforcement elements. As will be discussed in more detail later, these are almost always funded by the party seeking the connection (the 'connectee'). Part (iv) is termed the 'deep' reinforcement element. It is usually funded by all customers through the companies' capital investment programme. Part (iii), which represents the impact on the existing local water distribution/sewage connection system, falls between these two extremes. A range of approaches are used by utilities to assess the actual level of part (iii) costs.

The rules for calculating these costs will need to be clearly defined by Ministers or by the Water Industry Commission after guidance by Ministers. If the Commission is required to develop rules, we would propose to consult on our proposals.

A further consideration is that some parts of the work associated with establishing the new connection can be provided either by the utility (for example, Scottish Water) or by the connectee (for example, a developer), while other parts can only be carried out by the utility. The first is termed 'contestable' work; it usually involves work that is specific to the new connection rather than the existing network. The second is termed 'non-contestable'; it typically involves work on the existing network, particularly where there are public health or safety implications.

The extent to which connection work is 'contestable' has an impact on the process for setting charges for customers who connect to the network. The contestable elements are open to competition and, if the customer is unhappy with the price or delivery service being offered by the utility, an alternative provider can be sought. For the non-contestable elements, the utility is the sole provider of the service. Consequently, scrutiny of the charges is required to ensure costs are appropriate and properly allocated between customer groups. This will be an important function of this office.

15.3 The impact of connection charging policy

We have described how connection charging policy determines the allocation of network upgrade costs between the party seeking the connection and the existing customer base. If this allocation is not properly balanced, an inappropriate element of the cost burden of connecting new properties falls onto one party or the other, with potentially significant detrimental impacts for customers.

This is best illustrated by considering the extremes of connection charging:

- the connectee paying the full cost of the new connection (deep connection charging); and
- customers funding the entire cost of the connection through charges (shallow connection charging).

The advantages and disadvantages of these approaches are discussed over:

15.3.1 Deep connection charging

Attributing all costs associated with the connection to the party seeking the connection has the following key advantages:

- Existing customers are protected from paying towards the costs of work from which they will not benefit;
- It provides a strong financial signal to connectees to encourage them to locate in areas where capacity exists and to avoid parts of the network where capacity is limited. This encourages efficient use of assets. The nature of utility networks is such that spare capacity on the network will be greater at some points than others; and
- The costs of connection are transparent.

Deep connection charges has the following key disadvantages:

- In areas where the network is constrained, the cost of connecting new developments quickly becomes so high that it creates a barrier to new entrants. Elements of the utilities' networks, such as treatment plants and reservoirs, are high-cost items and it may not be reasonable to expect connectees to fund these in isolation;
- The costs of connection may impact directly on housing development and business expansion. This could conflict with both local and national government development plans for the area. For example, there may be impacts on social priorities such as affordable housing;
- The new connectee may end up funding indirect network improvements, such as improved security of supply, which benefit other customers;
- Deep connection charging could result in widely differing charges for new connectees depending on geographic location;

- Similarly, deep connection charging could be seen to discriminate between new customers and existing customers. The cost of connecting existing customers may have been covered by the tax-payer¹; and
- There is a potential 'free-rider' problem. The first connectee has to meet the costs of upgrading the network in an area, but subsequent connectees are likely to benefit from any new capacity released. This is a feature of utility networks where upgrades come in discrete block sizes rather than a continuum. The capacity released by an upgrade will almost always exceed the requirements of the new connectee. Allocating the 'spare' capacity, and deciding whether or not the first comer should receive a refund from subsequent connectees, is problematic.

15.3.2 Shallow connection charging

Spreading the entire connection costs across the existing customer base has the following key advantages:

- It facilitates the connection of new customers. All existing customers contribute a small amount to the work necessary to accommodate the new connection. The new connectee will, in turn, pick up a small element of the costs of connecting future customers;
- This approach promotes the network to be developed in areas that have been targeted for housing and/or business development;
- Indirect benefits from work on the network remote from the connection, such as improved water quality or better environmental performance, are funded by all customers, not just the connectee; and
- The issue of 'free-riders' is removed.

Shallow connection charging has the following key disadvantages:

¹ Existing customers pay, through their charges, for the maintenance and ultimate replacement of the network serving their properties. New customers would do the same, through time. This discussion relates to the original cost of installing the entire network serving the property.

- Locational signals are lost: customers end up paying potentially high connection costs even though there is excess network capacity in other areas; and
- There is a limit on the level of investment that can be provided for improving the network's capacity. Unlimited investment may result in significant excess capacity and much higher customer charges than would otherwise have been necessary.

Neither of these two extremes is desirable. In practice, a 'middle ground' is generally adopted. This requires those seeking a new connection to fund a reasonable proportion of the local costs. Customers generally meet the cost of network upgrades remote from the connection point. This regime has the following advantages:

- Connectees do not face barriers to entry through very high connection costs associated with remote network upgrades. These are funded through customer charges as part of the overall requirement for network investment. In particular, local housing and industrial development policies are facilitated;
- Some locational signals are retained, particularly for local reinforcement. This ensures that there is an incentive for the connectee to seek connection where local reinforcement costs are lowest; and
- The allocation of costs is more consistent with the allocation of benefits. Part (iii) and (iv) upgrades will provide some benefit to the existing customer base (for example, in security of supply).

In summary, the allocation of connection costs is critical to facilitating connections, ensuring efficient development of the network and allowing costs for both new and existing customers to be proportional to the benefits received.

In the next section we look at the current arrangements for connection charging in Scotland and illustrate how these arrangements exhibit some of the issues

associated with shallow connection charging. We then compare these arrangements with other utilities in Britain. Finally, we discuss the potential benefits for Scottish Water's customers of the current proposals to develop a connection charging regime in Scotland which is more consistent with standard utility practice.

15.4 Scottish Water's current connection charging policy

For the water and wastewater industry in Scotland, new connections to the network can be subdivided into two categories:

- New connections that are linked with the development of **new** houses, shops and industry; and
- First-time connections that arise when **existing** properties that have their own private arrangements for securing water (for example, a private water supply) or disposing of waste water (for example, a septic tank) seek connection to the public system. Such situations are found mainly in rural areas and tend to be driven by water quality and environmental concerns.

For domestic (or household) customers, current legislation² requires Scottish Water to provide a connection to the public network for either new or existing properties, where it is practical to do so at 'reasonable cost'. Clearly, the definition of reasonable cost is critical. For new household connections, Scottish Water currently interprets reasonable cost as being a maximum of £1,500 per property, split £1,000 for wastewater and £500 for water. In practice, reasonable cost contributions for new properties average around £1,000 per property.

For first-time household water connections, Scottish Water defines the reasonable cost threshold as £500. For first-time household wastewater connections, a sliding scale operates based on the Council Tax band of the property, ranging from £1,995 for a Band A house to £5,985 for a Band H.

² *The Water (Scotland) Act 1980, The Sewerage (Scotland) Act 1968, The Water (Scotland) Act 1980 and the Water Environment and Water Services (Scotland) Act 2003.*

In effect the reasonable cost contribution is funded by the existing customer base as a contribution towards the cost of connection. While the requirement for a reasonable cost provision for domestic properties is set out in statute, the process for establishing the level of the provision is not transparent and appears to have evolved through custom and practice. It could be seen as a contribution towards the cost of connection in recognition of the future income that will be derived from the new customer.

If the cost of connection exceeds reasonable cost the connectee could opt to pay the difference in order to benefit from a water and/or sewerage service. It is also possible that Scottish Water's investment programme may facilitate connection.

For non-domestic (industrial or commercial) customers there is no direct equivalent of the reasonable cost contribution. However, for waste water connections only, Scottish Water currently provides a connection allowance of £23,600 per hectare of land connected. Our understanding is that this arrangement is based on Scottish Water's legal obligation to collect sewage (as opposed to trade effluent) from land in its area. The figure assumes an equivalent house density of 23.6 houses per hectare and then ascribes the reasonable cost provision of £1,000 per 'equivalent house' to the land.

The existing arrangements can be more fully explained by looking at the allocation of costs for the various elements of the connection described in the model above (Figure 15.1).

Part (i) – Local connection

The local element of the connection is paid for by the connectee, usually via a standard charge or, for non-standard arrangements, an ad-hoc, cost-reflective charge. The standard charges varies from £180 (where the connectee carries out all excavation and reinstatement work) to £1,000 for a full installation across a road in tarmac.

For sewer connections, the connectee (or their contractor) has the option to carry out the work in full,

subject to Scottish Water's inspection and approval. This assessment carries a charge of £50. If Scottish Water performs the connection, the charge is the actual cost of the engineering work undertaken.

Part (ii) – New main or sewer required for development

It is the responsibility of the connectee to fund this part of the network upgrade work. For wastewater connections the work is typically carried out by the connectee and a reasonable cost payment is refunded by Scottish Water.

For wastewater connections, Scottish Water's reasonable cost contribution is up to £1,000. Where the actual cost of the work is less than £1,000, the actual cost is the amount refunded. For water connections, the contribution is up to £500.

For non-domestic properties, all costs for this element of the connection are generally paid by the connectee. However, in some cases a reasonable cost contribution is made by Scottish Water depending on the nature of the site being developed and how many developers are involved.

Part (iii) - Upgrading the existing local network, including service reservoirs and pumping stations

The allocation of costs for this element of work is dependent on whether or not the upgrade work is included in Scottish Water's investment plan for the current regulatory period. In effect, the connectee pays for any elements of the required upgrade work which are additional to what is already being funded (by existing customers) in the current regulatory period.

For domestic properties, an allowance of any remaining (after taking account of part (ii) costs) reasonable cost contribution is granted.

Part (iv) - Developing water resources or increasing wastewater treatment capacity

This 'deep' element of the connection is normally paid for by all customers through the funding provided for

network upgrades in Scottish Water's investment plan. However, where a particular upgrade does not appear in the current investment plan, the connectee may opt to pay for this element of the connection work to bring forward completion and thereby facilitate the connection.

Table 15.1 provides a summary of the existing connection charging arrangements.

Table 15.1: Summary of existing connection charging arrangements

Connection element	Payee				
	Domestic		Non-domestic		
			Water	Wastewater	
Local connection (i)	Connectee		Connectee	Connectee (customers pay for any 'domestic' element)	
New main/sewer required for development (ii)	Customers, up to 'reasonable cost'		Connectee (new mains)	Connectee, with a contribution from customers (£23,600 per hectare)	
Upgrading existing local distribution/sewerage network (iii)	Work required. Allowance for this growth already in investment programme:	Customers	Customers/connectee (no 'reasonable cost')	Work required. Allowance for this growth already in investment programme:	Customers
	Work required. Some allowance for this work under investment programme:	Connectee pays for any 'additionality'		Work required. Some allowance for this work under investment programme:	Connectee pays for any 'additionality'
	No allowance for work under investment programme:	Connectee, subject to any remaining 'reasonable cost' element		No allowance for work under investment programme:	Connectee, subject to any remaining contribution element
Developing resources, increasing sewage treatment works capacity (iv)	Customers (connectee may pay for 'additionality')		Customers (upgrading of water treatment works)	Customers (connectee may pay for 'additionality')	
Infrastructure charge	None		None	None	

In recent years, a number of issues have arisen in relation to Scottish Water's connection charging mechanism, including the following key concerns:

- The cost to customers of the 'reasonable cost' contribution. This element of the mechanism is a significant burden on customers: it is estimated that around £17 million is paid each year to developers through this contribution. This is equivalent to almost 2% of a customer's bill;
- The reasoning behind the reasonable cost contribution. In particular, it is not clear why customers, including the vulnerable, should fund the installation of water and wastewater services to new houses. This is not consistent with the approach taken in the electricity, gas and telephone industries; and
- The impact of the connection charging policy on new development. There has recently been significant publicity relating to the existence of 'development constraints' on the wastewater and, to a lesser extent, water networks. These are areas where insufficient network capacity exists to allow new houses or businesses to connect to the system. It is not clear that making a contribution to local connection costs is consistent with the limited investment available to increase overall capacity in the system. This contribution would appear to

increase demand that cannot realistically be met. Moreover, similar problems do not appear to exist to the same extent in other utility models where developers fund a larger proportion of the connection costs.

In response to concerns about the nature and scope of the reasonable cost contribution, the Scottish Parliament has brought forward, as part of the *Water Environment and Water Services (Scotland) Act 2003*, proposals aimed at redefining the 'reasonable cost' payment to connectees. These are discussed in more detail below.

15.5 Position in England and Wales

It is useful to review the approach to connection charging taken in the water industry south of the border. In the next section we broaden the debate further by examining the approach in other utilities.

As in Scotland, water and sewerage companies in England and Wales have a legal duty, under the *Water Industry Act 1991*, to make connections to their networks.

Generally, the *Water Industry Act 1991* allows companies to recover the costs associated with the elements of the connection defined as parts (i), (ii) and (iii) in our model (Figure 15.1). However, a number of rules apply in respect of the determination of these charges. Network upgrade costs are allocated in the same way for both domestic and non-domestic supply connections. There is no equivalent of the 'reasonable cost' contribution in Scotland for domestic customers. The costs relating to part (iv) are funded by existing customers as part of the companies' investment plans, as in Scotland.

The connectee is also required to pay an 'infrastructure charge' of approximately £245. This is regarded as a contribution towards the costs of meeting the growth in demand for the water and sewerage system. This charge is applied for both water and wastewater connections, ie a total of around £490 is charged per property for both services.

Current legislation in England and Wales provides for competition in the establishment of new connections. The companies generally allow customers, or their contractors, to make the physical connection to the existing sewer network themselves. This is termed 'self-lay'. The *Water Act 2003* gave Ofwat the power to determine disputes over water and sewerage connections.

It is useful to look at the arrangements in the water industry in England and Wales for each of the components of connection shown in Figure 15.1.

Part (i) Local connection: The connectee pays for the part (i) costs. The connectee or his contractor normally carries out this work. If the company provides the connection the arrangements are similar to Scotland, with a set of published standard charges. For large or unusual cases, the charge is based on the actual costs incurred.

Part (ii) (New main or sewer required for development) and Part (iii) (Upgrading existing local network, including service reservoirs and pumping stations): In general the connectee pays the costs reasonably incurred in carrying out this work. However, in establishing the charge, an allowance is made for the income that will be received from the water/sewerage charges that the newly connected properties will pay.

Connectees can either request the undertaker to carry out the work for the new connection (termed 'requisitioning') or, alternatively, a connectee can pay its own contractor to carry out any elements of the work which are deemed to be 'contestable' (as defined above). The water company assumes responsibility for, or 'adopts', the assets once installed.

Calculating the charge is a complex process; it is based on a calculation of the net present cost over 12 years. The annual payment from the connectee for the connections is spread over 12 years and is calculated as the difference between the annual cost of borrowing to fund the work (at a rate of interest approved by Ofwat) and the water/sewerage charges payable for the newly connected properties (which may vary year-on-year). In

practice, these payments are often commuted to a single payment, by mutual agreement between the company and the connectee. The ability to make this commuted payment has now been formalised so that connectees can opt either for a 'one-off' connection payment or for a 12-year variable charge.

Part (iv) (Developing water resources or increasing wastewater treatment capacity): As in Scotland, the water companies in England and Wales recover part (iv) costs from the customer base as a whole. The companies include any deep reinforcement required for growth in their investment plans.

15.5.1 The infrastructure charge

In England and Wales, the water companies can make an infrastructure or network charge for both domestic and non-domestic connections. This is in addition to the connection charge.

The infrastructure charge is targeted at the non-recoverable costs part (ii) and part (iii). It is expected to cover the cost of general background growth in demand that cannot be charged to a single applicant, such as 'infill'³ development. At the 2004 periodic review, the maximum infrastructure charge was set at £239 (in 2002-03 prices). This limit is index-linked. Companies can make an infrastructure charge for both the water connection and the wastewater connection.

Infrastructure charges are not, however, intended to cover part (iv) of the connection costs. Ofwat believes that these costs should be recovered from the broader customer base.

15.6. Approach in other utilities

Many of the issues associated with connection charging policy, and with the development of competition in

connections work, are very similar in the gas, electricity and water industries.

Connection charging practice in utilities is continuing to evolve, particularly in the electricity sector where connection charging regimes for lower voltage distribution networks are currently under review.

In general, regulators have tended to encourage a general move towards 'shallower' connection policies. This has been driven, in part, by the desire to introduce competition and thereby encourage new entrants. By spreading more of the connection costs onto the general customer base, funded through 'use-of-system' charges, the barrier to entry that may result from 'deeper' connection policies is avoided. However, there is a recognition in both gas and electricity connection charging regimes that fair allocation of costs between the connectee and existing customers is required.

a) Electricity distribution

For electricity distribution systems, connection charging currently differs for load and generation connections⁴.

In load connections, the connectee will generally pay for all network reinforcement associated with the voltage at which they are connecting (including the local connection)⁵.

A safeguard also exists to protect 'first-comers' who pay the up-front costs of relieving network constraints. Inevitably, network reinforcement is implemented in discrete portions and it is often the case that the network reinforcement required for one development has the capacity to service several more. Consequently, arrangements exist to reimburse the first-comer by charging an element of the connection cost to subsequent connectees. The network operator acts as the agent in this transaction.

³ Infill development is the use of small plots of land to build new houses, either around, or in the gardens of, existing houses. It has the effect of increasing the density of housing in an area and hence the load on utility services, without significantly extending the boundaries of the settlement.

⁴ Load connections take electricity off the network: for example, the electrical load of shops, businesses and houses. Generation connections put electricity onto the network from sources such as power stations.

⁵ The electrical network is split into different voltage levels. High voltages are used for transporting electricity between different load centres, low voltages provide supplies to businesses and homes. Network reinforcement costs for load connections are confined to the voltage at which the connection is being made.

Competition exists in connections within these areas. The network operator, in providing a connection quote, must clearly identify those engineering elements of the connection that are contestable (ie can be provided by others) and non-contestable (ie reserved for the network operator, mainly for reasons of safety).

b) Gas connections

A relatively shallow approach is used in gas connections. For new customers within 23 metres of the existing network, a standard charge is applied and the first ten metres of the connection (assuming it is in a public highway) are provided for free. For customers beyond 23 metres, all local connection work is chargeable. However, deeper reinforcement is not generally charged for single, or small numbers, of domestic properties.

For larger housing developments, and industrial connections, the local network is now almost always provided by the developer through competitive connection infrastructure providers (usually not Transco). A charge is then made by Transco for connection to the main gas network. This charge may include some elements of the deeper reinforcement (eg for pressure reduction valves). Transco provide a ten-year development statement which highlights to developers where gas supply is available and the timescales for network development. Developers have the option of paying themselves should they wish to accelerate network development.

15.7 Future connection charging arrangements in Scotland

In general, the arrangements for connection charging in the Scottish water industry are broadly similar to those used in England and by other utilities. There are, however, two important exceptions. These are the 'reasonable cost' contribution and the absence of an infrastructure charge.

Part 2 of the *Water Environment and Water Services (Scotland) Act 2003* provides for changes to be made to

the system for funding new connections to the water and wastewater infrastructure by amending the *Sewerage (Scotland) Act 1968* and the *Water (Scotland) Act 1980*. These changes include conferring regulation making powers on Ministers for various detailed provisions. This includes determining reasonable cost and setting construction standards and detailed conditions for connection agreements.

During the passage of the Bill through the Scottish Parliament, Ministers made it clear that the aim of the new regulations was to remove the existing reasonable cost contribution for connections. Subsequently, the Scottish Executive has released a consultation paper on the principles of charging for water and wastewater services⁶. The paper includes a section on funding expansion of the public networks. It discusses, and invites views on, the extent to which developers should fund new connections to the water and wastewater networks.

Our current understanding is that the Scottish Executive proposes to bring forward regulations under the *Water Environment and Water Services (Scotland) Act 2003* by the end of 2005. These regulations will revise the mechanism by which Scottish Water determines reasonable cost for both new development and first time provision. Consequently, these changes will have an impact on the period of the *Strategic Review of Charges 2006-10*.

The Scottish Executive is currently considering whether the introduction of an infrastructure charge is appropriate in Scotland. If set at the same level as south of the border, the infrastructure charge could raise just under £12 million. This would go some way to financing local network reinforcement work that cannot be attributed to specific development.

We believe that further work will be necessary to determine the extent of connectees' contribution to the part (iii) costs. In England and Wales, Ofwat has recently formalised the approach by which the charge for this element is off-set by an amount which reflects the future income from the connection. Under the previous

⁶ 'Paying for Water Services 2006-10', Scottish Executive consultation, July 2004.

revenue cap, there was no need to take specific account of future revenue from the connection. However, the proposed move to price cap regulation will require some account of future revenue from a new property to be taken into account.

As is currently the case, deep reinforcement work associated with part (iv) of the connection will continue to require funding from the investment programme. A key element of the work being carried out for *Quality and Standards III* is identifying the likely extent of investment requirements in this area. We also expect Scottish Water's investment plan submission for the Strategic Review of Charges properly to identify and cost investment requirements in this area. We will review Scottish Water's proposals to ensure that they provide value for money for customers.

It may be necessary to allow a mechanism, within the limits of the overall investment programme funding, for an identified level of funding in this category to be re-allocated to alternative schemes to take account of changing housing or industrial development priorities.

15.8 Assumptions for the Strategic Review of Charges 2006-10

For the *Strategic Review of Charges 2006-10*, we will seek guidance from Scottish Ministers about the assumptions we should make concerning the revenues and costs arising from new connections.

15.9 Summary

The cost of connecting new customers to the water and wastewater networks varies considerably depending on factors such as the size of the connection and the capacity of the existing network to service more demand.

Many of the issues associated with connection charging policy, and also the development of competition in connections work, are very similar in the gas, electricity and water industries. The current arrangements in the water industry in Scotland tend to pass more of the costs through to existing customers than is typically the case in these other utility sectors.

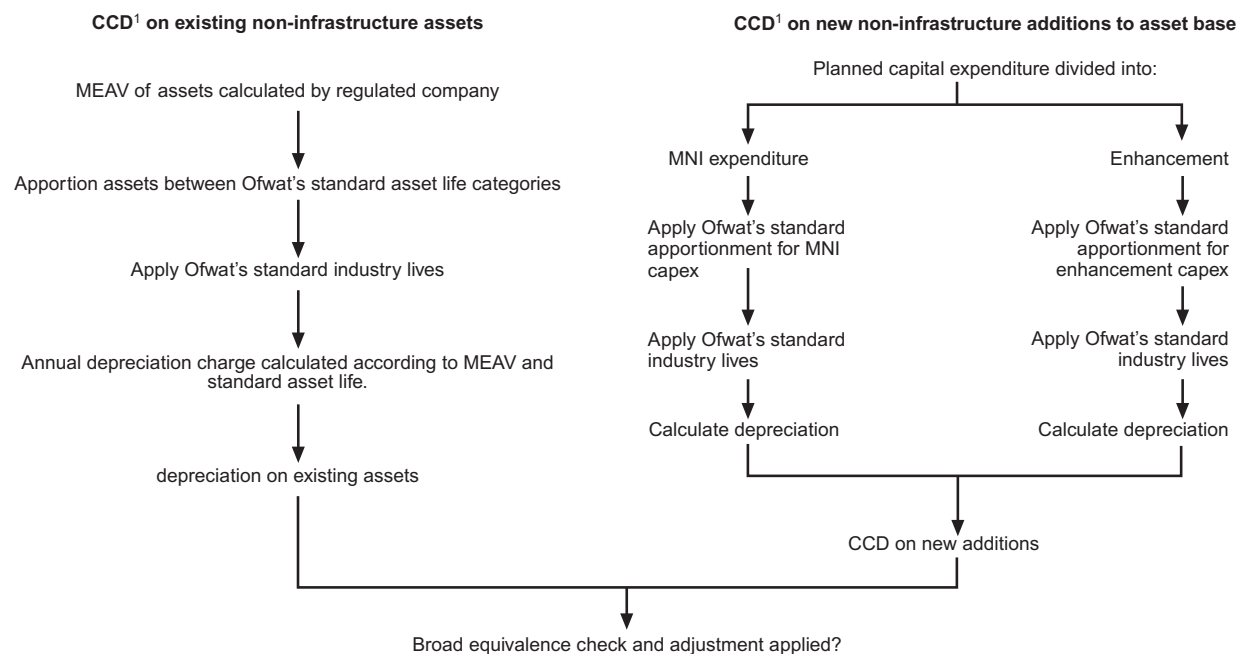
The mechanism for establishing the way costs are shared between existing and prospective customers is currently being redefined through changes set out in the *Water Environment and Water Services (Scotland) Act*. The outcome of this process will impact on customer charges in the period of the next *Strategic Review of Charges 2006-10*.

15.10 Question for consultation

1. Are there any lessons from England and Wales that you want to propose for application in Scotland?

Appendix 1:

Process for calculating CCD on non-infrastructure assets



¹ Current cost depreciation (see Chapter 3).

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Our work in regulating the Scottish water industry:
The scope for operating cost efficiency

volume **4**

**WATER INDUSTRY
COMMISSIONER
FOR SCOTLAND**

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Foreword

I am committed to the Better Regulation Task Force principles of transparency, accountability, consistency, proportionality and targeting. In the previous volume of our proposed methodology for the *Strategic Review of Charges 2006-10*, I set out a new approach to price setting. The use of a Regulatory Capital Value will facilitate comparison of the financial sustainability of the water industry in Scotland with that of the industry south of the border. It will also highlight the direct impact that the level of operating costs incurred by Scottish Water will have on customers' bills. In this volume, we explain how we propose to scrutinise these costs to ensure that they are no higher than they need to be.

I had also planned to outline our proposed approach to establishing the scope for efficiency in the delivery of the capital programme in this volume. Unfortunately, there are still a number of outstanding issues concerning the definition and delivery of the *Quality and Standards II* capital programme. I have concluded, reluctantly, that it would not be in the customer interest to publish our proposals for determining the scope for capital efficiency until these issues are resolved. I have extended the deadline for responses to the issues raised in this current volume to 5 November 2004.

In the *Strategic Review of Charges 2002-06*, I set challenging but achievable efficiency targets for operating costs and capital expenditure. In 2003, I welcomed the solid start made by Scottish Water in improving its operating cost efficiency, but cautioned that more still needed to be done. I am pleased to say that Scottish Water appears to be rising to the challenge and it is likely that it will achieve the target of reducing operating costs to £265 million on a like-for-like basis by the end of the current regulatory control period. This will represent a reduction of some £145 million in real terms over four years. This improvement in Scottish Water's efficiency is to be welcomed; as a result, customers' bills will be some 15% less [more than £40 less for the average household] than they would otherwise have been.

It is, however, important to put this undoubted success in its proper context. In last year's Costs and Performance

Report, we explained that if Scottish Water achieved the target for reducing operating costs, and the companies south of the border did not outperform the targets set by Ofwat, then operating cost inefficiency would still cost the average household some £23 per year, or around 8% of its annual bill.

Companies also have an incentive to outperform the targets set by Ofwat in order to reward their shareholders. The efficiency gap is therefore likely to grow unless we set further targets. In August this year, Ofwat published its draft determination of prices for the companies south of the border. This draft determination takes account of the expected performance of the companies. Ofwat expects the average company to continue to improve at a rate of around 3% a year. This clearly implies that Scottish Water still has considerable scope to improve its operating cost efficiency. I do not believe that customers ought to have to pay the cost of such inefficiency.

In this volume we explain in detail how we propose to assess the scope for efficiency in Scottish Water's operating costs. We propose to develop the comparisons that we have used during the last four years, using the Ofwat econometric models and an independent alternative model.

I am aware that some commentators have expressed reservations about our use of the econometric models developed by Ofwat. They assert that Scottish Water faces unique challenges and that the models do not take account of these. In this volume we have outlined how we propose to review and, if appropriate, take any such factors into account in our assessment of the scope for efficiency.

This volume also addresses important issues about levels of customer service. I am keen to understand whether stakeholders believe that we should set targets for the level of service that should be provided to customers, as well as the efficiency targets.

My focus at this Strategic Review of Charges is to ensure that I establish a robust and transparent process

and set prices that are no higher than necessary. I appreciate the need to explain clearly what my Office is doing, and that is why I am keen to facilitate debate about the challenges facing the water industry in Scotland and my proposals for the coming review. As part of that commitment, this volume explains in detail how to use the econometric models and where to find the input information. I have also arranged a number of stakeholder information days, and would encourage all interested parties to use these opportunities to have their say or to ask questions. These views will help to inform the Strategic Review of Charges and we will take full account of representations that are made to us in setting an efficiency target for operating expenditure for Scottish Water.

A handwritten signature in black ink, appearing to read 'Alan D A Sutherland'.

Alan D A Sutherland

Water Industry Commissioner for Scotland

October 2004

Executive summary

Introduction

The role of this Office, as economic regulator, is to set a regulatory framework that provides incentives to Scottish Water to achieve efficiencies and improve customer service.

This is the fourth volume in a series of documents which explain and seek views on our proposed approach to the *Strategic Review of Charges 2006-10*.

In this volume we discuss:

- how the regulatory regime can create incentives to improve performance;
- how we propose to decide on the level of operating costs that Scottish Water should be allowed to incur; and
- how best to ensure that customers receive an appropriate level of service.

We have identified a number of questions for consultation. These questions are set out at the end of the relevant chapters and are reproduced under chapter headings at the end of this Executive Summary. All responses to this consultation should be received by 5 November 2004. These should be sent to :

Katherine Russell
Water Industry Commissioner for Scotland
Ochil House
Springkerse Business Park
Stirling FK7 7XE

or by email to :

SRCmethodology@watercommissioner.co.uk

We will publish a summary of responses, and our conclusions, on our website www.watercommissioner.co.uk on 19 November 2004.

We had planned to include our proposed method for assessing the scope for operating cost and capital expenditure efficiency in this volume. Unfortunately, there are a number of issues that are still outstanding in defining the current *Quality and Standards II* capital programme. With some reluctance we have therefore

delayed finalising our approach to assessing the scope for capital expenditure efficiency until we have a fully defined capital programme for *Quality and Standards II*. This area of work will now be covered in a fifth volume. We will extend the date for responses to the questions for consultation that are set out in Volume 5.

Incentive based regulation

Regulation seeks to limit the power of a natural monopoly and ensure that it acts in the customer interest. Regulation ensures that the monopoly:

- restrains prices, by setting price or revenue limits; and delivers acceptable levels of customer service.

Common forms of regulation

There are five main regulatory models:

- **Cost-of-service regulation:** in this model the regulator sets the return that can be earned on investment by companies. This enables a company to recoup, at a set rate, the costs and investments that it has put in to provide the services. There is no incentive for a company to minimise prices or to delay investment for as long as possible.
- **Price cap regulation:** price cap regulation (RPI-X) sets the maximum prices that companies can charge for their services for a period of years. This provides an incentive to a company to improve its efficiency. This is because it has to drive down costs in order to maximise profits.
- **Yardstick regulation:** yardstick regulation involves comparing the performance of a company with that of other companies in the same industry. The regulator uses these comparisons to set targets for other companies in the industry. Yardstick regulation is usually used in conjunction with either price cap or rate of return regulation.
- **Performance based regulation:** performance based regulation relies on establishing a reliable link between the profits of the regulated company and the performance measures set by the regulator. Price increases could be delayed or fines become payable if the company does not achieve the defined

performance targets. The company therefore has a strong incentive to meet the targets set.

- **Franchise regulation:** under franchise regulation, the regulator invites companies to bid for the right to provide services to the public. The company that offers the best price-quality package wins the bid and will contract to provide the services at a certain price and to a defined quality standard.

We believe that price cap regulation is the most applicable to the current position of the water industry in Scotland. The RPI-X approach is widely used in the regulation of utilities in the UK. Using this approach in Scotland will allow more direct comparison with the industry in England and Wales. This is important as it is through benchmarking the performance of Scottish Water with other water companies that we can determine the extent of efficiencies that are possible.

Providing incentives through regulation

In the context of regulated utilities, incentive regulation has been defined as “the use of rewards and penalties to induce the utility to achieve desired goals where the utility is afforded some discretion in achieving goals¹.” In the case of the water industry, the “desired goals” would include:

- keeping prices to customers as low as possible;
- meeting environmental and water quality objectives;
- delivering the required investment programme;
- maintaining the long-term sustainability of the industry; and
- meeting customer service targets.

As part of its 2004 price review², Ofwat listed the general criteria that it considered should apply for incentive mechanisms. Ofwat stated that the mechanism should:

- be in the long-term interests of customers;
- offer meaningful and worthwhile rewards for genuine outperformance;
- offer adequate penalties for underperformance;
- provide timely rewards and penalties;
- stimulate continuous improvements;
- be known in advance;
- be straightforward in concept;
- follow simple rules;
- be simple to apply; and
- avoid retrospective changes.

We believe that these criteria are as relevant to the public sector as to the private sector water industry. Our proposed use of the RPI-X mechanism would seem to be consistent with these criteria.

¹ Lewis, Tracy and Chris Garmon, ‘Fundamentals of incentive regulation’. PURC/World Bank International Training Program on Utility Regulation and Strategy, June 1997.

² Ofwat, ‘A further consultation on incentive mechanisms: Rewarding future outperformance and handling underperformance of regulatory expectations’, June 2003.

Table 1: Criteria for an effective framework for incentives

Criteria	How well does RPI-X fit the criteria?
In long-term interests of customers	Good. It is widely agreed that RPI-X works well in incentivising firms to improve efficiency in operation and investment. There are risks that firms may seek to cut corners in service delivery, but proper scrutiny from regulators and customer committees should reduce this risk.
Meaningful and worthwhile rewards for genuine outperformance	Good. Regulated companies in the UK have improved their efficiency. This suggests that regulated firms believe the benefits to be worthwhile. The context of 'rewards' for a public sector company may be different.
Adequate penalties for underperformance	We are not aware of any evidence showing the penalties for underperformance to be inadequate.
Timely rewards and penalties	Acceptable. A regulatory period of four to five years ensures that the incentive framework can reward (or penalise) managers who are responsible for outperformance (or underperformance). The period is not so long that there is an inordinate delay in transferring the benefit to customers.
Stimulate continuous improvements	Good. This can be further enhanced by implementing a rolling incentive mechanism.
Known in advance	Good. The targets for the regulatory period are set out in advance. The mechanism is well understood by all stakeholders.
Straightforward in concept	Good. The concept is relatively straightforward. Companies are motivated to meet and beat the targets set by the regulator.
Simple rules	Acceptable. In its initial form, simplicity was one of the merits of the framework. However, the rules have inevitably become increasingly complicated.
Simple to apply	Acceptable. No new information, which is not already collected either during the initial price-setting or through ongoing monitoring, is required. The rules are well documented.
Avoid retrospective changes	The incentive framework relies on consistency and transparency. These are two of the Better Regulation Task Force Principles that we have adopted.

Some commentators have suggested that RPI-X promotes short-term planning by utilities instead of encouraging the long-term investment planning that could sustain efficiency improvements and would be more beneficial to customers. We agree that there is a risk that regulated companies are likely to maximize their short-term performance. It would be desirable to ensure that regulated companies planned for the long term. We consider that transparent and consistent regulation are likely to be at least as important as other potential regulatory actions.

Our view is that there needs to be a balance between short-term and long-term pressures. It is important to both customers and to the service provider that we are clear about the long-term prospects for prices. It is equally important, however, that there is a current pressure to deliver value for money to customers. On balance, we believe that RPI-X does work in the

customer interest. If the regulator monitors service levels and asset condition and performance effectively, he can reduce the risk that a company seeks short-term benefits and stores up problems for the future. Regulatory consistency and transparency are essential, but so too is the strength of the regulatory framework. The regulated company must believe that the regulator can and will apply incentives or penalties.

In order to improve the transparency and consistency of the framework, we would also propose to introduce a rolling incentive mechanism. In its 1999 price review, Ofwat proposed a rolling incentive mechanism, which it believed would strengthen incentives for the companies. The mechanism allows companies to keep the benefit of outperformance of targets for a full five-year period, irrespective of when the savings are made. It is only after a period of five years that the benefit of any outperformance is passed to customers.

Employee incentives

It is important that the benefits of any outperformance encouraged by RPI-X regulation are shared appropriately between the various stakeholders. The periodic setting of prices will ensure that customers benefit in the medium term. There does, however, have to be appropriate incentives for Scottish Water's employees to outperform the regulatory targets.

The nature and scope of incentives for management and employees is clearly outside our remit. However, the potential benefits to customers of improved and sustained performance are important considerations for this office. From a customer perspective, we believe that incentives should be designed to encourage exceptional performance and should be consistent with the regulatory settlement. Management bonuses should also be seen to reflect improvements in the value for money that is achieved for customers.

Under RPI-X regulation, Scottish Water could be permitted to retain the benefits of outperformance of regulatory targets. It is important that this incentive is in the customer interest. We therefore propose to protect this interest by introducing the right to retain the benefits of outperformance on the condition that the Board

agrees to publish, in advance, the incentive framework for managers. The Board would also be required to ensure that achieving regulatory targets is a clear and discrete element of the framework.

This is not without precedent in quasi-public, regulated organisations. Two examples of other benefit sharing schemes indicate the scope of what is possible.

Glas Cymru³: the remuneration of Glas Cymru's executive directors is designed in such a way that a high proportion of the maximum potential pay is linked directly to company performance. Half of the maximum bonus is based on financial performance (measured by growth in financial reserves) and the other half is based on how well the company delivers services to customers.

Network Rail Limited⁴: Network Rail's Management Incentive Plan (MIP) is designed to: "create the potential to reward outstanding performance based on individual contribution and the overall success of Network Rail in meeting the objectives of the Business Plan."⁵

Setting the allowed level of operating costs

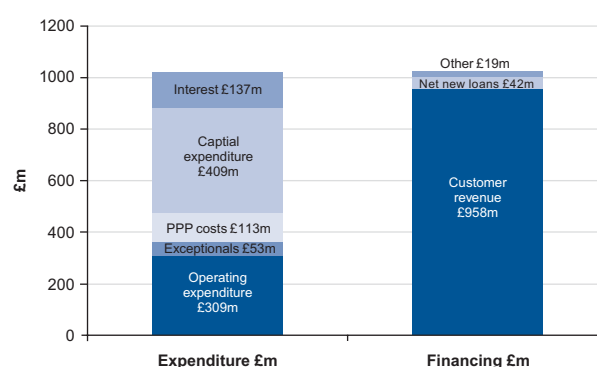
Operating expenditure comprises day-to-day running costs such as employment costs, electricity, materials, hired and contracted costs, local authority rates, insurance, software licences and vehicle running costs. Bad debt is also regarded as a running cost.

We do not include the following in operating costs:

- maintenance of the asset base;
- depreciation;
- infrastructure renewals charge;
- costs of Public Private Partnership (PPP) schemes;
- interest payments; and
- taxation.
- the costs of abnormal pension contributions;
- redundancy payments;
- rates rebates; and
- unusual weather conditions.

Operating expenditure accounts for some 30% of revenue. This is illustrated in Figure 1, which shows that in 2003-04, Scottish Water's operating expenditure was £309 million.

Figure 1: Scottish Water expenditure and funding 2003-04



We collect information about the operating costs incurred by the water and sewerage service undertakers in the UK using a consistent breakdown of operating expenditure. This facilitates comparisons with other water and sewerage companies.

Underlying operating expenditure

In order to ensure that our comparisons are objective and fair, we exclude one-off items of expenditure that can affect reported operating expenditure. Examples would include:

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

Base service operating expenditure

The baseline level of operating expenditure is the expenditure incurred in the base year. We will apply

³ Source: Interim statement of Glas Cymru policy for the remuneration of directors, Glas Cymru Cyfyngedig Annual Meeting (2001).

⁴ Source: Management Incentive Plan Statement – 2002-03, Network Rail Limited.

⁵ Ibid.

future efficiency targets to this baseline. We will use the following process to set the baseline level of operating costs for the draft determination:

- We will use the 2003-04 statutory accounts and Annual Return information to establish the total level of Scottish Water's operating expenditure in that year.
- We will identify exceptional and atypical costs and subtract them from total operating expenditure. This will allow us to establish the normal ongoing costs of running the business.
- Finally, we will assess whether there is anything unusual about Scottish Water's cost allocation in 2003-04. We will compare Scottish Water with the companies in England and Wales to ensure that its cost allocation practices are consistent with those in England and Wales. If necessary, we will make appropriate adjustments to Scottish Water's operating expenditure.

We are due to publish the final determinations in November 2005. We will therefore have information for 2004-05 at that stage. We therefore propose to revise our assessment of the baseline using information for 2004-05.

New operating expenditure

Scottish Water incurs 'new' operating expenditure to deliver improvements in:

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

Such new operating costs are added to the baseline that we described above.

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

- Does the expenditure result in a level of service that exceeds the reported norms for England and Wales, or enable significant additional sewage treatment?
- Is 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 operating expenditure, rather than relying on estimates from contractors/manufacturers or on an arbitrary percentage of the capital 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 operating expenditure and capital investment?
- Where appropriate, have single authority solutions been investigated?
- Has the authority quantified potential savings to the baseline operating expenditure, which arise from upgrading works or systems, and offset increases in new operating expenditure?

Like-for-like comparison

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

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

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

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

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

making changes to existing assets to modify the way in which they operate.

Calculating relative efficiency

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

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

Ofwat's methods of benchmarking

Ofwat uses econometric modelling to establish a relationship between the costs incurred by the companies and a number of cost drivers. These cost drivers take account of both engineering and economics. Ofwat developed these models jointly with Professor Mark Stewart of Warwick Business School in the early 1990s. They have subsequently been updated and improved.

The Competition Commission endorsed the models in August 2000, following a detailed review, and in January 2000 Ofwat's approach earned wide endorsement as an example of best practice from the Performance and Innovation Unit of the UK Government Cabinet Office.

In January 2004, Ofwat published a revised suite of models for comparing operating expenditure. The 2004 models have been re-estimated using 2002-03 information from the companies south of the border and will be used as part of the 2004 price review. There are nine models for operating expenditure⁶:

⁶ There are eight econometric models for assessing capital maintenance efficiency, hence the 17 models referred to by the Performance and Innovation Unit in its report

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

The purpose of each model is to establish a relationship between the costs reported by the companies and external cost drivers. The models themselves take different forms. These are summarised in Table 2.

Table 2: Summary of econometric models and explanatory factors

Model	Model type	Explanatory factors
Water resources and treatment	Linear model for unit cost	Population, number of sources, distribution input, proportion of supplies from rivers.
Water distribution	Log unit cost	Population, proportion of total mains length with diameter > 300mm.
Water power	Log linear	Distribution input, average pumping head.
Water business activities	Log linear	Number of billed properties.
Sewer network	Log linear	Sewer length, area, resident population, holiday population.
Large sewage treatment works	Log linear	Total load, use of activated sludge treatment, tight effluent consent for both suspended solids and BOD ₅ .
Small sewage treatment works	Unit cost	Works size, works type, load.
Sludge treatment and disposal	Unit cost	Weights of dry solids, disposal route.
Sewerage business activities	Unit cost	Number of billed properties.

Water resources and treatment

This model predicts the costs associated with water resources, the treatment process and the operating environment.

Table 3: Ofwat's model for water resources and treatment operating expenditure

Water resources and treatment		
Modelled cost:	Resources and treatment functional expenditure (£m) less power expenditure (£m), less Environment Agency charges (£m), divided by resident population (millions)	
Explanatory variables	Coefficient	Standard error
Constant	1.485	1.927
Number of sources divided by distribution input (M/d)	16.770	6.268
Proportion of supplies derived from river sources	5.124	2.449
Statistical indicators:	Number of observations: 22	R ² : 0.274

(Resources and treatment expenditure less Environment Agency charges less power expenditure) / resident population = 1.485 + 16.770 x (number of sources / distribution input) + 5.124 x (proportion of supply from rivers)

Water distribution

At the 1999 price review, Ofwat carried out a thorough review of the potential cost drivers for water distribution. Analysis showed that the length of large diameter mains (300mm diameter or more) was statistically significant. This result is not surprising given that repairs, maintenance and inspection on large mains are likely to incur much greater costs than those on small mains.

Table 4: Ofwat's model for water distribution operating expenditure

Water distribution		
Modelled cost:	Log to base e of (distribution functional expenditure (£m) less power expenditure (£m), divided by resident population (millions))	
Explanatory variables	Coefficient	Standard error
Constant	-5.203	0.160
Length of main greater than 300mm diameter / total length of main	5.165	1.943
Statistical indicators:	Number of observations: 22	R ² : 0.261

Log to base e of ((distribution functional expenditure less power expenditure) / resident population) = -5.203 + 5.165 x (proportion of large diameter mains)

Water power

This model is based on the physical relationship between the amount of water pumped and the energy required. It incorporates both vertical lift and the energy required to overcome friction in pipes.

Table 5: Ofwat's model for water power operating expenditure

Water power		
Modelled cost:	Log to base e of power expenditure (£m)	
Explanatory variables	Coefficient	Standard error
Constant	-9.081	0.245
Log to base e of (distribution input (Ml/d) x average pumping head)	0.940	0.023
Statistical indicators:	Number of observations: 22	R ² : 0.989

Log to base e of power expenditure = $-9.081 + 0.94 \times \log \text{ to base e of (distribution input x average pumping head)}$

Water business activities

This model relates business activity costs (including customer services, scientific services and the charge for doubtful debts) to the number of billed properties.

Table 6: Ofwat's model for water business activities expenditure

Water business activities		
Modelled cost:	Log to base e of business activities expenditure (£m) plus doubtful debts (£m)	
Explanatory variables	Coefficient	Standard error
Constant	-3.916	0.255
Log to base e of number of billed properties (thousands)	0.949	0.040
Statistical indicators:	Number of observations: 22	R ² : 0.966

Log to base e of (business activities expenditure plus doubtful debts) = $-3.916 + 0.949 \times \log \text{ to base e of (number of billed properties)}$

Sewer network

This model expresses costs per unit length of sewer. It takes into account the amount of sewage being transported through the sewerage system. This is a function of area, since this will affect surface water drainage volumes. Costs associated with remoteness are also a function of area. Sewer network costs are also a function of population since this will impact on sewage volumes. The model also takes account of the higher costs expected in regions with a significant holiday population.

Table 7: Ofwat's model for sewer network operating expenditure

Sewer network		
Modelled cost:	Log to base e of sewer network expenditure (£m) less Environment Agency charges (£m), per kilometre of sewer for each area	
Explanatory variables	Coefficient	Standard error
Constant	-6.515	0.313
Log to base e of area of sewer district per kilometre of sewer	0.179	0.032
Log to base e of residential population per kilometre of sewer	0.432	0.169
Holiday population divided by resident population	0.715	0.501
Statistical indicators:	Number of observations: 64	R ² : 0.457

Log to base e of sewer network expenditure less Environment Agency charges per kilometre of sewer = $-6.515 + 0.179 \times (\log \text{ to base e of area of sewer district per kilometre of sewer}) + 0.432 \times (\log \text{ to base e of residential population per kilometre of sewer}) + 0.715 \times (\text{holiday population/resident population})$

Large sewage treatment works

The large sewage treatment works model covers those sewage treatment works serving a 'population equivalent' of at least 25,000. Population equivalent is a measure of the amount of sewage treated, both domestic and industrial, expressed in terms of the number of domestic customers required to produce a similar strength and volume of sewage.

Table 8: Ofwat's model for large sewage treatment works operating expenditure

Large sewage treatment works		
Modelled cost:	Log to base e of functional expenditure on sewage treatment at large works (£000) less Environment Agency charges (£m) and terminal pumping costs	
Explanatory variables	Coefficient	Standard error
Constant	-1.455	0.253
Log to base e of total load ⁷	0.754	0.028
Tight effluent consent for both suspended solids and BOD ₅ ⁸	0.060	0.051
Activated sludge used	0.353	0.054
Statistical indicators:	Number of observations: 369	R ² : 0.715

Log to base e of large sewage treatment works expenditure less Environment Agency charges and terminal pumping costs = $-1.455 + 0.754 \times (\log \text{ to base e of total load}) + 0.06 \text{ if tight effluent consent for both suspended solids and BOD}_5 + 0.353 \text{ if activated sludge used.}$

⁷ For the purposes of this model, total load is estimated as population equivalent x 120.

⁸ Tight effluent consent is defined as 30 mg/litre or less suspended solids and 20 mg/litre or less BOD₅.

Small sewage treatment works

This model uses average unit costs across England and Wales.

Table 9: Ofwat's model for small sewage treatment works operating expenditure

Cost of small sewage treatment works										
This is a unit cost model. Each company's average annual expenditure divided by the total load treated at each works is compared with the weighted average industry cost.										
	Weighted average industry unit cost £000s/(kg BOD5/day)									
	Primary	Secondary activated sludge	Secondary biological	Tertiary A1	Tertiary A2	Tertiary B1	Tertiary B2	Sea outfall preliminary	Sea outfall screened	Sea outfall unscreened
Size band 1	0.78	1.04	1.00	1.07	0.72	0.69	0.92	10.89	-	0.32
Size band 2	0.33	0.83	0.59	0.62	0.38	0.49	0.55	-	-	0.05
Size band 3	0.33	0.46	0.31	0.43	0.33	0.30	0.39	0.43	0.04	0.01
Size band 4	0.30	0.21	0.16	0.20	0.29	0.16	0.19	0.01	0.10	0.01
Size band 5	0.24	0.14	0.11	0.14	0.16	0.10	0.12	0.01	-	-
Number of observations: 500										

Sludge treatment and disposal

This model compares the costs of sludge treatment and disposal to the volume treated and the possible methods of disposal. The model uses average unit costs across England and Wales.

Table 10: Ofwat's model for sludge treatment and disposal operating expenditure

Cost of sludge treatment and disposal								
This is a unit cost model. Each company's average annual expenditure is divided by the amount of sludge disposed to each disposal route and this is compared with the weighted average industry cost.								
	Weighted average industry unit cost £000s/(thousand tonnes of dry solids)							
Disposal route	Farmland - untreated	Farmland - conventional	Farmland - advanced	Incineration	Landfill	Composted	Land reclamation	Other
£000/ttds	-	198.2	255.9	161.6	208.6	205.2	140.7	118.4
Number of observations: 80								

Sewerage business activities

This model uses an average unit cost per billed property across England and Wales.

Table 11: Ofwat's model for sewerage business activities operating expenditure

Sewerage business activities	
This is a unit cost model. Each company's average annual business activities expenditure (plus doubtful debts) is divided by the number of billed properties. This is then compared with the weighted average industry cost.	
£/billed property	Weighted average industry unit cost 11.77
Number of observations: 10	

We only made one change to the Ofwat models in the *Strategic Review of Charges 2002-06*. This change concerned the small sewage treatment works model. We took the view that many of the small works in Scotland were significantly smaller than this and therefore developed a new size band for works with a population equivalent up to 100 – we called this size band 0. Size band 1 for Scotland now covered works with a population equivalent of between 100 and 250 (rather than 0 to 250, as in England and Wales).

We developed two new unit costs for Scotland – one for works in size band 0 and the other for works in size band 1 in Scotland. The unit costs of the very small works in size band 0 were high relative to those in the other size bands. This reflects the fact that it tends to cost more to treat loads at very small works. The small sewage treatment works model therefore continued to demonstrate economies of scale.

The alternative model

At the time of the last review we developed an alternative model to assess the efficiency of the water industry in Scotland. This model was used to check the results of the Ofwat econometric models. We were aware that the Competition Commission had concluded that, although the Ofwat econometric models were robust, alternative models could have a place in efficiency analysis.

In developing an alternative model we took particular care to use a different approach to Ofwat's econometric models so that the alternative model could provide an independent check on the results given by Ofwat's models.

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

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

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

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

We identified appropriate drivers for the costs that cannot be controlled by management. Tables 12 and 13 set out the cost drivers (for water and sewerage respectively) that we identified for each activity.

Table 12: Alternative model: cost drivers by activity for the water service

	Cost drivers used in the model, associated with each activity				
Activity	Assets operated	Asset attribute	Customers served	Volume	Other
Abstraction and treatment	Impounding reservoirs and lochs	Number and average size of each asset type	-	Annual distribution input ⁹	Average pumping head ¹⁰ in abstraction and treatment
	Burns and springs				
	River abstraction				
	Boreholes				
	Water treatment works				
Distribution	Water mains	Length of network	Resident connected population	Annual distribution input	Average pumping head in the distribution system
	Water pumping stations	Number and average size of each asset type			
	Service reservoirs and towers				
Business activities			Number of billed water customers – domestic (unmeasured, metered) non-domestic (unmeasured, metered)		Annual number of water samples taken
Bad debt					Annual revenue billed

⁹ Distribution input is the volume of water put into supply (including all leakage).

¹⁰ Average pumping head is the average lift through pumping of water put into supply. Pumping takes place as part of the abstraction and treatment processes, and within the distribution system, where treated water is provided to customers.

Table 13: Alternative model: cost drivers by activity for the sewerage service

	Cost drivers used in the model, associated with each activity				
Activity	Assets operated	Asset attribute	Customers served	Volume	Other
Sewage collection	Sewers	Length of network	Resident connected population	Volume per head	Size of area served
	Pumping stations	Number and average size			
	Storm outfalls	Number			
Simple sewage treatment	Sea outcrops - unscreened - screened	Number and average size	-	Load ¹¹ treated	
	Preliminary treatment works				
	Primary treatment works				
	Public septic tanks	Number			
Complex sewage treatment	Secondary treatment works - using activated sludge process - using biological process Tertiary treatment works - using activated sludge process - using biological process	Number and average size		Load treated	
Processing sludge				Tonnes disposed (dry weight)	Disposal route (landfill, farmland, incineration, other)
Business activities	-		Number of billed sewerage customers - domestic (unmeasured, metered) non-domestic (unmeasured, metered)		Number of sewage samples taken
Bad debt					Annual revenue billed

We used information from Scottish Water and the water and sewerage companies about each of these cost drivers. The model also takes account of economies of scale. We do this by calculating the number of 'standard

assets' that each company has. The standard assets take account of the size and operating costs of the companies' assets.

We multiply the unit costs for each asset cost driver by the number of 'standard' assets to arrive at a predicted cost for each of the ten activities of the business. We multiply the unit costs for customers, volumes and other drivers by the information reported by the companies and by Scottish Water on these items. This results in an additional predicted cost for each of the ten activities. We then sum, for each activity, all of the relevant predicted costs. This tells us the average expected operating expenditure of that activity for each company and for Scottish Water.

We then combine the ten areas of the model to determine the overall predicted operating expenditure of each water and sewerage undertaker. Comparing this predicted cost with the actual cost reported by each undertaker gives us an initial indication of the level of efficiency.

The purpose of making adjustments to reported costs

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

We need to take account of all of these differences. For that reason, we ask Scottish Water to draw to our attention all factors (those not included in the models) that influence cost. This should include factors that both increase and decrease cost.

We want to ensure that our efficiency targets neither unduly penalise nor reward Scottish Water. Some commentators have argued that it is unfair to draw comparisons between Scottish Water's performance and that of the privatised water and sewerage companies in England and Wales. In particular, they question the application of Ofwat's econometric models in Scotland¹². We believe that the fact that the Ofwat

¹¹ In simple terms, sewage load is a measure of the amount of treatment that is required to make sewage safe for the environment.

¹² See, for example, J Findlay, 'Financing the Scottish water and sewerage industry', paper to the Scottish Trades Union Conference, April 2004.

models have been successfully applied to companies as different as Severn Trent Water¹³ and South West Water¹⁴, and to both large water and sewerage companies¹⁵ and small water only companies¹⁶, confirms that the models can reasonably be applied in Scotland. While some new special factors may have to be taken into account, this does not invalidate the modelling process.

Commentators who question our benchmarking process cite the following differences between the industry in Scotland and that south of the border:

- Scotland's geography (its size, remote islands, long coastline and topography);
- its population settlement patterns (remote communities, concentrated dense urban areas);
- the extent of the assets required to serve customers in Scotland (long mains, small isolated treatment works);
- the quality of the assets inherited by Scottish Water (condition and performance of the mains, sewers, treatment works, pumps);
- the nature of the customer base;
- the fact that Scottish Water is in public ownership (political interest, Scottish Water's duty to Scotland, remit and freedom of management); and
- the short time that Scottish Water has had to mature and improve.

We believe that some of these factors may require us to make adjustments to the results of the models. To justify an adjustment, Scottish Water has to provide evidence in the following areas:¹⁷

- What is the justification for the special circumstances which demonstrates a material difference from

industry norms? Scottish Water will need to set out whether the factors are the result of special obligations, the character of all or part of its customer base, or the result of historical development of the water and sewerage systems in its area of supply.

- What is the quantification of the impact of the special factors that demonstrate a net additional effect on Scottish Water's costs, over and above that which would be incurred without these factors?
- What has Scottish Water done to manage the additional costs arising from the special factors and to limit their impact?
- Are there other special factors that reduce costs relative to industry norms? If so, have these been quantified and offset against upward cost pressures?

Assessing the size of the efficiency gap

The term 'efficiency gap' refers to the difference between Scottish Water's actual reported operating costs and the costs reported by the comparator companies for providing a similar level of service. We need to distinguish between the efficiency gap that exists today and the gap that could exist in the future, as the companies in England and Wales are likely to continue to improve.

The efficiency gap is the difference between Scottish Water's actual costs and its adjusted predicted level of costs. We convert these differences to a relative scale in order to be able to complete the benchmarking. We call this the efficiency score. An illustrative example is presented in Table 14 opposite.

Table 14: Example illustrating how the efficiency score is calculated.

	Adjusted Observed £m	Predicted £m	Adjusted Residual		Efficiency Score
			£m	%	
A water & sewerage company	200.00	155.00	45.00	29.03%	129.03

¹³ Severn Trent Water covers West and East Midlands and part of rural Wales.

¹⁴ South West Water covers Devon and Cornwall.

¹⁵ Thames Water has some 12 million customers.

¹⁶ Bournemouth and West Hampshire Water covers just the water service for the Bournemouth area.

¹⁷ These questions are adapted from Ofwat's letter to Regulatory Directors, RD35/98, 1998.

In this example, a company has reported operating costs of £200 million, after adjustments. The econometric models predict costs of £155 million for this company. It is therefore relatively inefficient. We first calculate the residual in percentage terms:

$$100\% \times 45/155 = 29.03\%$$

The last step in the comparison process is to rebase efficiency scores such that the average efficiency score of companies south of the border is 100. This simplifies the presentation of Scottish Water's score.

Assessing the future efficiency gap

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

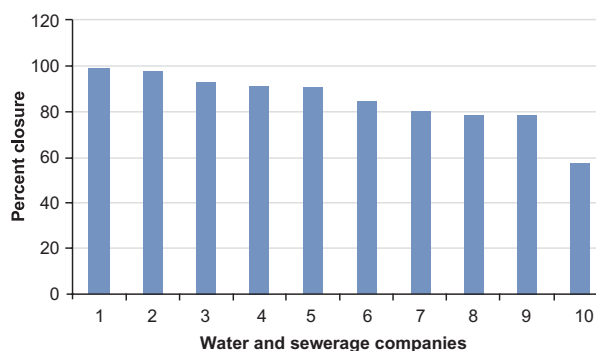
Ofwat published draft targets and incentives in August 2004¹⁸, and will finalise them in November 2004. This will inform our assessment of the scope for improvement by Scottish Water over the period 2006 to 2010. We can then set targets for Scottish Water, which would close much of the expected efficiency gap in 2010.

Rate of improvement in efficiency

The final important area that we need to consider relates to the rate of improvement that we can expect from Scottish Water. In the *Strategic Review of Charges 2002-06* we examined evidence from England and Wales about the rate of progress achieved by companies during the 1990s. We assumed that Scottish Water should be able to match the pace of change achieved south of the border.

Our analysis demonstrated that during their best five-year period, the companies achieved an average closure of 85% of the gap to the leading company. Figure 2 is taken from the *Strategic Review of Charges 2002-06*.

Figure 2: Closure of efficiency gap by water and sewerage companies over five years



We propose to conduct a similar analysis to establish the rate at which Scottish Water should be required to improve during the 2006-10 regulatory control period.

Calculating total allowable operating expenditure

We are proposing to set targets in terms of total allowable operating expenditure (not including depreciation). We will set total allowable operating expenditure at a level that we believe is sufficient for Scottish Water to carry out its operations for each year of the regulatory period. This is the amount that will be funded through customer charges. It is made up as follows:

Total allowable operating expenditure
=
Baseline operating expenditure ¹⁹
±
Assessed changes in baseline operating expenditure
-
Efficiencies in baseline operating expenditure ²⁰
+
New operating expenditure ²¹
-
Efficiencies on new operating expenditure ²²
+
Public Private Partnership operating expenditure
-
Efficiencies on Public Private Partnership operating expenditure
+
The impact of annual inflation on all of these components

¹⁸ Ofwat Future water and sewerage charges 2005-10 – Draft determinations, August 2004.

¹⁹ See Chapter 6.

²⁰ See Chapters 7, 8 and 9.

²¹ See Chapter 12.

²² See Chapter 13.

We will no longer refer to a monetary value for the total efficiencies required. However, if stakeholders want to count the total monetary value of the efficiencies required in this regulatory control period in order to compare it with that used in the *Strategic Review of Charges 2002-06*, for each year they should add the following then adjust for annual inflation:

- efficiencies in baseline operating expenditure;
- efficiencies in new operating expenditure; and
- efficiencies in Public Private Partnership costs.

Public Private Partnerships

The three former authorities decided to let a total of nine concessions for the building and operation of waste water treatment plants. These concessions were for a period of 25-30 years.

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

The results of the nine projects would appear to have realised considerable tangible benefits in the short term. It is open to question whether these benefits still apply.

The nine PPP contracts represent a capital investment on behalf of customers of around £550 million, which contrasted 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 are therefore only comparable on an

aggregate basis if the actual service delivered and the construction of assets are taken into account.

The nine projects are outlined in Table 15. The table also shows the projected fee payable to each consortium.

Table 15: PPP contracts with Scottish Water

Project name/ Company name:	Contract signed	Duration years	Construction costs (£m)	Annual fee in 2002-03
Almond Valley, Seafield and Esk Valley: Stirling Water (Seafield) Ltd	1999	30	£100m	£25m
Levenmouth: Caledonian Environmental Services Ltd	2000	40	£46m	£5m
Highland (Fort William and Inverness): Catchment Ltd	1996	25	£33m	£9m
Tay: Catchment (Tay) Ltd	1999	30	£84m	£17m
Aberdeen: Aberdeen Environmental Services Ltd	2000	30	£64m	£13m
Moray: Catchment (Moray) Ltd	2001	30	£60m	£8m
Daldowie/Shieldhall: SMW Ltd	1999	25	£66m	£16m
Dalmuir: Scotia Water UK Ltd	1999	25	£37m	£7m
Meadowhead, Stevenston & Inverclyde: Ayr Environmental Services Ltd	2000	30	£59m	£12m
Scotland total			£549m	£112m

Financial and efficiency consequences

We analysed the value for money of the PPP contracts in 2001. The evidence suggested that these schemes were all delivered at a much lower cost for customers than would have been achieved by the three authorities under traditional procurement.

In the *Strategic Review of Charges 2002-06* we highlighted that there may be opportunities for Scottish Water to review the PPP contracts that it inherited. It seems clear that the implied operating costs of the PPP consortia are high relative to the expected level of operating costs associated with a waste water treatment plant of similar size. There would therefore appear to be

some scope for improved efficiency. Moreover, the recent and continuing significant improvement in Scottish Water's operating expenditure efficiency would suggest that it is now quite likely that Scottish Water could operate these plants at equal or lower cost than the PPP companies. It is conceivable, therefore, that Scottish Water could seek to take the operation of these assets back 'in-house'.

We have no doubt that the contracts represented good value for money at the time they were concluded. However, we consider that improvements in Scottish Water's performance have made it less certain that the PPP contracts represent value for money to customers today. It is important that we ensure that customers' bills are no higher than they need to be and, as such, we need to consider whether we can take any steps to ensure that PPP costs can be reduced. Possible options could be to set an efficiency target for PPP or to adjust the level of allowed revenue to reflect the efficient costs (financing and operating) of the services that are being delivered through PPP.

Our first proposed approach will be to look at the prices for which shares in the PPP concessions are changing hands and assess what this might tell us about the value for money that customers are currently receiving. Even if these prices are quite significantly lower than the apparent value to current customers, we would have to take account of the extent of the risk transfer that still remains with the PPP contractor.

The second proposed approach will be to look again at the operating and capital maintenance costs of the PPP company and, using the benchmarking techniques that we outlined in Chapters 8 and 9, assess the scope of any inefficiency. We will also use the capital maintenance models that we will describe in detail in Volume 5. Again, we would propose to take account of the value of any remaining risk transfer.

If we conclude that customers are currently paying too much for the services that are being provided (or will be by the end of the next regulatory control period) we would propose to take account of this in Scottish Water's price caps. This is clearly a move forward from the *Strategic Review of Charges 2002-06* where we did not

set an efficiency target on PPP. However, we did note at that time that it might be appropriate to apply such an efficiency target in the future.

Levels of service

Monitoring the levels of service

We monitor three broad aspects of service:

- asset performance measures;
- customer service measures; and
- public health and environmental performance measures.

Asset performance measures cover areas of service that depend on the water supply and sewerage infrastructure. They cover:

- pressure;
- planned supply interruptions;
- unplanned supply interruptions; and
- sewer flooding.

Customer service measures cover areas of service that depend on the management and employees of the organisation and the processes they use. Customer service measures cover:

- billing enquiries;
- written complaints;
- telephone contacts; and
- Public health and environmental performance measures.

Public health and environmental performance measures cover areas of service that relate to the service provider's ability to comply with the requirements for quality standards. These standards are set by the

respective quality regulators, DWQR²³ and SEPA²⁴. These measures include:

- meeting drinking water quality standards,
- complying with abstraction consents for rivers,
- complying with discharge consents at waste water treatment works, and
- the number of pollution incidents.

There are also a number of guaranteed minimum standards. Failure to comply with any of the guaranteed standards entitles the customer to financial compensation.

Encouraging improvements in the level of service

There are two possible approaches to regulating levels of service:

- Firstly, we could benchmark the performance of the regulated company against the performance of other companies in the same or similar industries. The results of this benchmarking would be published in order to provide the company with an incentive to improve performance in the future.
- Alternatively, we could set targets for some or all aspects of service quality. These targets should be quantifiable so that it is possible to measure whether the particular aspect of service has been delivered to the required standard.

Publishing the results of performance benchmarks is likely to encourage companies to improve their performance.

- Managers do not want to get a reputation for running a company that performs less well than other similar companies.
- Shareholders will be concerned about the impact of poor performance.

- The level of service adjustment applied by Ofwat at the price review should provide companies with an incentive to avoid being one of the worst performing companies and to aim to be one of the best performing companies.
- The threat of competition in certain aspects of the business, for example as a result of common carriage, retail competition or off-network solutions, should encourage companies to consider their level of service performance relative to other companies.

The benchmarking approach raises two issues:

- Are the incentives for performance improvement sufficiently strong?
- Are the incentives for performance improvement appropriate? Provided the overall performance measure reflects customer preferences accurately, this should not be an issue. However, this places an onus on the regulator to ensure that the performance measurement system is updated in line with any significant changes in customers' priorities.

The target setting approach is particularly useful in situations where there are no direct comparators for the regulated company, for example, in industries where there is one company and one regulator. In industries where comparators are available there may also be a role for targets. For example, it could be argued that it is appropriate to set Scottish Water a level of service target since it lags so far behind the companies south of the border.

The target setting approach also raises two issues:

- Is there sufficient information to set a target?
- Does the interaction between efficiency targets and levels of service targets weaken the regulator's ability to target reductions in costs?

There are many different aspects of customer service.

²³ DWQR – Drinking Water Quality Regulator – www.DWQR.org.uk

²⁴ SEPA – Scottish Environment Protection Agency – www.SEPA.org.uk

The cost of improving each aspect of customer service will vary depending on the level of service target that is set. Initial improvements may not be too costly to achieve, but further improvements are likely to become increasingly expensive. The regulator needs to understand these marginal costs and customers' willingness to pay if he is to set appropriate levels of service targets. We are not convinced that this would be consistent with our principles of transparency, consistency and proportionality.

The proposed approach for Scottish Water

We propose to develop our use of the benchmarking approach for quality of service regulation. The approach is tried and tested for the water industries in Scotland and England and Wales.

We have explained that we are proposing to set efficiency targets that are adjusted to take account of differences in the level of service. In this instance, we would accept claims for new operating costs designed to improve levels of service, provided there is a clear measurable output. We believe that this refinement of our benchmarking approach may capture some of the potential benefits of the target setting approach without the weaknesses.

Monitoring operating expenditure and levels of service

Framework for monitoring

The *Strategic Review of Charges 2006-10* is only the start of the regulatory process. During the regulatory control period we will monitor Scottish Water's progress in reducing costs and improving levels of service. We intend to build on the framework that we have already put in place to monitor performance, through:

- regular information submissions, comprising the Annual Return and more frequent updates of key performance indicators, and forecasts;
- independent audit of regulatory information;

- a process of query, challenge and confirmation of numbers;
- rigorous analysis of current and expected progress against targets;
- published reports; and
- the application of analytical tools which are designed to ensure that we can monitor real progress as opposed to apparent progress (for example, improvements that are due to the information for the annual return being calculated in a different way).

We will also monitor Scottish Water's progress relative to that of the companies in England and Wales. We will continue to use information from the companies south of the border. This information will include:

- companies' Annual Returns to Ofwat;
- comments on these returns by independent auditors, published by Ofwat;
- companies' published regulatory accounts;
- Ofwat's published analysis of companies' progress; and
- rigorous analysis of relative efficiency using our benchmarking tools.

Monitoring operating expenditure

Our monitoring will cover the following²⁵:

- baseline operating expenditure;
- new operating expenditure;
- Public Private Partnership (PPP) operating expenditure;
- year on year progress on each of the above against targets; and

²⁵ Chapters 6, 12 and 13 define and explain baseline, new and PPP expenditure, respectively.

- progress on baseline and new operating expenditure, relative to England and Wales.

Table 16 sets out our framework for monitoring progress on operating expenditure.

Table 16: Framework for monitoring progress on operating expenditure²⁶

Sources of information	Operating expenditure			Relative performance
	Baseline	New	PPP	Baseline and new ²⁷
<i>Scottish Water</i>				
Annual Return	✓	✓	✓	✓
Regulatory accounts (from 2005)	✓	✓	✓	✓
Monthly operating expenditure returns	✓			
Quarterly investment returns ²⁸		✓		✓
Independent comments by Scottish Water's Reporter	✓	✓	✓	✓
<i>England and Wales</i>				
Companies' annual returns				✓
Company regulatory accounts				✓
Independent comments by Reporters in England and Wales				✓
Ofwat's published annual reports				✓
Reporting progress	↓			
	Costs & performance reports			

Monitoring levels of service

We monitor the level of Scottish Water's customer service performance by using the overall performance assessment (OPA) that Ofwat has developed. We would propose to monitor improvements in customer service (financed by new operating cost) relative to the OPA or, if this is not appropriate, to some other clearly defined benchmark.

The OPA combines results for customer service measures with other information about performance in drinking water quality and environmental compliance to derive an overall score for the level of service.

Our framework for monitoring performance will focus primarily on the levels of service measures that comprise the OPA. We will also monitor performance against Scottish Water's Guaranteed Minimum Standards (GMS).

Table 17 sets out our framework for monitoring levels of service performance.

Table 17: Framework for monitoring levels of service performance

Sources of information	Guaranteed Minimum Standards	Overall performance assessment
<i>Scottish Water</i>		
Annual Return	✓	✓
Customer Service Performance Return	✓	✓
Quality Performance Assessments	✓	
Independent comments by Scottish Water's Reporter	✓	✓
<i>England and Wales</i>		
Companies' annual returns		✓
Independent comments by Reporters in England and Wales		✓
Reporting progress	↓	
	Customer service reports	

Conclusion

We believe that our framework for monitoring Scottish Water's performance is robust. The introduction of regulatory accounts in 2005 will further strengthen this framework.

We will continue to publish reports on progress made by Scottish Water, in order to inform stakeholders and encourage discussion and debate. These reports will pay particular attention to changes in the level of service that is provided to customers. They will also examine whether such changes are consistent with any new operating costs claimed by Scottish Water.

²⁶ The components of operating expenditure are defined in earlier chapters of this volume and are summarised in Chapter 14.

²⁷ Comparisons of relative performance exclude PPPs as there is no direct parallel in the water and sewerage industry in England and Wales.

²⁸ We use the quarterly investment returns to help monitor new operating expenditure because this expenditure is driven largely by Scottish Water's capital investment.

Questions for consultation

Chapter 3: Types of regulatory framework

1. Do stakeholders agree that the RPI-X framework is appropriate to the regulation of Scottish Water? If not, what alternative would you suggest and why?

Chapter 4: RPI-X incentive framework and benefit sharing

2. Assuming that an RCV approach is applied in Scotland in the *Strategic Review of Charges 2006-10*, is a cap required on the capital expenditure to be included in the RCV?
3. If so, should we implement a service-capping rule, similar to the one implemented by Ofwat in England and Wales²⁹?
4. Does the RPI-X mechanism provide appropriate incentives for Scottish Water?
5. Are there any significant differences between private and public companies, which we have not taken into account in this analysis?
6. Does our assessment of the importance of benefit sharing in providing incentives to Scottish Water to achieve efficiencies appear reasonable?
7. What level of transparency is appropriate for management bonuses in a public sector organisation?
8. Should management bonuses for Scottish Water be aligned with independently assessed regulatory and customer service targets?

Chapter 5: What is operating expenditure and why is it important?

No questions for consultation

Chapter 6: Establishing a baseline for operating costs

9. When setting operating expenditure efficiency targets, do respondents agree that we should use 2003-04 as a base year for the draft determinations and 2004-05 as a base for the final determinations?
10. We invite comments on the most appropriate figure to use for baseline operating expenditure in 2005-06 and the impact that different assumptions may have.
11. What factors do stakeholders believe could result in changes in baseline operating expenditure in the period 2006-10?
12. Do stakeholders think that our criteria for assessing Scottish Water's claims for changes in baseline operating expenditure are sufficient?

Chapter 7: Ensuring like-for-like comparisons of efficiency

13. Do respondents agree that our proposed "top-down" approach to benchmarking will provide the most appropriate method of comparing Scottish Water's performance?

Chapter 8: Ofwat's approach to assessing operating cost efficiency

14. Do respondents agree that the Ofwat econometric models for operating expenditure should be extended to Scotland for our *Strategic Review of Charges 2006-10*.

Chapter 9: An alternative method to assessing operating cost efficiency

15. What are your views on this alternative model?
16. What other approaches to the assessment of the scope for operating efficiency would you suggest? How would these work?

²⁹ Ofwat, 'A further consultation on incentive mechanisms: Rewarding future outperformance and handling underperformance of regulatory expectations', June 2003.

Chapter 10: Ensuring modelled results are objective and fair

17. Do you agree that it is appropriate to take into account differences in the scope of activities when determining Scottish Water's operating efficiency, relative to England and Wales? If so, which differences do you think are important to recognise and possibly take into account?
18. Do you agree that it is appropriate to take into account differences in levels of service when determining Scottish Water's operating efficiency, relative to England and Wales? If so, which differences do you think are important to recognise and possibly take into account?
19. How should we assess the cost of any such differences?

Chapter 11: The scope and timeframe for improvement

20. Do respondents agree with our proposed approach to assessing the rate at which any efficiency gap may be closed? If not, what approach would they suggest?

Chapter 12: New operating expenditure

21. Do respondents agree that the criteria that we adopted for assessing new operating expenditure at the *Strategic Review of Charges 2002-06* remain appropriate for assessing such expenditure for 2006-10?
22. Do respondents agree that there is greater scope for achieving efficiencies in new operating expenditure than in base operating expenditure?

Chapter 13: Public Private Partnership financing

23. Do respondents believe that we should set an efficiency target on PPP if we can identify that it is currently a more expensive option for customers? If not, why should customers be asked to pay more?

24. Do respondents believe that our approach to looking at the value for money of PPP is appropriate?

25. If we determined that an efficiency target was appropriate, should this be implemented at the start, during, or at the end of the next regulatory control period?

Chapter 14: Setting the allowed level of operating costs

26. What are the views of respondents on our proposals to set a level of allowable operating cost as the target for Scottish Water in each year of the regulatory control period?
27. What are the views of respondents on the scope for improved efficiency at Scottish Water? It would be helpful if stakeholders could express their views either with reference to the performance of the companies in England and Wales or to Scottish Water in isolation, and give reasons.

28. Do respondents have any views regarding Scottish Water's performance beyond 2010?

29. Do respondents believe that it is appropriate for us to set allowable levels of operating expenditure for Scottish Water such that the corporation has an incentive to outperform? If so, what are respondents' views on the split between efficiency targets and the incentive to outperform?

30. Should we seek to set separate levels of allowable operating expenditure for the 'wholesale' sewerage, 'wholesale' water and non-domestic retail components of Scottish Water?

Chapter 15: Regulating levels of service

31. What are respondents' views on the benchmarking approach and the target setting approach?
32. What are respondents' views on our proposed approach?

33. Are there any targets (eg leakage) that are appropriate in pursuing the benchmarking approach?

Chapter 16: Monitoring operating expenditure and levels of service

34. What are respondents' views on our proposed approach to monitoring Scottish Water's performance?

Section 1: Chapter 1

Introduction

We are committed to the principles of the Better Regulation Task Force: transparency, accountability, proportionality, consistency and targeting. Our approach to the second full Strategic Review of Charges, which covers the period 2006-10, takes full account of these principles. It also responds to some of the concerns raised by stakeholders in the last four years.

Our programme of work was described in a recent publication, *Our work in regulating the Scottish water industry: Setting out a clear framework for the Strategic Review of Charges*. In that document we explained that we intended to publish a detailed description of our approach to the next Strategic Review of Charges in a number of volumes. We are keen to understand the views of stakeholders. Each of the volumes that describe our methodology of price setting or calculating the scope for efficiency raises a number of questions for consultation.

- Volume 1 (published on 21 July 2004) outlined our detailed workplan.
- Volume 2 (published on 16 August 2004) described the background and outlined some of the changes in the institutional framework that will impact on the next Review.
- Volume 3 (published on 22 September 2004) explained how we propose to calculate the prices that customers will pay during the next regulatory control period. In particular, it explained our proposal to switch to the regulatory capital value (RCV) method of price setting.

This current volume, Volume 4, was scheduled to include our proposed method for assessing the scope for operating cost and capital expenditure efficiency. Unfortunately, there are a number of issues that are still outstanding in defining the current *Quality and Standards II* capital programme. With some reluctance we have therefore had to delay finalisation of our approach to assessing the scope for capital expenditure efficiency until we have a fully defined capital programme for *Quality and Standards II*. This area of work will now be covered in a fifth volume. We will extend the date for responses to the questions for consultation that are set out in Volume 5.

Volume 4 will now be restricted to describing our approach to assessing the scope for operating cost efficiency. Operating costs comprise a significant part of the customer's bill. In 2001, operating costs accounted for some 45% of a customer's bill. Good progress by Scottish Water in improving its efficiency will have reduced this to below 30% at the start of this regulatory control period.

1.1 Structure of this volume

Volume 4 is presented in five sections.

Section 1 is an introduction to costs, efficiency and establishing appropriate incentives. It comprises four chapters. Chapter 2 is an introduction to costs. It describes the costs that Scottish Water incurs in delivering water and sewerage services. Chapter 3 discusses how we seek to regulate costs and ensure that they are no higher than they need to be. Chapter 4 discusses incentives both for the organisation as a whole and for the senior management. We recognise that incentives are principally a matter for the owner and the Board of Scottish Water, but we believe that there is a legitimate customer interest in ensuring that these incentives are properly linked to the delivery of an improved service to customers.

Section 2 outlines the current position and describes how we set the baseline from which we measure an improvement in efficiency. This section contains two chapters. Chapter 5 explains the nature of operating costs. Chapter 6 describes how we establish the baseline and why this is essential to monitoring performance.

Section 3 describes in detail the process by which we compare the relative costs of Scottish Water with those of the companies south of the border. There are four chapters in this section. Chapter 7 discusses the importance of making like-for-like comparisons. This is fundamental to an objective comparison of costs. In Chapter 8 we outline the approach that is used by the Office of Water Services (Ofwat) to assess the scope for efficiency. This approach is tried and tested and has been endorsed by both the Competition Commission and the Cabinet Office. In Chapter 9, we outline some

alternative methods to assess the scope for efficiency. Chapter 10 is the final chapter in this section. It outlines how we take account of differences between Scotland and the areas covered by other water and sewerage undertakers in the UK.

Section 4 looks forward to the end of the next regulatory period. It considers what the relative performance of Scottish Water and of the companies south of the border is likely to be in 2010. The difference in relative performance will inform the efficiency targets that we set. There are three chapters in this section. In Chapter 11, we assess the scope for improvement in Scottish Water's operating cost efficiency. Chapter 12 explains how we will take account of the operating cost implications of the capital programme. Some of the investment should help to reduce operating costs, while improved treatment of sewage will tend to increase operating costs. It is important that Scottish Water has sufficient revenue to meet any efficient new operating costs that result from the capital programme. In Chapter 13 we discuss how we intend to handle Scottish Water's public/private partnership (PPP) obligations.

Section 5 has three chapters. It describes the setting of targets and the monitoring of operating costs. Chapter 14 explains how we will set targets. This is followed by Chapter 15, in which we seek views from stakeholders on whether we should set targets for the level of service provided by Scottish Water. The final chapter, Chapter 16, discusses how we propose to monitor and report on Scottish Water's performance during the next regulatory control period.

Section 1: Chapter 2

An introduction to costs, levels of service and benchmarking

2.1 Introduction

In Volume 2 we discussed the role of economic regulation, and examined our duty to promote the interests of customers of Scottish Water's core business. We do this by ensuring that customers get the best possible service for the lowest sustainable cost.

In this volume we set out the methodology we propose to use to assess operating costs and levels of service in the *Strategic Review of Charges 2006-10*.

This chapter provides an introduction to costs, levels of service and the role of price control regulation. It covers the following issues:

- How to define costs in order to establish what are Scottish Water's main costs;
- How to define levels of service, and what are the key indicators of good service;
- Costs and price-control regulation: why we are examining Scottish Water's costs; and
- Costs, levels of service and customers: why Scottish Water's customers should be concerned about costs and the service they receive.

2.2 Defining costs

2.2.1 What are Scottish Water's costs?

In 2003-04, Scottish Water spent £1,018 million. This expenditure was largely funded by £958 million of revenue from customers. Other sources of cash included an increase in net borrowing and proceeds from the sale of assets.

Scottish Water's costs can be split into five categories, as shown in Table 2.1.

Table 2.1: Scottish Water's costs¹

Cost category	2003-04	as % of total
Operating expenditure	£306m	30%
Capital expenditure	£389m	38%
Public Private Partnerships	£113m	11%
Exceptional items	£72m	7%
Interest payments	£137m	13%
TOTAL	£1,018m	

We discuss each of these cost categories below.

Operating expenditure

Operating expenditure comprises the costs incurred in the day-to-day running of the business. These costs include:

- staff costs;
- electricity and other utility costs;
- local authority rates and other taxes;
- the cost of billing and serving customers (including bad debt); and
- the cost of buying materials such as chemicals.

A simple analogy would be the costs of running a car. The money that the car owner spends on petrol, oil, insurance, taxes etc would be the operating expenditure for that car.

This volume focuses primarily on how we propose to assess the scope for efficiency in operating expenditure.

Capital expenditure

Capital expenditure is the cost incurred in looking after and improving the assets of the business. Scottish Water has a large number of assets that it uses to provide a water and sewerage service, including:

- water storage facilities;
- water mains;

¹ All costs reported for 2003-04 are from Scottish Water's Annual Report and Accounts 2003-04, 19 August 2004.

- water treatment works;
- sewers;
- sewage treatment works;
- pumping stations;
- offices and depots; and
- vehicles and IT equipment.

All of these assets must be maintained and, when the assets reach the end of their useful life, they must be replaced. Further, new assets are required to either improve or expand the service.

Capital expenditure is generally split into two elements:

- *Capital maintenance expenditure*: costs that are incurred on a day-to-day basis to ensure that assets remain in good enough condition to provide a safe and reliable service; and
- *Capital investment expenditure*: costs that are incurred on a one-off basis to enhance the asset base. Maintaining this enhanced level of service would then be regarded as a capital maintenance cost.

If we consider once again the analogy of running a car, the costs of servicing the car, replacing worn and damaged parts and, eventually, replacing the car would be classed as capital expenditure. The scope for capital expenditure efficiency will be considered in detail in Volume 5 of our methodology.

Public Private Partnerships (PPP)

Public Private Partnerships are a range of business structures and partnership arrangements between the private and public sectors. They are a mechanism to bring private sector involvement into the delivery of public sector services. An example would be where the private sector is contracted to construct and operate new facilities, for which the public sector then pays an annual fee. Delivering services remains the responsibility of the public sector organisation.

Currently, Scottish Water has the following types of PPP:

- Long-term contracts under the Private Finance Initiative (PFI) framework for 21 wastewater treatment plants that treat around half of Scotland's sewage; and
- A joint venture – Scottish Water Solutions – with private utilities and contractors to deliver capital investment.

Scottish Water has nine long-term contracts for sewage treatment services. It pays an annual fee that covers the operating, capital and financing costs of the private company.

To return to the analogy of running a car, the PPP contract would be the equivalent of paying a fee to lease a car over a fixed period where all of the responsibility for maintaining the car (keeping it filled with petrol etc) remains with the leasing company. PPP is considered in detail in Chapter 13.

Exceptional items

Exceptional costs are 'one-off' costs which, by definition, are not expected to recur. In the *Strategic Review of Charges 2002-06*, we recognised that Scottish Water would incur such one-off costs if it was to make the step-function improvement in its operating cost efficiency that customers had the right to expect. We therefore recommended that Scottish Ministers allow £200m to be included in Scottish Water's revenue caps to meet these "one-off" costs. We termed this "spend-to-save".

Our rationale for 'spend to save' was explained in the *Strategic Review of Charges 2002-06*:

"I have also included a very significant allowance within price limits for the cost 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 2005-06².

We anticipated two main areas where spend to save was likely to accelerate efficiency improvements:

- information technology; and
- voluntary severance.

Table 2.2 shows the £200 million of spend to save that we recommended Ministers allow price limits. We also report on the spend to save costs reported by Scottish Water in the first two years of the regulatory control period.

Table 2.2: Spend to save allowance

	2002-03	2002-03	2003-04	2003-04	2004-05	2005-06
	Strategic Review of Charges 2002-06	Actual	Strategic Review of Charges 2002-06	Actual	Strategic Review of Charges 2002-06	Strategic Review of Charges 2002-06
Operating expenditure	£40m	£25m	£85m	£53m	£25m	£0m
Capital expenditure	£15m	£17m	£35m	£19m	£0m	£0m
Total	£55m	£42m	£120m	£72m	£25m	£0m

Interest payments

Scottish Water's current total borrowing is around £2.2 billion. This borrowing is mainly fixed term, fixed interest rate government loans. Scottish Water pays interest on this debt; interest costs currently account for some 13% of annual expenditure.

We discussed Scottish Water's borrowing in Volume 2, Chapter 7 of our methodology.

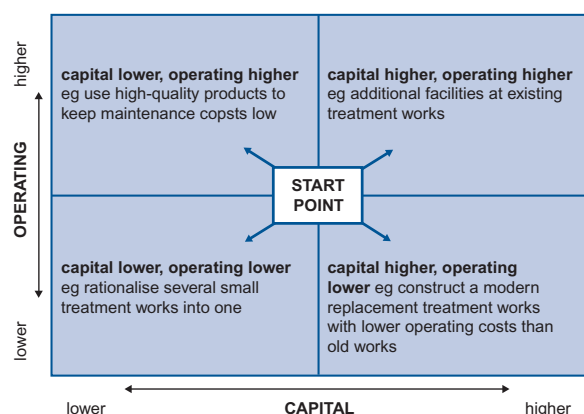
2.2.2 Operating and capital expenditure

Operating and capital expenditure are linked. Consider, for example, the addition of a new treatment process at an existing water treatment works. The new treatment process enhances the asset base, so the costs are capital investment expenditure. Investing in the new process is likely to result in an increase in the running costs of the water treatment works (for example, because of higher electricity or chemical costs). The operating costs of the water business therefore increase as a result of the capital investment.

Capital expenditure could also result in lower operating expenditure. A good example would be the introduction of an IT system that reduces the level of manpower required. The link between capital expenditure and operating costs is illustrated in Figure 2.1.

² Strategic Review of Charges 2002-06, p223.

Figure 2.1: Relationship between capital expenditure and operating costs



It can sometimes be difficult to allocate the costs of some activities to either operating or capital expenditure. It could reasonably be argued that some activities relate to maintenance of the asset or part of day-to-day operations. Oiling a pump at a water treatment works would be a good example of this.

We endeavour to define the rules for cost allocation with great care in our annual regulatory returns in order to avoid such potential issues. We have to be confident that Scottish Water has correctly allocated its costs. This is critical to our benchmarking of performance. The Reporter³ plays an important role in verifying that Scottish Water has complied with the definitions of the information required in our regulatory returns.

2.2.3 Accounting costs and actual expenditure

Effective benchmarking requires us to focus on Scottish Water's actual costs in providing a water and sewerage service. We are interested here in what Scottish Water spends each year on operating expenditure, capital expenditure, PPP, exceptional items and interest payments.

These costs will be different from Scottish Water's *accounting* costs. Accounting costs are the costs generally reported by a company in its annual accounts. Accounting costs include non-cash items such as depreciation, amortisation and the infrastructure renewals

charge. The accounting presentation of these costs can make them difficult to reconcile in detail with actual expenditure. We discussed accounting costs in Volume 3.

2.3 Defining levels of service

Effective benchmarking requires us not only to define costs carefully, but also to define the level of service provided to customers.

2.3.1 What are levels of service?

Most customers expect to:

- receive clean drinking water when they turn on their tap;
- see waste water disappear down the drain;
- receive a timely and accurate bill; and
- receive a prompt and reasonable response in the event that the service provided to them does not meet their expectations and as a result they complain.

There are a variety of measures that we can monitor to ensure that customers receive an appropriate level of service.

2.3.2 Measuring levels of service

It is important that we are able to measure levels of service to customers in an objective and consistent way both now and in the future. This requires us to set out in detail the areas of service that we will measure and how they will be measured. We need to ensure that we measure the factors which are important to customers and that customers can understand our analysis of customer service performance.

We monitor three broad aspects of service:

- asset performance measures;
- customer service measures; and

³ See Volume 2, Chapter 15

- public health and environmental performance measures.

Public health and environmental performance measures

Asset performance measures

Asset performance measures cover areas of service that depend on the water supply and sewerage infrastructure. Poor performance in these areas causes inconvenience to customers or damage to property. These measures indicate how reliable the service is. They cover:

- pressure – customers expect their supplier to provide a supply of water at a pressure that is sufficient for their needs;
- planned supply interruptions – customers expect the number of interruptions, the number of properties affected and the duration of the interruption to be as low as possible;
- unplanned supply interruptions – customers expect the number of interruptions, the number of properties affected and the duration of the interruption to be as low as possible;
- sewer flooding – customers expect the number of properties affected and the number of properties at risk to be as low as possible.

Customer service measures

Customer service measures cover areas of service that depend on the management and employees of the organisation and the processes they use. They do not depend on the quality of water mains or treatment plants.

Customer service measures cover:

- billing enquiries – the number of billing enquiries and the speed of response;
- written complaints – the number of written complaints, and the speed and quality of response; and
- telephone contacts – the number of telephone contacts, and the speed and quality of response.

Public health and environmental performance measures cover areas of service that relate to the service provider's ability to comply with the requirements for quality standards. These standards are set by the respective quality regulators, DWQR⁴ and SEPA⁵. These measures include:

- meeting drinking water quality standards;
- complying with abstraction consents for rivers;
- complying with discharge consents at waste water treatment works; and
- the number of pollution incidents.

These measures cover many of the public health and environmental issues that matter most to customers either directly – for example, by measuring drinking water quality – or indirectly – for example, by measuring coastal pollution.

2.3.3 Guaranteed Minimum Standards (GMS)

We agreed the introduction of GMS for the Scottish water industry in October 2000. These are the minimum standards of service that Scottish Water must meet, and which customers have a right to expect. Failure to comply with any of the standards entitles the customer to financial compensation.

The GMS are:

- **planned interruptions** – give 48 hours notice of a planned interruption likely to last more than four hours and restore supply within the stated time;
- **unplanned interruptions** – restore supply within 12 hours of an unplanned interruption (or within 48 hours for a trunk main);

⁴ DWQR – Drinking Water Quality Regulator – www.dwqr.org.uk

⁵ SEPA – Scottish Environment Protection Agency – www.sepa.org.uk

- **following an internal sewer flooding incident** – visit within 3 hours and solve the problem within 8 hours, clean up the mess and refund annual sewerage charge;
- **payment enquiries** – respond to a request to change the method of payment within 5 working days, and to other billing, charging and metering enquiries within 10 working days; and
- **complaints** – respond fully in writing to a written complaint, or to a telephone complaint where a written response is requested, within 10 working days.

Clearly, the GMS do not cover every situation in which poor levels of service arise. We regard Scottish Water's performance with respect to the GMS as important. However, we believe that the broader indicators of service levels described above provide a fuller picture of the service that customers receive.

2.4 Costs and price-control regulation

2.4.1 Why we examine Scottish Water's costs

In May 2004, the Minister for the Environment and Rural Development wrote to ask us to conduct a Strategic Review of Charges covering the period 2006-10. In preparing the Review, the *Water Industry (Scotland) Act 2002* states that as Water Industry Commissioner I should have regard to:

- “(3)
- (a) *the economy, efficiency and effectiveness with which Scottish Water is using its resources in exercising its core functions,*
 - (b) *the likely cost to Scottish Water, for the period of the advice, of exercising the functions specified in subsection (4),*
 - (c) *the likely resources, other than income from charges for goods and services, available to Scottish Water for the period of the advice,*

(d) *any guidance issued to Scottish Water by the Scottish Ministers, and*

(e) *any directions given under section 44 or 56.”*

Our work in scrutinising costs and the levels of service delivered is key to our role in ensuring that customers receive value for money. We believe that our analysis will ensure that we have had regard to *“the economy, efficiency and effectiveness with which Scottish Water is using its resources”*.

In assessing the scope for efficiency, we have to answer two questions:

- (1) How do we have regard to *“the economy, efficiency and effectiveness with which Scottish Water is using its resources”* when providing advice on charges?
- (2) How do we ensure that Scottish Water improves *“the economy, efficiency and effectiveness with which [it uses] its resources”* during the price control period?

Our analysis is in three parts:

- **Is Scottish Water proposing to use its resources effectively?**

In its business plan submission⁶, Scottish Water will propose levels of expenditure for operating costs, capital maintenance, capital investment and PPP over the regulatory control period. This analysis will, in essence, require us to make a judgement about whether Scottish Water is spending enough money (or too little money), on the right things (or on the wrong things) to deliver a good enough (or not good enough) service to its customers.

For example, a new treatment works may be required to meet legislative requirements but the proposed new works may have inadequate capacity or include treatment processes that are not required.

⁶ See Volume 2

Alternatively, the construction may be completed prior to the legislative requirement coming into force, or too late to meet the legislative deadline.

- **Is Scottish Water proposing to use its resources efficiently?**

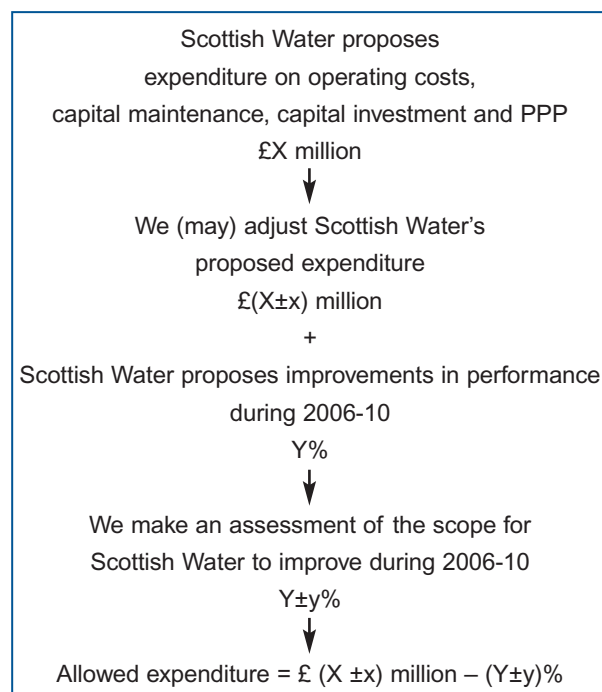
This analysis will require us to make judgements about how well Scottish Water spends its money. For example, we will need to decide whether money needs to be invested (for example, in constructing a new treatment works to meet legislative requirements), and whether or not the proposed cost of constructing the works is correct, too high or too low.

- **Is there scope for Scottish Water to use its resources more efficiently?**

This is the forward-looking part of our analysis. The previous part considered how wisely Scottish Water spends its money now; here we consider how wisely Scottish Water could spend its money in the future. This requires making an assessment not only of the *amount* by which Scottish Water could improve, but also the *rate* at which that improvement can be realised.

This analysis allows us to come to a view on *“the economy, efficiency and effectiveness with which Scottish Water is using its resources”*. This process is summarised in Figure 2.2.

Figure 2.2: How we arrive at allowed expenditure



2.5 Costs, levels of service and customers

Customers deserve value for money. In setting prices we draw robust and objective comparisons with other water and sewerage undertakers. We can set prices such that Scottish Water has to deliver the lowest possible level of costs consistent with a sustainable industry. Our monitoring can help ensure that Scottish Water does not seek to cut corners in the level of service provided to customers.

Customers should therefore be assured that, if Scottish Water performs in line with the targets set by this Office, they will receive value for money.

Section 1: Chapter 3

Types of regulatory frameworks

3.1 Introduction

In Chapter 2 we explained the costs that Scottish Water incurs and the impact of these costs on customers bills. We described what we mean by 'efficient costs' and the importance for customers of making sure that Scottish Water achieves the targets we set for cost reductions.

As the economic regulator of Scottish Water, one of our principal responsibilities is making sure that customers receive value for money. Regulating costs and giving proper incentives to Scottish Water to achieve its efficiency targets therefore lies at the core of our role. It is essential for customers that the regulatory framework in Scotland provides strong incentives to Scottish Water to achieve cost efficiencies and to meet – and even to outperform – the regulatory targets.

In Chapters 3 and 4 we discuss the mechanisms by which regulators can incentivise companies to achieve efficient costs. In this chapter we look first at why regulation is necessary in monopoly businesses and describe the different types of incentive-based regulation that can be used to drive companies to achieve cost efficiencies.

This chapter expands the introduction to regulation that we provided in Chapter 1 of Volume 2. In Chapter 4 we go on to discuss efficiency incentives and how they work in both private and public companies. Chapter 4 also looks at the framework for regulating Scottish Water's costs and the incentives that are in place to ensure that the efficiency targets set in the *Strategic Review of Charges 2006-10* are met.

3.2 The role of regulation in driving efficient costs

We have already highlighted how important it is for customers that Scottish Water becomes more efficient. In most industries, pressure to reduce costs and achieve efficiencies is driven automatically by competition from other providers of the goods or services. Competition not only helps to keep prices down, but also drives improved levels of service. Customers have the choice to buy from other suppliers if they perceive that the

prices and quality of service offered by a company are not right. If a company does not offer its goods or services at the right price and quality, it will not retain its position in the market.

In a number of industries, however, there is only a single provider of goods or services and monopoly power dominates. Many of these monopolies are so-called 'natural monopolies' where it is impractical or uneconomic to duplicate the infrastructure required to deliver the goods or service. Utility network businesses are an example of natural monopolies because it would be both prohibitively expensive and impractical to have more than one network supplying water, gas or electricity services to properties.

In these industries, alternative mechanisms are required to replace competition and ensure that there are incentives for cost efficiencies and service improvements. Otherwise, in order to maximise profits or pursue other management objectives, the natural monopoly may exploit its power over customers by charging an unreasonable price and/or offering poor services.

Control of natural monopolies is usually achieved by some form of regulation that acts as an alternative to a competitive market. The regulator ensures that the monopoly:

- restrains prices, by setting price or revenue limits; and
- delivers acceptable levels of customer service, either by setting appropriate customer service targets, or by monitoring the level of customer service provided.

A principal role of regulation is therefore to act, in the customer's interest, as a surrogate for competition.

Regulation is not a perfect substitute for the market. It does, however, provide customers with significant protection against monopoly power. Introducing competition to limited areas of a monopoly business, where practical and economically justifiable, can bring additional benefits for customers.

In Scotland, Scottish Water is a natural monopoly in the provision of water and wastewater services. The role of

our office, as economic regulator, is to incentivise Scottish Water to achieve efficiencies and improve customer service. At a high level, we do this by setting targets for Scottish Water that are challenging but achievable.

At a more detailed level, various regulatory mechanisms are available to incentivise natural monopolies such as Scottish Water. In the following section, we will briefly explain the most common regulatory frameworks. We will focus on the 'RPI-X' mechanism which is favoured by this Office and most utility regulators. We propose to adopt the RPI-X framework. We will also discuss the advantages and disadvantages of the alternatives that we have considered.

3.3 Providing incentives through regulation

The key attributes of a successful incentivisation mechanism are that it:

- drives management to achieve cost efficiency targets;
- ensures that customer service levels improve at the same time;
- is relatively simple to implement; and
- provides transparency to all stakeholders of a company's performance.

The choice of mechanism that best achieves these objectives may be influenced by the nature of the industry being regulated. For example, applying incentives to management in a public sector industry may be different to incentivising private sector management¹. In considering different approaches, it is important to emphasise that no single model is best for all circumstances.

3.3.1 The most common forms of regulation

There are five main regulatory models:

- cost-of-service regulation;

- price cap regulation;
- yardstick regulation;
- performance based regulation; and
- franchise regulation.

Cost-of-service regulation

In the cost-of-service regulation model, the regulator sets the return that can be earned on investment by companies. This enables a company to recoup, at a set rate, the costs and investments that it has put in to provide the services. The most common form of cost-of-service regulation is 'rate-of-return' regulation. Under the rate-of-return model, details of the company's costs are provided to the regulator and an allowed rate of return is then applied to these costs. Customers then fund the company up to the allowed rate of return.

The main advantage of cost-of-service regulation is that it is a relatively simple process that provides transparency to stakeholders. Regulated companies also have a clear understanding of the return they will earn on their investment. This helps with long-term planning and provides security for investors.

A key disadvantage is that it is very dependent on the information that the company provides on costs. Private, profit maximising companies will naturally seek to inflate the presentation of their costs to the regulator. As the information is asymmetric (in other words, the company will always have access to more detailed information than the regulator), it can be difficult for the regulator to detect inflation of costs. As a result, customers can lose out because the true extent of the cost efficiencies that are available is hidden.

Cost-of-service regulation also provides a strong incentive for companies to over-invest in order to maximise their returns. This can result in 'gold-plating' of investment, where projects and services are provided to a specification that exceeds customers' requirements.

¹ Incentives in public and private companies are discussed in more detail in Chapter 4.

Price cap regulation

In its simplest form, price cap regulation sets the maximum prices that companies can charge for their services for a period of years in advance. This then incentivises companies to improve their efficiency because, in order to maximise profits, they have to drive down costs. If the price cap is set properly, both customers and regulated companies will benefit from the improved efficiency.

One common form of price cap regulation is 'RPI-X'. Under RPI-X, the company is allowed to raise prices in line with the Retail Price Index (RPI) less an efficiency factor, X. This efficiency factor is determined by the regulator. Different industries, and different countries, have their own formulae for calculating the X factor.

Price cap regulation is now used by all UK regulators of privatised public service industries. It is generally considered to be successful in encouraging companies to improve their efficiency. A detailed description of the features of the form of price cap regulation used in UK utility industries is provided below.

The main advantages of price cap regulation are the relative simplicity of the approach and the strong incentives provided to management to introduce cost efficiencies in order to increase profits. Management are given a free hand to determine how these efficiencies are best delivered; this encourages innovation and the introduction of new practices.

One disadvantage of the RPI-X approach is the potential incentive to focus on short-term gain rather than long-term sustainability of the industry. For example, when investing in new projects a short life solution with low up-front costs may be favoured over a long-life solution with high up-front costs but lower whole-life costs. The choice of regulatory period over which prices are set is important in this regard. Longer regulatory periods can help to encourage greater focus on long-term solutions.

Yardstick regulation

Yardstick regulation (sometimes called comparative regulation) is usually used in conjunction with other regulatory mechanisms such as rate-of-return and price cap regulation. Yardstick regulation involves comparing the performance of a company with that of other companies within the same industry. Through these comparisons, the regulator is essentially aiming to simulate a competitive environment. The best-performing company provides a benchmark of best practice for the industry and the regulator can set targets accordingly.

A key advantage offered by yardstick regulation is that the problem of asymmetry of information between the company and the regulator can be significantly reduced. This is because regulators can obtain standard information submissions from a number of different companies and, by analysing this information, can develop a clearer picture of costs and performance.

The main disadvantage can be the complexity of carrying out performance comparisons between companies and the associated requirement to obtain large amounts of information to support the analysis. The method is also very dependent on comparator companies being available, and this can be a problem when industry structures change, for example through mergers and acquisitions.

Performance based regulation

Under performance based regulation, a set of performance measures are used to incentivise the regulated company. Generally, this involves linking the profits of the regulated company to performance measures in such a way that its profits are only permitted to increase if it achieves the defined performance targets. The company therefore has a strong incentive to meet the targets set.

The main advantage of this type of regulation is that the performance of the company can be incentivised across a wide range of measures. As well as efficient cost targets, areas such as customer service performance, environmental impact and safety performance can also be targeted.

The main disadvantage of performance based regulation is that, to be effective, the performance measures have to be defined and measured in an objective and very accurate way. In practice, it can be difficult to define a set of measures that do not give conflicting or undesirable incentives. The measures also need to be entirely within the company's control. In service industries such as utilities this can be difficult to achieve due to the presence of multiple stakeholders who can influence the outcome of performance measures. In the water industry, for example, in addition to customers, stakeholders include local and national government, environmental regulators and water quality regulators.

Franchise regulation

Under franchise regulation, the regulator invites companies to bid for the right to provide services to the public. The company that offers the best price-quality package wins the bid and will contract to provide the services at a certain price and to a defined quality standard.

The main advantage of franchise regulation is that it brings together the benefits of competition with the economies of scale associated with natural monopolies. It is relatively straightforward to implement and there is no requirement for a large amount of information analysis by the regulator: the bidding process identifies the best price-quality package for customers.

Potential disadvantages of franchise regulation include the complexity of identifying the best price-quality combination, establishing the contract for the provision of services, ensuring incentives are maintained during the transition between service providers, and potential difficulties in attracting new bidders at the contract renewal stage.

The incentive qualities of RPI-X seem most appropriate to the current relative efficiency position of the water industry in Scotland.

Regulatory mechanisms used by utility regulators in the UK

In the UK, the RPI-X form of price-cap regulation is used by the utility regulators to set price limits for companies.

It is generally agreed that the RPI-X approach, combined with comparative (or yardstick) regulation to assist with target setting, is successful in encouraging utilities to pursue continuous efficiency enhancement and keep prices down. For instance, in the electricity distribution market in the UK, since privatisation of the industry in 1991, operating costs of the electricity distribution network operators have fallen by more than 30% in real terms².

*The National Audit Office (NAO) 'Pipe and Wires'*³ report looked at the risks of the RPI-X approach as applied by Ofwat, Ofgem and Ofel. The NAO concluded that the three regulators, using RPI-X regulation, had been successful in encouraging companies to deliver the required investment in networks while also driving improvements in efficiency. The benefits of these efficiency improvements had been passed on to customers.

Because of its extensive application in the UK, the RPI-X approach is widely understood by regulators, regulated companies and financial institutions. Using RPI-X regulation in Scotland will allow more direct comparison with the industry in England and Wales. This is important as it is through benchmarking the performance of Scottish Water with other water companies that we can determine the extent of efficiencies that are possible.

In the following section, we describe the RPI-X approach in more detail.

3.3.2 RPI –X regulation

The mechanism for driving cost efficiencies through RPI-X regulation essentially involves setting a limit on prices that companies can charge to customers, then

² Ofgem, 'Electricity Distribution Price Control Review Update', October 2003.

³ National Audit Office, 'Pipes and Wires', 10 April 2002.

allowing the companies to devise how to deliver the service at least cost while meeting customer service targets.

The utility is allowed to increase its price every year by X points less than the RPI in the previous year. As explained later, in certain industries such as the water industry in England and Wales, X can be negative which makes the annual price increment above RPI. For example: in the draft determination of price limits for the 2005-10 regulatory control period, Ofwat allowed each company to raise its prices above the expected rate of inflation.

Developed by Professor Stephen Littlechild, the RPI-X methodology was introduced in the early 1980s to regulate the newly privatised British Telecom. Professor Littlechild argued that a price cap would provide desirable incentives for regulated firms to achieve and improve operational efficiency while reducing the information burden of regulation.

RPI-X has subsequently been used in regulating all other privatised utilities in the UK: the gas industry in 1986, the airports (BAA) in 1987, the water industry in 1989, the electricity industry in 1991 and the railway industry in the mid 1990s.

The RPI-X mechanism can be divided into the following key elements:

1. The regulator, based on the companies' business plans and an assessment of the company's performance against other benchmark companies, establishes the required revenue. As a key principle, the required revenue should be sufficient to enable the company to finance its operations in each year of the regulatory period; in other words, the company must have sufficient funds to deliver its operational services, its investment programme and the required level of customer service. In establishing the required revenue, the regulator will take account of factors such as:

- the degree of efficiency improvement that is achievable (from consideration of the benchmarked level of efficiency and an achievable rate of catch-up);
- the return on capital which investors in the industry would expect;
- tax obligations which the company will incur; and
- other factors which influence costs, eg changes in pension funding requirements.

2. Based on the required revenue and the estimated revenue base (for example the projected number of customers), a price cap can be established.

Rather than being applied to all of the individual services provided by the company, the price cap is usually applied to a weighted average of the price increase of all of the regulated services. This avoids the complexity of trying to set a price limit for all the individual services. We outlined the setting of tariffs, and our proposed use of tariff baskets, in Volume 3, Chapter 12.

If the regulated company faces competition in certain elements of its service, for example in providing new connections to the network, then prices for those elements are not subject to price cap regulation and these services are excluded from the calculation of required revenue.

3.3.3 Use of RPI-X regulation in the water industry in England & Wales

To illustrate how a price cap is set under the RPI-X framework, it is useful to analyse Ofwat's RPI-X formula⁴.

In its 1999 periodic review, Ofwat set out its price cap formula as follows:

Price cap = RPI – (P₀ + X + Q ± V ± S) where:

⁴ Sources: Ofwat, MD 124, *Letters to all managing directors of water and sewerage companies and water only companies*, February 1997; Ofwat, *The proposed framework and approach to the 1999 periodic review: A consultation paper*, June 1997; and Ofwat, *Setting price limits for water and sewerage services: The framework and business planning process for the 1999 periodic review*, February 1998.

P_o represents past outperformance of the target by the company and the 'one-off' cost reduction to be transferred to customers in the first year of the following period. It reflects the difference between the actual operating and capital expenditure achieved by the company and the regulatory targets set in the previous period. By deducting the outperformance from RPI in the price cap, Ofwat transfers the current period outperformance to customers in the coming period. This P_o element also reflects the voluntary benefit sharing schemes implemented by some companies.

X is the expected future efficiency gains after the first year of the period. To determine the scope of future efficiency gains, Ofwat examines:

- the past achievements of the company;
- the achievements of other water companies;
- achievements of other utilities and the wider economy; and
- the company's current progress in reaching its efficiency objectives.

For example, high levels of leakage is considered as a measure of inefficiency. A company should demonstrate to Ofwat its knowledge of its economic level of leakage and its progress on working towards the new leakage targets. By assessing the company's current progress, Ofwat will set new leakage targets for the company.

Comparisons between company performances are made using 'econometric analysis'. This detailed method of analysis compares different companies' costs across a wide range of activities. We will return to these activities in Chapter 8.

As past achievements are considered when X is set, P_o and X are interrelated. Companies that have achieved greater efficiencies than anticipated at the last review will have a relatively higher P_o adjustment than those which did not. However, future targets for efficiency will

be set relative to the achievements of the most efficient companies. This implies that the future X factors will be commensurately higher for the relatively inefficient companies than for the efficient ones.

Q represents the expenditure needed for the companies to meet their water quality and environmental obligations enforced by the Drinking Water Inspectorate (DWI) and the Environment Agency, the drinking water quality and environmental regulators respectively. Where companies have failed to deliver the outputs specified in previous periods, adjustments are made to ensure that companies do not gain financially.

V represents enhancements to the security of supply associated with maintaining a balance between water supply and demand. In the 1994 price review, Ofwat argued that expenditure to maintain the balance between supply and demand should not be built into the price cap formula due to its relatively insignificant impact on price. However, the hot and dry summer in 1995 raised discussion on the need to widen the margin between supply and demand to increase the security of supply. Some companies have incurred significant expenditure on increasing supply security. Consequently, an additional component V was built into the formula in the 1999 review. This V element can be negative where companies sell surplus water resources to neighbouring companies.

S represents the allowance made for improvements to service levels such as water pressure and call centre performance, which have measurable outputs and defined delivery times.

For simplification, the components $P_o + X + Q \pm V \pm S$ are summed up to a single factor called 'K'. In publications and publicity materials, companies often refer to the K factor as the adjustment made to the average bill after inflation has been taken into account.

Ofwat proposes to use the same RPI-X formula in the 2004 periodic review.

3.4 Summary

Regulation acts as a surrogate for competition in monopoly businesses. The regulatory mechanism plays a fundamental role in driving cost efficiencies in regulated companies. It achieves this by incentivising management to drive down costs while maintaining standards of service.

There are a number of regulatory mechanisms. In the utility industries in the UK, price cap regulation based on the RPI-X approach is the mechanism favoured by regulators. It has already proved very successful in encouraging utilities to pursue continuous efficiency enhancement and keep prices down.

In the next chapter we look in detail at how incentives work and the difference between incentives in the public and private sectors. In particular, we examine the effectiveness of the RPI-X approach and its application in the Scottish water industry.

3.5 Question for consultation

1. Do stakeholders agree that the RPI-X framework is appropriate to the regulation of Scottish Water? If not, what alternative would you suggest and why?

Section 1: Chapter 4

RPI-X incentive framework and benefit sharing

In this chapter we outline how the incentive framework of RPI-X works and the benefits it brings to customers. We examine the effectiveness of RPI-X (price cap) regulation in providing incentives to monopoly businesses in the private and public sector. In particular, we seek views on whether the incentive framework should be applied to Scottish Water.

4.1 Important attributes of efficiency incentives

Incentives are used to encourage desirable behaviours and/or discourage undesirable behaviours. In the context of regulated utilities, incentive regulation has been defined as the “use of rewards and penalties to induce the utility to achieve desired goals where the utility is afforded some discretion in achieving goals.” (Lewis and Garmon (1997)¹). In the case of the water industry, the “desired goals” would include:

- keeping prices to customers as low as possible;
- meeting environmental and water quality objectives;
- delivering the required investment programme;
- maintaining the long-term sustainability of the industry; and
- meeting customer service targets.

As we discussed in Chapter 3, there are a number of regulatory mechanisms which have the potential to achieve these high level objectives. It is, of course, important that the regulatory framework meets the wider requirements of customers and industry stakeholders. As part of its 2004 price review², Ofwat listed the general criteria that it considered should apply for incentive mechanisms. Ofwat stated that the mechanism should:

- be in the long-term interests of customers;
- offer meaningful and worthwhile rewards for genuine outperformance;

- offer adequate penalties for underperformance;
- provide timely rewards and penalties;
- stimulate continuous improvements;
- be known in advance;
- be straightforward in concept;
- follow simple rules;
- be simple to apply; and
- avoid retrospective changes.

We believe that these criteria are as relevant to the public sector as to the private sector water industry. Later in this chapter we discuss how incentives for public sector companies may need to differ from those used in the private sector.

4.2 Incentives and price-cap RPI-X regulation for utilities

In the previous chapter we explained that we propose to follow the other UK economic regulators and use RPI-X regulation to incentivise companies to improve efficiency. We now consider:

- how RPI-X regulation incentivises companies; and
- the extent to which RPI-X regulation, applied to utilities, meets the criteria outlined above for good incentive mechanisms.

4.2.1 How RPI-X incentivises companies

Under the RPI-X framework, companies benefit when they perform better than the efficiency targets set by the regulator. They are able to take advantage of the difference between the cost target the regulator has set and the cost level that they are able to achieve. The

¹ Lewis, Tracy and Chris Garmon, 'Fundamentals of incentive regulation.' PURC/World Bank International Training Program on Utility Regulation and Strategy, June 1997.

² Ofwat, 'A further consultation on incentive mechanisms: Rewarding future outperformance and handling underperformance of regulatory expectations', June 2003.

company therefore has an incentive to reduce costs to the lowest sustainable level. This is because the outperformance of the regulatory target (the resources allowed, less the resources actually used to deliver the required level of service) can be redirected to other company initiatives. In the private sector, this could take the form of additional shareholder returns. In the public sector, these additional resources could finance non-core activities or additional investment in improving customer service.

Customers benefit in the medium to long term because the regulator is able to set prices at a lower level in future regulatory control periods to reflect the lower costs of the regulated organisation. In the next regulatory control period, the regulated company will have to work harder to outperform the target. Similarly, there are strong incentives not to exceed regulatory targets as prices to customers are capped and any shortfall in funding has to be met by the owners of the company.

Broadly speaking, cost reductions can be achieved from:

- operating expenditure savings through more effective management; and
- more prudent and efficient capital investment.

Operating expenditure

In setting a target for operating expenditure, the regulator takes into account the revenue required to finance the company's ongoing operations. This assessment is based on factors such as:

- the company's business plan, which is submitted as part of the regulatory process;
- the degree of efficiency improvement that is achievable (from consideration of the benchmarked level of efficiency and an achievable rate of catch-up);
- tax obligations which the company will incur;

- the impact of the capital investment programme on operating costs;
- other factors which influence operating costs, such as new health and safety legislation.

There is a risk that a company might seek to save money by offering an inferior service: for example by repairing leaks more slowly or providing a lower standard of water treatment or by allowing more frequent failures of environmental standards. Regulators therefore monitor and report on the levels of service provided to ensure that the cost savings being made by the company are sustainable and will benefit customers. We made it clear in the *Strategic Review of Charges 2002-06* that an 'efficiency' means providing the same service for less money.

Customers' interests in Scotland are safeguarded through scrutiny by this Office of the nature of any efficiencies made by Scottish Water, along with close monitoring by the Drinking Water Quality Regulator (DWQR) and the Scottish Environment Protection Agency (SEPA) of Scottish Water's performance in meeting water quality and environmental standards. The Water Customer Consultation Panels also monitor customer service issues.

As prices are reset at the beginning of each regulatory control period, this creates a new incentive to improve efficiency further. Only such an improvement in efficiency will ensure that the allowed rate of return is exceeded or, in the public sector, that funds are available for non-core initiatives or to improve customer service further. The incentive to improve efficiency is a major benefit of RPI-X regulation.

There are, however, potential flaws in the RPI-X mechanism. For example, in its report *'Information and incentives project: Incentive schemes – initial thoughts'*³, Ofgem stated that companies' behaviour seemed to be affected by the timing of the price control reviews. They believed that companies advanced operating cost savings and delayed capital expenditure within a regulatory period. Ofgem also suggested that

³ Ofgem, *'Information and incentives project: Incentive schemes – initial thoughts'*, January 2001.

companies did not have an ongoing incentive, once regulatory targets had been met, to achieve further cost savings and service level improvements.

Regulators such as Ofwat and Ofgem have therefore introduced a 'rolling incentive mechanism' to encourage companies to continue to improve performance. We discuss "rolling incentives" in more detail later in this Chapter.

A second issue with the RPI-X incentive is that the scope for efficiency improvement will reduce over time. As the scope for efficiency reduces, the incentive effect of RPI-X regulation will also reduce. This is because the potential benefit of outperformance is small, relative to the difficulty of achieving that outperformance. Later in this Chapter we outline how Ofwat has proposed to maintain the incentive properties of RPI-X when the scope for significant improvement in efficiency has reduced.

Capital expenditure

Water companies have continuing large investment programmes. The incentive to improve the efficiency of capital investment is therefore just as important as reducing operating costs. RPI-X creates an incentive to improve the efficiency of capital investment by allowing an increased cash return on the regulated capital value (RCV). The concept of regulatory capital value was discussed in Section 3 Chapter 5.

i) Cash return on RCV

This is the cash return allowed on the RCV of the companies' regulated assets.

In its business plan, the company outlines its planned capital expenditure. The regulator evaluates the plan and estimates the annual amount of capital expenditure required to meet the service levels that the company is required to deliver. In the water industry these would include meeting the standards for customer service, water quality improvements and environmental legislation.

The other element of the cash return on the RCV is the allowed rate of return. This is fixed by the regulator after he has taken account of the likely efficient financing costs of the regulated organisation.

With both the rate of return on capital and the annual capital expenditure fixed by the regulator, the annual return on capital is therefore also fixed.

If the company can invest more efficiently, it can retain the value of the difference during the regulatory control period between the actual capital expenditure and that allowed by the regulator. This creates a strong incentive for the company to deliver its capital programme as efficiently as possible.

ii) Impacts on operational costs

Capital expenditure can also reduce operational costs. For example, operating cost savings will come from replacing a worn-out pump that requires a lot of manual intervention with a modern unit that requires little maintenance.

This is a further incentive for companies to manage their capital investment in such a way that overall costs are reduced.

iii) Cap on the capital expenditure that can be included in the RCV

A potential issue with the calculation of the cash return on the RCV is that it could provide an incentive for a regulated organisation to invest inefficiently. Ofwat responded to this risk in the 1999 periodic review by placing a cap on the capital expenditure that could be included in the RCV during the regulatory control period.

There is a risk that such a cap could cause companies to defer essential capital investment. This could put customer service levels at risk. Ofwat is refining the rule⁴ and has proposed that the amount of capital expenditure that can be excluded from RCV should be capped at 10% of regulatory revenue. This is known as the 'service-capping rule'. Any over-investment beyond the 10% threshold would earn the normal rate of return.

⁴ Ofwat, 'A further consultation on incentive mechanisms: Rewarding future outperformance and handling underperformance of regulatory expectations', June 2003.

4.2.2 An assessment of RPI-X against the general criteria of incentives

It is useful to compare the RPI-X mechanism against the criteria that we set for an effective incentive framework.

Table 4.1: Criteria for an effective framework for incentives

Criteria	How well does RPI-X fit the criteria?
In long-term interests of customers	Good. It is widely agreed that RPI-X works well in incentivising firms to improve efficiency in operation and investment. There are risks that firms may seek to cut corners in service delivery, but proper scrutiny from regulators and customer committees should reduce this risk.
Meaningful and worthwhile rewards for genuine outperformance	Good. Regulated companies in the UK have improved their efficiency. This suggests that regulated firms believe the benefits to be worthwhile. The context of 'rewards' for a public sector company may be different. We discuss this in Section 3.5.
Adequate penalties for underperformance	We are not aware of any evidence showing the penalties for underperformance to be inadequate.
Timely rewards and penalties	Acceptable. A regulatory period of four to five years ensures that the incentive framework can reward (or penalise) managers who are responsible for outperformance (or underperformance). The period is not so long that there is an inordinate delay in transferring the benefit to customers.
Stimulate continuous improvements	Good. This can be further enhanced by implementing a rolling incentive mechanism.
Known in advance	Good. The targets for the regulatory period are set out in advance. The mechanism is well understood by all stakeholders.
Straightforward in concept	Good. The concept is relatively straightforward. Companies are motivated to meet and beat the targets set by the regulator.
Simple rules	Acceptable. In its initial form, simplicity was one of the merits of the framework. However, the rules have inevitably become increasingly complicated.
Simple to apply	Acceptable. No new information, which is not already collected either during the initial price-setting or through ongoing monitoring, is required. The rules are well documented.
Avoid retrospective changes	The incentive framework relies on consistency and transparency. These are two of the Better Regulation Task Force Principles that we have adopted.

4.2.3 Issues with RPI-X as an incentive mechanism

There has been widespread scrutiny of RPI-X regulation by academia, industry experts and regulators. Commentators have raised issues regarding the incentives created by RPI-X.

i) Long-term versus short-term incentives

Some academics, for example Dr Dieter Helm⁵, have suggested that RPI-X promotes short-term planning by

utilities instead of encouraging the long-term investment planning that could sustain efficiency improvements and would be more beneficial to customers.

It is true that RPI-X was originally intended to apply to a longer regulatory control period. Longer regulatory control periods would enable companies to plan operations and capital investment on a longer-term perspective.

In practice, forecasts of future operating costs and investment requirements were too high and efficiency targets were set too low. This penalised current customers.

Ofwat has conducted a price review every five years. This has the advantage that operating costs and investment projects can be more carefully scrutinised. Current customers are likely to benefit from lower bills. However, it is possible that the lack of a certain future revenue stream could encourage a company to avoid longer term commitments and seek short-term solutions, which may increase costs over the long term.

This creates a dilemma. Should regulators pursue long-term price stability and transparency to incentivise companies to make long term investments? Or should shorter term targets be set to ensure that the targets remain appropriate and that customers receive maximum benefit from efficiency savings? Would companies make such long-term improvements given the relatively short-term performance horizon of the providers of finance?

Our view is that there needs to be a balance between short and long-term pressures. It is important to both customers and to the service provider that we are clear about the long-term prospects for prices. It is equally important, however, that there is a current pressure to deliver value for money to customers. On balance, we believe that RPI-X does work in the customer interest. If The regulator monitors service levels and asset condition and performance effectively, he can reduce the risk that a company seeks short term benefits and stores up problems for the future.

⁵ Dr Dieter Helm, 'Memorandum on environment, food and rural affairs' submitted to the UK Parliament, 17 October 2003.

ii) Consistency of regulation

In order to work properly, the regulated company must believe that, under the RPI-X mechanism, the company will be allowed to retain the benefits of outperformance. In the early years of RPI-X, there are examples of regulators resetting price caps shortly after they had been agreed. For example, in 1994 Offer (the electricity regulator) revised price caps for the electricity companies within a year of agreeing a five-year revenue settlement. Similarly, Ofwat initiated an interim determination in 1991 which resulted in a reduction in the price caps that the water companies in England and Wales had received at privatisation.

There were good reasons for these changes but such revisions inevitably weakened companies' confidence in regulators' commitment to keeping to the agreed price settlement. This had a negative impact on the incentive to reduce costs.

In recent years, utility regulators in the UK have generally avoided initiating changes to the price settlement in between regulatory reviews. However, requests by companies for interim determinations have increased. Under this process, the company asks the regulator to review the price settlement to take account of specific factors that have changed since the regulator's original assessment. Interim determinations were discussed in Volume 3, Chapter 11.

iii) Conflicting regulatory objectives

Utility companies may be subject to regulation by more than one agency. It is therefore possible that the incentives driven by the economic regulator through the RPI-X mechanism could conflict with the requirements set by other regulatory agencies. This is clearly undesirable for companies and would not benefit customers.

In Scotland there are three main regulatory bodies: this office, covering economic regulation; the DWQR, covering drinking water quality standards; and SEPA, covering environmental standards. Scottish Water's required revenue is affected by both water quality and environmental standards.

In Scotland, the water industry investment programme is defined in the Quality and Standards process. This process is discussed in detail in Volume 5. It involves a collaborative and consultative approach to determining investment priorities, led by the Scottish Executive and involving the three regulators and Scottish Water. The final decision on investment priorities is taken by Scottish Ministers.

The Quality & Standards process therefore ensures that there is a single, common understanding of the objectives of the investment programme.

iv) Requirement to define clear performance measures

RPI-X regulation provides clear financial targets and incentives for companies. Other targets, such as customer service levels and the physical delivery of projects are not, however, defined in the mechanism. To safeguard customers' interests, regulators carefully monitor levels of service and the delivery of investment.

If regulators did not monitor and report on performance, companies might focus on cost reductions and allow the level of service to decline. For example, the Office of the Rail Regulator reacted to concerns about under investment by seeking to define more clearly the outputs that the rail track company was expected to deliver.

Over the next two years, we have begun to report on Scottish Water's performance. This is described in detail in our document 'Our work in regulating the Scottish water industry: Background to and framework for the Strategic Review of Charges 2006-10' published in August 2004. Reporting developments have included:

- the extension of our monitoring role to include an annual return, a set of quarterly reports on areas such as investment delivery and customer performance, and a monthly financial return;
- publication of three regular reports on Scottish Water's performance on costs, investment delivery and customer service levels;
- formal audits of key processes such as investment appraisal and customer complaints handling.

4.3 RPI-X in the Scottish water industry

We have examined both the overall effectiveness of RPI-X regulation and the incentive framework that it creates. RPI-X is mainly used to regulate private sector companies, which are licensed providers of utility services.

Scottish Water is a public sector organisation, which, by statute, has sole responsibility for providing water and wastewater services to customers throughout Scotland.

In this section we examine the differences between incentives in the private and public sectors and consider how best to tailor RPI-X to provide incentives for public sector companies such as Scottish Water.

4.3.1 New Zealand Utilities

It is instructive to look at the experience of public sector utilities in New Zealand.

When giving reasons for the unsatisfactory performance of New Zealand's utilities, Dr Alan Bollard, then chairman of New Zealand Commerce Commission pointed out,

"several reasons have been adduced for the inadequate performance:

- the conflict they (public utilities in New Zealand) faced between various commercial and social objectives;
- an operating environment in which competition was usually lacking;
- access to funding from government sources at favourable rates of interest;
- lack of accountability to, and inadequate monitoring of performance by, government; and
- political inference."⁶

4.3.2 Strong Regulatory Framework

We believe that the proposed creation of a Water Industry Commission with powers to determine prices can help address the potential risk identified by Dr Bollard. We would agree that there are four principal risks that need to be addressed if customers are to receive value for money. These are:

- conflicting objectives (commercial, social and political);
- the lack of a hard budgetary constraint;
- lack of accountability/ monitoring; and
- lack of competition.

These risks could apply to most unregulated monopolies, whether they are in the public sector or private sector. However, a strong regulatory regime will minimise these risks from a customer perspective.

- Licence obligations can also clarify the roles and responsibilities of service providers;
- Effective regulation can address the issues of budgetary constraints and accountability/monitoring; and
- Competition can impact on some of the activities of utilities.

There is no doubt that the threat of competition can bring benefit to customers (e.g. in England and Wales some large users have benefited from lower prices. These benefits come at the expense of the shareholder, not other customers because of the possibility that the large user could have found an alternative supplier).

However, most activities in the water and sewerage business are natural monopolies, and the impact of "in-the-market" competition⁷ is likely to be limited. The

⁶ Alan Bollard, 'Utility regulation of New Zealand' drawn from: M E Beesley (ed), 'Regulating utilities: broadening the debate', IEA Monograph, London: IEA, 1997, Chapter 4.

⁷ "in-the-market" competition exists where there are genuine markets for the separate business activities that are conducted by a water and sewerage undertaker.

pressures of regulatory price settlements are already likely to encourage companies to see best value in service delivery (whether contracted out or not) and in financing. Scottish Water does not face competition for its financing, but a strong regulatory regime would ensure that it faces a similar tight budget constraint to the privatised companies.

It may, however, be instructive to compare Scottish Water and private companies in terms of the first three features.

Table 4.2: Comparison between Scottish Water and private companies

	Private companies	Scottish Water
Clear and well prioritised objectives	Although a private company may have different stakeholders, and the outcomes of its actions may affect many different parties' interests, in principle the owners' interest is paramount, and can often be reduced to a single and measurable objective such as profit and/or share price ⁸ . Key financial parameters such as yield, turnover and profit act both as a measurement of performance and as clear objectives for management to pursue.	As a public sector company, Scottish Water arguably has greater focus placed on its social obligations. It is not clear that these obligations are materially different from those of a licensed water company south of the border. Objectives are set by Ministers at a high level and by the regulators in detail. The introduction of powers of determination for the economic regulator in a policy framework decided by Ministers will be broadly similar to the regulatory structure for the industry in England and Wales.
Accountability/monitoring	In private companies, managements are accountable to the shareholders through the board. Shareholders are effective in monitoring management – they have a financial interest in the company and the power to dismiss senior management. Debt providers also monitor private companies closely. Investment analysts will also report on the performance of the company. Ofwat, the Environment Agency and the Drinking Water Inspectorate also monitor and report on performance.	Although Scottish Water is ultimately accountable to the Scottish Parliament, an independent Board of Directors has been established. The board includes a majority of non-executive directors. Day-to-day accountability for operations and meeting regulatory targets rests with the board. Scottish Water's performance is monitored by its three regulators (WICS, DWQR and SEPA). These regulators hold the management of Scottish Water accountable for delivery of the agreed cost efficiencies, water quality and environmental standards.
Budgetary constraints	Private sector companies can only access funds if the available rate of return to investors fully reflects the risk.	Scottish Water obtains its funding partly from customers and partly through public borrowing. Scottish Water has access to low-cost debt financing through government loans. It is important that lending is made available on a commercially justifiable basis and is not seen as an 'easy option' to avoid delivering efficiency targets.

To summarise, private companies have well-defined objectives, clear accountability and a focus on managing financial risks. This makes it easier to implement an incentive mechanism.

4.3.3 Summary

There are potential risks in Scottish Water's access to funding. However, the independent board structure and regulatory framework established for Scottish Water help to minimise this risk. The proposals in the Water Services (Scotland) etc. Bill will ensure:

- Scottish Water's objectives are clearly established;
- the management is clearly accountable for delivering these objectives, and
- the funding that is available to deliver the objectives is finite.

4.4 Mechanisms for incentivising outperformance

In our most recent Costs and Performance report, we showed that Scottish Water had improved its operating cost efficiency. However, our analysis⁹ has also shown that there is still a considerable gap between Scottish Water and the companies south of the border.

Introducing the RPI-X framework should accelerate the rate at which Scottish Water makes efficiency improvements. We would also propose to introduce a rolling incentive mechanism because we consider that this could improve the rate at which efficiencies are made.

4.4.1 Rolling incentive mechanisms

In the early years of UK utility regulation, the benefits of outperformance by companies against regulatory targets were transferred to customers at the end of each regulatory period, irrespective of when during that period the outperformance had occurred. This meant

⁸ Avinash Dixit (2000), *"Incentives and Organizations in the Public Sector: An Interpretative Review"*.

⁹ Costs and performance report 2002-03, November 2003.

that companies had a greater incentive to outperform in the initial years of the five-year review period than in the later years. The more costs that could be saved in earlier years, the more value accrued to the company.

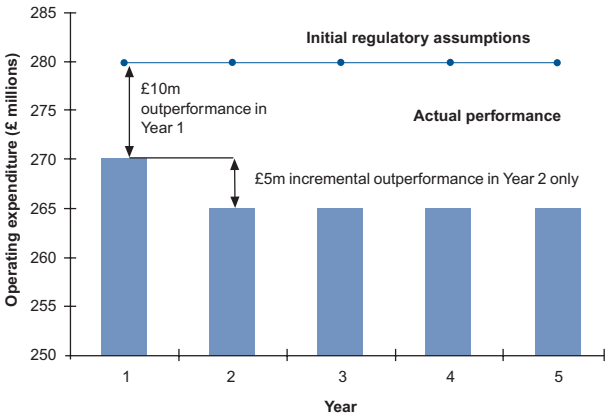
In its 1999 periodic review Ofwat proposed a rolling incentive mechanism, which it believed would strengthen incentives for the companies. The mechanism allows companies to keep the benefit of outperformance of targets for a full five-year period, irrespective of when the savings are made. It is only after a period of five years that the benefit of any outperformance is passed to customers.

There are some differences between Ofwat’s rolling incentive mechanism for capital expenditure and the mechanism for operating expenditure. We describe the two mechanisms below.

Operating expenditure

The operating expenditure rolling incentive mechanism rewards year-by-year incremental outperformance (ie additional to any incremental outperformance in the previous year). The company is allowed to benefit from this for five years, irrespective of when the incremental saving is made. Atypical and exceptional costs incurred by the company, such as restructuring costs, are excluded from the calculation of efficiency. The mechanism considers outperformance at a total company level. Figure 4.1 presents a simple illustrative example of the mechanism.

Figure 4.1: Illustrative example of outperformance – operating expenditure



In Figure 4.1, the initial regulatory assumption for annual operating expenditure for Years 1 to 5 (a regulatory period) is £280 million per year. In Year 1, there is an outperformance of £10 million. The company retains this outperformance as a surplus in its accounts, relative to the regulatory settlement, for Years 1 to 5 inclusive¹⁰. In Year 2, the company achieved a further incremental outperformance – relative to what it achieved in 1999 – of £5 million. This incremental amount (£5 million) is also retained by the company, but for the five Years 2 to 6 inclusive. Year 6 falls in the next regulatory period, so Ofwat would recognise an incentive allowance of £5 million in the first year of the next period, when it comes to set prices for Years 6 to 10. In this example, there is no further incremental outperformance after Year 2, so no further incentive allowance is recognised when prices are set for Years 6 to 10.

From this example, we can see that the incremental operating outperformance in any year can be retained for a full five years, either in the form of retained surplus during the same review period or in the form of an incentive allowance that is added to the annual required revenue in the following review period.

For further explanation and more complex examples on the rolling incentive mechanism, please refer to Annex 1 of Ofwat’s document ‘Periodic review 2004 A further

¹⁰ We have simplified Ofwat’s approach for presentational purposes. In practice, performance in Year 0 (the last year of the previous regulatory period) is taken into account, and performance in Year 5 is not. This is because, like other regulators, Ofwat has to carry out its price review before the end of each regulatory period, ie before performance in Year 5 is known.

consultation on incentive mechanisms: Rewarding future outperformance and handling underperformance of regulatory expectations’.

Capital expenditure

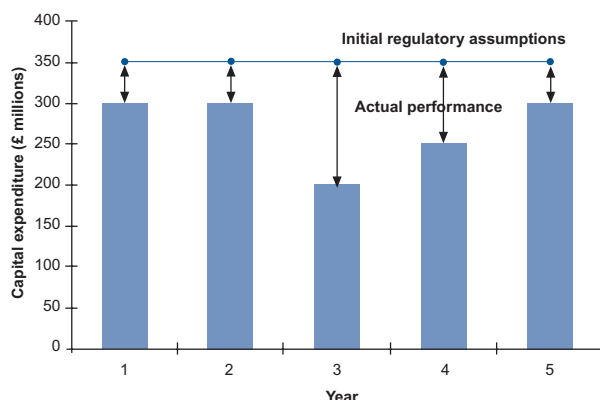
Ofwat’s capital expenditure rolling incentive mechanisms also allows a company to retain the benefit of outperformance against regulatory assumptions for five years, irrespective of when the saving is made. Infrastructure renewals expenditure is, however, excluded. The mechanism calculates outperformance at a service level, looking at water and sewerage services separately.

If there were no rolling incentive mechanism, the aggregate of all annual capital expenditure outperformance would be deducted from the opening RCV balance of the first year of the following review period. This would have resulted in the water companies transferring any outperformance of capital efficiency targets to customers at the start of the next regulatory control period. As with operating expenditure, the rolling incentive mechanism spreads the deduction over five years.

Ofwat calculates the net present value of the five years’ outperformance and make five equal annual reductions. This will avoid fluctuations in the RCV between regulatory reviews.

Figure 4.2 provides another simple example to illustrate the mechanism.

Figure 4.2: Illustrative example of outperformance: capital expenditure



In Figure 4.2, the regulatory assumption of the annual capital expenditure for Years 1 to 5 (the regulatory period) was £350 million per year.

In Year 1, the actual capital expenditure outperformed the regulatory assumption by £50 million. This £50 million outperformance is retained by the company for Years 2 to 5 of the existing regulatory period, and Year 6, the first year of the next price period. However, the company’s RCV will be reduced when prices are set for Years 6 to 10, so that outperformance savings can be passed on to customers. The same mechanism applies to outperformance in Year 2. The company retains the benefit in Years 3 to 7 inclusive, but its RCV will be further reduced when prices are next set. Similarly, outperformance in Years 3 to 5 is retained for five years after the year of outperformance, but the RCV will be reduced.

In order to calculate the amount by which the RCV is reduced, the ‘present value’¹¹ of all of the outperformances carried forward to the next period are calculated and the associated per year deductions are established. This process is illustrated in Table 4.3.

¹¹ The present value is the sum of annual values, where a discount factor is applied cumulatively to each year’s value. For example, if the discount rate is 5%, the present value of £100 in Year 1, £100 in Year 2 and £100 in Year 3 is $£100 + (£100 \times 0.95) + (£100 \times 0.95 \times 0.95) = £285.25$, where 0.95 is the number used to apply the 5% discount.

Table 4.3: Example calculation of capital expenditure outperformance¹² (£ millions)

regulatory expectations' for further explanation and examples.

	Current regulatory period					Following regulatory period				
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Initial regulatory assumptions	350	350	350	350	350					
Actual capital expenditure	300	300	200	250	300					
Outperformances per year	50	50	150	100	50					
Outperformance for Year 1	50	50	50	50	50	50				
Outperformance for Year 2		50	50	50	50	50	50			
Outperformance for Year 3			150	150	150	150	150	150		
Outperformance for Year 4				100	100	100	100	100	100	
Outperformance for Year 5					50	50	50	50	50	50
Annual deductions for next regulatory period						400	350	300	150	50
Present value of the annual deductions for the following period at a discount rate of 5%	1,173 ¹³									
Annual deductions to RCV for the following period, which give the equivalent present value of that above ¹⁴	259	259	259	259	259					

The outperformance gains retained by the company after the year in which they occur are shown shaded in Table 4.3. The £259 million in the final row of the table is the per annum deduction to the RCV balance.

Annex 2 of the Ofwat document *'Periodic review 2004: A further consultation on incentive mechanisms: Rewarding future outperformance and handling underperformance of regulatory expectations'* contains further explanation and examples.

4.4.2 Multipliers

In its June 2003 consultation paper¹⁵, Ofwat proposed an enhancement to its rolling incentive scheme. This involves applying a multiplier to the incentive allowances resulting from outperformance in the current period so that revenue for the next period is further enhanced. This acts as an enhanced incentive for water companies to outperform in the current period. Section 2.2 of Ofwat's document *'Periodic review 2004 A further consultation on incentive mechanisms: Rewarding future outperformance and handling underperformance of*

Ofwat proposes to apply a multiplier to the top performing companies in order to encourage greater efficiency in the industry. This should bring benefits to both companies and customers. The regulator has to strike a balance between the incentive to improve efficiency and the shorter term cost to customers. Multipliers also increase the complexity of the RPI-X mechanism and may therefore decrease transparency.

In Scotland, our analysis indicates that the water industry still has some way to go to match the efficiency of its counterparts in England and Wales. The incentives on Scottish Water from regulatory targets based on the RPI-X mechanism are therefore quite strong. We do not, therefore, propose to apply multipliers to any outperformance at this stage. We do, however, intend to put in place the rolling incentive mechanism.

4.5 Employee incentives

We have looked at the incentive properties of RPI-X regulation. To ensure that these incentives are effective, it is important that the resulting benefits are shared

¹² We have simplified Ofwat's approach for presentational purposes. In practice, performance in Year 0 (the last year of the previous regulatory period) is taken into account, and performance in Year 5 is not. This is because, like other regulators, Ofwat has to carry out its price review before the end of each regulatory period, ie before performance in Year 5 is known.

¹³ The present value of the annual deductions is calculated in this example as (in £ millions) $400 + (350 \times 0.95) + (300 \times 0.95 \times 0.95) + (150 \times 0.95 \times 0.95 \times 0.95) + (50 \times 0.95 \times 0.95 \times 0.95 \times 0.95) = 1173$, where 0.95 is used to apply the 5% discount rate.

¹⁴ The annual deductions are derived by calculating the annual figure which, when multiplied by the discount factors for each respective year, sum to 1,173 over the five years.

¹⁵ Ofwat (2003), *'Periodic review 2004 A further consultation on incentive mechanisms: Rewarding future outperformance and handling underperformance of regulatory expectations'*.

appropriately between the various stakeholders: in particular, the company and its employees. The customer will benefit from the additional efficiency that RPI-X regulation should encourage.

4.5.1 Benefit sharing between Scottish Water and its employees

*“[Employees’] incentive schemes are far less widespread in public sector companies than in the private sector.”*¹⁶ Performance-related incentives appear to be more problematic to apply in the public sector than in the private sector. In part this is due to factors such as the difficulty of defining and measuring outputs, and the political scrutiny that service provision in the public sector undergoes.

However, Scottish Water’s performance is being compared with companies in the private sector and customers should be able to receive at least equivalent value for money. It therefore seems appropriate, and beneficial for customers, for senior management and employees to be incentivised to achieve efficiencies. The nature and scope of incentives for management and employees is clearly outside our remit. However, the potential benefits to customers are important considerations for this Office.

In the last Strategic Review of Charges, we made the following recommendation¹⁷:

“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”

In more recent publications¹⁸ we have again stressed the importance of clearer and more public criteria for incentives paid to management. We noted that there is

increasing pressure to bring transparency to this area. From a customer perspective, we believe that incentives should be designed to encourage exceptional performance and that management bonuses should be seen to reflect improvements in the value for money that is achieved for customers.

If Scottish Water is to be permitted to retain the benefits of outperformance of regulatory targets, we believe that it would be appropriate to insist on management and employee incentives that are clearly linked to performance against regulatory targets. We would therefore propose to protect the customer interest by introducing the right to retain the benefits of outperformance on the condition that the Board agrees to publish, in advance, the incentive framework for managers and to ensure that achievement of regulatory targets are a clear and discrete element of the framework.

This is not without precedent in quasi-public, regulated organisations. Two examples of other benefit sharing schemes indicate the scope of what is possible.

*Glas Cymru*¹⁹

Glas Cymru is a ‘not-for-profit’ company that owns Dwr Cymru Welsh Water. The board of Glas Cymru has stated its intention to:

*“implement a remuneration policy for executive directors which will create strong incentives to deliver benefits to water and wastewater customers.”*²⁰

Glas Cymru’s executive directors’ remuneration is designed in such a way that a high proportion of the maximum potential pay is linked directly to company performance. Half of the maximum bonus is based on financial performance (measured by growth in financial reserves) and the other half is based on how well the company delivers services to customers.

¹⁶ Simon Burgess and Paul Metcalfe (November 1999), ‘The use of incentive schemes in the public and private sectors: Evidence from British establishments’, University of Bristol.

¹⁷ Strategic Review of Charges 2002-06 Executive Summary, Page 3 section c) Key Recommendations.

¹⁸ Costs and Performance Report 2002-03, Chapter 9, Section 9.2 Page 35.

¹⁹ Source: Interim statement of Glas Cymru policy for the remuneration of directors, Glas Cymru Cyfyngedig Annual Meeting (2001).

²⁰ Ibid.

The company believes that growth in financial reserves can best capture improved performance and efficiency. Since the main use of reserves will be to deliver lower bills to the customer, this is a direct and simple way of aligning the interests of directors and managers with those of customers.

The company's performance in improving service to customers and the environment is established using the overall service performance assessment that Ofwat publishes each year for all water companies.

*Network Rail Limited*²¹

Network Rail's Management Incentive Plan (MIP) is designed to:

*"create the potential to reward outstanding performance based on individual contribution and the overall success of Network Rail in meeting the objectives of the Business Plan."*²²

In its MIP statement, all evaluation criteria and their weightings are clearly defined and specified.

The plan has two elements: business performance and personal performance. Each provides half of the potential incentive payment. The business and personal performance measures relate directly to the objectives set out by the regulator in the company's licence. Business performance measures include public performance, passenger capability, freight capability, financial efficiency and asset stewardship. Personal performance measures refer to employee engagement, departmental objectives, financial measures and individual assignments. Each of these aspects are defined and the weighting specified in the MIP statement.

No bonus is payable if Network Rail fails to reach the minimum performance level under the business performance plan. Moreover, the incentive payment may be reduced if safety targets are not met.

Glas Cymru and Network Rail are just two examples of quasi-public organisations that provide incentive payments to senior management. Both schemes have common features.

- Transparent guidelines or rules are published – each organisation's plan is set out in a public statement;
- The schemes use objective performance measures – Glas Cymru bases its performance measures on Ofwat's published figures, while Network Rail sets out its objectives and measurements clearly in its statement; and
- Performance objectives are aligned with the objectives of each of the organisations.

4.6 Summary

In this chapter we have discussed the incentive properties of RPI-X regulation.

For the incentive framework to be effective, the management of the regulated company must share in the benefits. This is best achieved in a public sector, or not-for profit, model by ensuring transparency of the incentive mechanism, setting objective targets and aligning these targets with the overall interests of customers.

4.7 Questions for consultation

1. Assuming that an RCV approach is applied in Scotland in the Strategic Review of Charges 2006-10, is a cap required on the capital expenditure to be included in the RCV?
2. If so, should we implement a service-capping rule, similar to the one implemented by Ofwat in England and Wales ?
3. Does the RPI-X mechanism provide appropriate incentives for Scottish Water?

²¹ Source: Management Incentive Plan Statement – 2002-03, Network Rail Limited.

²² Ibid.

4. Are there any significant differences between private and public companies which we have not taken into account in this analysis?
5. Does our assessment of the importance of benefit sharing in incentivising Scottish Water to achieve efficiencies appear reasonable?
6. What level of transparency is appropriate for management bonuses in a public sector organisation?
7. Should management bonuses for Scottish Water be aligned with independently assessed regulatory and customer service targets?

Section 2: Chapter 5

What is operating expenditure and why it is important?

5.1 Introduction

In Volume 3 we explained that operating expenditure is one of the key components in calculating Scottish Water's revenue requirement. It is important that we scrutinise Scottish Water's costs in this area very carefully. This will ensure that customers' bills are no higher than they need to be.

Operating expenditure comprises day-to-day running costs and accounts for some 30% of revenue. This is illustrated in Figure 5.1.

Figure 5.1: Scottish Water expenditure and funding 2003-04

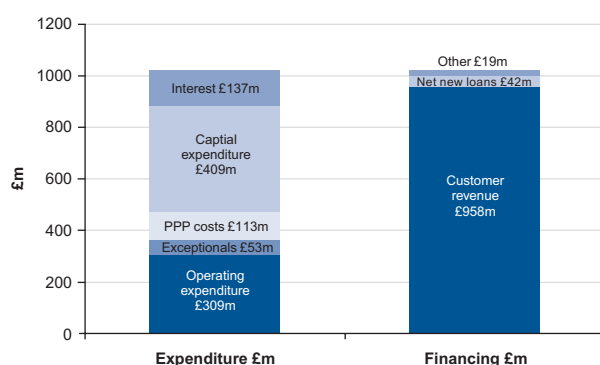


Figure 5.1 shows that in 2003-04, Scottish Water's operating expenditure was £309 million. This equates to £145 per connected property. In promoting the interests of customers of the core business, we rigorously examine Scottish Water's operating expenditure and set efficiency targets. The purpose in setting such targets is to lessen the burden on customers and to ensure that Scottish Water's charges are no more than sufficient to provide the service that customers expect.

This chapter expands on Chapter 2 and sets out exactly what we mean by operating expenditure. We also explain the factors that influence operating costs. We distinguish between external factors – which it may not be possible for managers to control – and internal factors. We provide examples of both. The chapter then briefly discusses factors that drive changes in operating expenditure. These are mainly the increased costs related to meeting new standards of service, which are offset by efficiency gains.

In Chapter 6 we examine how we propose to establish a baseline for Scottish Water's operating expenditure for the *Strategic Review of Charges 2006-10*.

5.2 Definition of operating expenditure

5.2.1 Components of operating expenditure

Operating expenditure comprises day-to-day running costs. It does not include capital investment or financing costs. Operating expenditure therefore includes employment costs, electricity, materials, hired and contracted costs, local authority rates, insurance, software licences, vehicle running costs, etc. Bad debt is also regarded as a running cost.

Our definition of operating expenditure is narrower than that employed in statutory accounts. We exclude the following items from our analysis of operating expenditure:

- Maintenance of the asset base – such expenditure is classed as capital maintenance and is regarded as investment;
- Depreciation – this is an accounting charge reflecting the use of non-infrastructure (above-ground) assets. The amount of this charge depends on the application of accounting policies. It does not necessarily reflect the organisation's spending on replacing non-infrastructure assets;
- Infrastructure Renewals Charge – this is an accounting charge reflecting the use of infrastructure (below-ground) assets. As with depreciation, the size of this charge depends on the application of accounting policies. It does not necessarily reflect the organisation's spending on maintaining infrastructure assets;
- Costs of Public Private Partnership (PPP) schemes – such costs are determined by contracts between Scottish Water and external parties. They comprise both day-to-day running costs and financing costs;
- Interest payments – such expenditure is regarded as a financing cost; and

- Taxation – the amount of taxation paid is determined by Inland Revenue. Scottish Water does not currently pay corporation tax.

We collect information about the operating costs incurred by the water and sewerage service undertakers in the UK. Our information requirement uses a consistent breakdown of operating expenditure. This facilitates comparisons with other water and sewerage companies and allows us to analyse costs. The consistency of our Regulatory Return with that used by Ofwat allows us to make robust comparisons. As a result, we do not have to make many adjustments to the reported information in order to benchmark performance. This is further discussed in Chapter 6.

The June Return¹ from Scottish Water allows us to analyse operating costs by both function and activity. Our Return defines these functions and activities in the same way as Ofwat's equivalent Return. The analysis of expenditure by function provides information about 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.

5.2.2 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 abnormal pension contributions;
- redundancy payments;
- rates rebates; and
- unusual weather conditions.

Such one-off items of expenditure are usually classified in one of two ways:

- Exceptional items – defined in Financial Reporting Standard 3 (FRS 3) and reported in statutory accounts; or
- Atypical costs – one-off costs that are not covered by FRS 3, but which do have a material impact on reported costs in the financial year.

Our analysis of Scottish Water's operating expenditure endeavours to be as accurate and fair as possible.

¹ The June Return is an annual information submission that we receive from Scottish Water. It contains information about all aspects of Scottish Water's business and is the most comprehensive information submission that we collect. The Return is described in more detail in Volume 1, Chapter 3 of our Methodology.

Assessment of Scottish Water's relative efficiency (ie Scottish Water's efficiency when compared to the companies in England and Wales) in operating expenditure therefore takes into account reported one-off costs. Comparisons could obviously be affected by both Scottish Water's one-off costs and those of the privatised companies.

5.2.3 Base service operating expenditure

There are many factors that could justify an increase in operating costs. These include:

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

We make adjustments to ensure that such 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.

We therefore require Scottish Water to report two operating expenditure figures: one for base service, and one for total operating expenditure². Base service expenditure comprises the cost that is incurred simply to maintain a constant level of service from some agreed starting point.

Total operating expenditure includes both the operating costs relating to maintaining the base service and the net additional running costs associated with improvements. It is possible to compare the underlying trends in operating expenditure more fairly if new net additional costs are reported separately.

5.3 Factors that influence the level of operating expenditure

There are several important factors that can influence operating expenditure in the water industry. We can categorise these factors as 'external' or 'internal'. We term those factors over which water and sewerage service providers have little or no control as external. Internal factors are those that we consider to be under the control of the management of the organisation. In order to gain a true picture of the relative efficiency of organisations, it is important to take proper account of both sets of factors. For example, it would be unfair to deem that an organisation was inefficient if higher reported costs were purely a function of external factors. This requires us to take account of external factors in our efficiency analysis. We only compare performance on those factors that management are able to control.

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

- Difficulty of operating environment (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);
- Volumes (water consumption, peak use, sewage loads);
- Nature of the assets operated and maintained (size, mix, performance). Water and sewerage assets tend to have long lives and changes to the inherited asset base take time;

² The companies in England and Wales also report two operating expenditure figures.

- Regional variations in charges for local authority rates, water abstraction and sewage discharges;
- Regional variations in services such as mains diversions and sewer diversions ('third party' services); and
- Regional variations in market rates for salaries, electricity or other costs.

In addition, it is possible to identify a number of internal factors that affect the costs of the water and sewerage industry. They include the following:

- The remuneration policy of an organisation, for example salaries, bonus schemes, health care etc;
- An organisation's policy regarding the use of permanent or temporary employees – the former will incur recruitment costs, while the latter could incur fees payable to an agency;
- An organisation's policy regarding the purchasing and stocks of materials and consumables;
- An organisation's policy regarding hired and contracted services, for example, the use of lawyers and consultants; and
- The nature of the assets operated and maintained (size, mix, performance). Over time, water and sewerage service providers can change the assets that they own and operate, either by building new ones, decommissioning old ones or making changes to existing assets to modify the way in which they operate.

We consider external cost drivers to be outside significant management control in the short term, for an efficiently run business. However, poor management can mean that charges incurred for local authority rates or electricity, for example, are higher than they need to be, or that insufficient attention is paid by managers to limiting the impact on costs of their operating environment.

The approach to comparisons with other water and sewerage companies is therefore to determine, by

detailed analysis of the available information, the way in which the external factors listed above influence actual operating expenditure for Scottish Water. The models that we use are described in more detail in Chapters 8 and 9, but essentially they estimate the effect on costs of the operating environment, 'customer base' and assets and volumes. We exclude costs that may be affected by regional distortions such as local authority rates.

Our aim is to normalise costs across Scottish Water and its comparators, so that the variations that remain are likely to be associated with differences in efficiency. Comparisons of normalised operating expenditure allow us to make a fair assessment of Scottish Water's relative efficiency.

5.4 Factors that drive changes in operating expenditure

Any change in operating expenditure will impact on customers' bills. This would include, for example:

- New operating expenditure – investment in improving customer service in higher treatment standards etc. is likely to increase operating expenditure;
- Changes in the wider economy can impact on operating costs such as power costs and pension costs;
- Specific costs incurred by Scottish Water, for example increased insurance premiums would impact on operating costs; and
- Efficiency savings in operating expenditure will reduce customers' charges relative to the level that they would otherwise have been.

5.5 Summary

Operating expenditure has a considerable direct impact on customers' charges. As a result, we have to scrutinise Scottish Water's costs in this area very carefully. Chapters 8 to 14 explain how we establish the scope for efficiency and set appropriate targets.

Section 4: Chapter 6

Establishing a baseline for operating costs

6.1 Introduction

This chapter reviews how operating expenditure in the Scottish water industry has changed since the *Strategic Review of Charges 2002-06*. It outlines how we propose to establish a baseline level for operating expenditure at the start of the next regulatory control period.

We set efficiency targets at the *Strategic Review of Charges 2002-06* to ensure that we kept increases in customers' bills to a minimum. Significant efficiency savings have been achieved. However, we believe that there is still significant scope for further savings in the next review period 2006-2010. In this chapter we set out how we propose to set the baseline to which we will apply future operating cost efficiency targets. This is important, because it forms the basis against which we will monitor Scottish Water's progress during the regulatory control period. A shared understanding of the assumptions that underpin the efficiency target will minimise uncertainty in the measurement of progress towards the targets.

In this chapter we examine recent movements in Scottish Water's operating expenditure relative to the targets we set in the *Strategic Review of Charges 2002-06*. We discuss the adjustments that we make to the reported costs, so that we can compare performance on a like-for-like basis. In particular, we set out the criteria that we propose to use to assess adjustments. We then describe the framework and process that we will follow to establish the baseline. At the end of the chapter we briefly review the potential changes in ongoing operating costs that could affect Scottish Water's baseline, for example increased pension contributions.

6.2 Scottish Water's operating expenditure

In 2003-04, Scottish Water's operating expenditure (excluding payments to Public Private Partnerships (PPPs)) totalled £362.1 million¹. This is broken down in Table 6.1².

Table 6.1: Breakdown of Scottish Water's operating expenditure in 2003-04

	Operating expenditure £m
Water service:	
Resources and treatment	42.7
Distribution	58.6
Business activities	26.4
Local authority rates	16.1
Doubtful debts	17.8
Exceptionals	31.7
Third party services	16.6
Total water service operating expenditure	209.7
Sewerage service:	
Sewer network	37.1
Sewage treatment	31.6
Sludge treatment and disposal	11.7
Business activities	17.2
Local authority rates	9.4
Doubtful debts	20.5
Exceptionals	21.2
Third party services	3.8
Total sewerage service operating expenditure	152.4
Total Scottish Water operating expenditure	362.1

As we explained in the previous chapter, we removed one-off exceptional costs. This gives an initial estimate of the underlying operating costs. This amounts to £309.2 million in 2003-04 (£362.1m - £21.2m - £31.7m). We also need to adjust this initial estimate to correct for any unusual factors that may exist. We discuss these adjustments later in the chapter.

Has Scottish Water met its efficiency targets for operating expenditure?

The efficiency targets that we set at the *Strategic Review of Charges 2002-06* were phased over the period up to March 2006. In the last year of the review period, 2005-06, we set a target that operating expenditure should be reduced to £258.4 million. Following representations from Scottish Water³, we concluded that the targeted level of baseline operating costs for 2005-06 should be increased by £6.6m to take account of the following:

¹ PPP costs are payments to the consortia that operate sewage treatment works under the Private Finance Initiative. We will discuss these costs in more detail in Chapter 12.

² Numbers may not add due to rounding.

³ The discussions with Scottish Water led to an agreement called the 'Ten Principles'. Volume 1, Chapter 5 of our Methodology provides a full description.

- A worse than expected performance in 2001-02 by the three predecessor authorities. We made an allowance of £4m for this factor;
- A different legal definition of sewers in Scotland than in England and Wales. We made an allowance of £2m for this factor; and
- Inflation on the above two factors amounted to an additional £0.6m.

The targeted levels of operating expenditure under the Strategic Review and the revised targets are set out in Table 6.2⁴:

Table 6.2: Strategic Review 2001 baseline and target levels of operating expenditure, and revised targets.

	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06
Strategic Review of Charges 2002-06 baseline	£365.8m	-	-	-	-	-
Strategic Review of Charges 2002-06 targets	-	£360.5m	£304.3m	£277.1m	£265.9m	£258.4m
Revised targets	-	-	-	-	-	£265.0m

Scottish Water has made significant reductions in operating expenditure. We propose to judge Scottish Water on its achievement of the £265m operating cost target that was agreed for 2005-06. At the current time we believe that it is likely that this target will be achieved. Scottish Water's operating expenditure performance is shown in Table 6.3:

Table 6.3: Comparison of Scottish Water's reported and adjusted operating expenditure⁵

	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06
Scottish Water's reported operating expenditure	£365.8m	£357.1m	£330.8m	£309.2m	n/a	n/a
Scottish Water's adjusted operating expenditure	£365.8m	£380.5m	£351.2m	£323.0m ⁶	n/a	n/a

⁴ For 2000-01 and 2001-02 the figures represent the consolidated operating expenditure of the three predecessor authorities.

⁵ For 2000-01 and 2001-02 the figures represent the consolidated operating expenditure of the three predecessor authorities.

⁶ The adjusted figure for 2003-04 is only a preliminary estimate.

In Table 6.3 we show Scottish Water's reported operating expenditure. We also show Scottish Water's adjusted operating expenditure. This reflects adjustments that we have made to monitor Scottish Water's progress (on a like-for like basis) towards its targets. The adjusted operating expenditure should be compared with the Review targets.

Scottish Water has not so far met the efficiency targets that we set; this means that Scottish Water has had to borrow more (than would otherwise have been required) to cover this extra expenditure. Customers will ultimately pay for this extra borrowing through charges. However, Scottish Water has not delivered as much capital investment as we had assumed in the early years of this Review period. Extra borrowing (beyond the level allowed in the Review) has not yet been necessary to compensate for the extra operating costs incurred.

6.3 Adjustments to operating expenditure

Each year we make adjustments to Scottish Water's reported expenditure to ensure that we can compare it to the *Strategic Review of Charges 2002-06* baseline. We believe that this is the only fair way to monitor Scottish Water's progress towards the efficiency targets.

The adjustments that we make generally fall into the following categories:

- Correcting for the merger of the three predecessor authorities

The calculated targets in the *Strategic Review of Charges 2002-06* used the year 2000-01 as the baseline. The operating costs reported in that year were those of the three authorities prior to the formation of Scottish Water in April 2002. Our targets did not take account of any changes in the way that costs would be reported as a result of the merger. The main difference relates to inter-authority trading. The three authorities had various commercial dealings with each other. The most important was a bulk supply of water from the East of Scotland Water

Authority to the West of Scotland Water Authority. The West of Scotland Water Authority paid East of Scotland Water Authority £7.1m in 2000-01. The merger means that neither the revenue nor the cost of this arrangement is now included in reported costs. However, this cost was included in the baseline. In order to compare like with like, we adjust Scottish Water's reported operating expenditure to include the cost of inter-authority trading.

In 2002-03, we made an upward adjustment of £6.4m to Scottish Water's reported expenditure. (The adjustment in 2002-03 is lower than the actual cost in 2000-01 because we assumed that the cost of the bulk supply would have been reduced in line with the efficiency targets.)

- Unwinding artificial changes in expenditure

An 'artificial' change in expenditure is one that has no impact on the cash that has actually been spent, but does affect the way that the expenditure is reported. For example, at the time that the efficiency targets were set, we did not know how the former authorities' accounting practices in 2000-01 might change in 2001-02, nor the changes that Scottish Water might introduce from 2002-03. Our analysis has shown that the increase in the capitalisation of operating expenditure appeared to result from changes in accounting policy. The West of Scotland Authority first introduced these changes, but Scottish Water has continued this policy. Reallocating costs from operating to capital expenditure is not a true efficiency saving. This is because the money is still being spent, albeit under a different expenditure category. We could increase the capital efficiency targets to compensate, but this would reduce the transparency of our monitoring.

For 2001-02 and 2002-03, we made upward adjustments of £8.1 million and £12.7 million respectively to the three authorities' and Scottish Water's reported operating expenditure. The adjustments unwound the reported increases in capitalisation, relative to the 2000-01 baseline.

- Adjusting for atypical costs (or savings)

These are costs (or savings) that are one-off in nature, but which are not classed as exceptional under accounting standards. Examples include the cost of dealing with unusual operating circumstances. Examples would include the foot and mouth outbreak, or savings resulting from pension holidays. Such atypical costs (or savings) increase (or reduce) the normal ongoing operational costs of an organisation. We believe therefore that it would not be fair to include them in our analysis of Scottish Water's performance. This is fully consistent with the approach taken by Ofwat, which also excludes atypical costs (and savings) that have been incurred by the water and sewerage companies in England and Wales. However, the onus is on the water and sewerage service providers to identify any such atypical costs (or savings) in their annual information submissions, Scottish Water reported no atypical costs requiring adjustment in 2002-03.

- Adjusting for new non-core activities

The targets we set in the *Strategic Review of Charges 2002-06* covered all of the operating costs of the three former water authorities' in 2000-01. These included the cost of activities such as farming and consultancy services that are not part of the statutory core business of water and sewerage provision. As part of the 'Ten Principles'⁷ we have agreed with Scottish Water that we would continue to include the costs of these activities in monitoring progress towards targets. However, from 2003-04 we exclude the costs of any new non-core activities.

6.3.1 The purpose of making adjustments to reported costs

Each of these types of adjustment is designed to ensure that our comparisons between Scottish Water's actual performance and the Strategic Review targets are made on a like for like basis. We believe that adjusting actual performance ensures that our performance monitoring is more transparent. The alternative would be to adjust the

⁷ The Ten Principles are discussed in Volume 1, Chapter 5 of our Methodology.

targets each year in order that the targets were on a wholly comparable basis to the reported expenditure. Our view is that this would not be a practical or meaningful exercise because it would mean that the targets change each year. Customers only benefit from genuine efficiency savings and we believe that monitoring Scottish Water's progress needs to be as straightforward as possible. A constant set of targets is, in our judgement, the only way to ensure that benefits are delivered and seen to be delivered.

6.3.2 Criteria for making adjustments

In our annual *Costs and Performance Report* we set out the criteria against which we assess the reported operating expenditure. The tests that we use are:

- Do forecast outturns of all components show consistency with the reported year to date figures and trends?
- Can movements in the provision for bad debt be fully explained (since a reduction in the provision could artificially reduce costs)?
- Is new operating expenditure consistent with measures taken to improve service, and additions/enhancements to the authority's operational assets?
- Are PPP costs correctly allocated, and within the limits agreed in the Strategic Review?
- Is the declared level of own work capitalised consistent with changes in the amount of capital investment?
- Is spend-to-save expenditure within the limits set by the Scottish Executive, and properly justified?
- Are accounting items, exceptional items and non-recurring costs correctly allocated and explained?
- Do any changes in the allocation of core and non-core business costs affect the interpretation of trends in baseline operating cost?

- Do any other relevant changes in accounting policy affect the interpretation of trends in baseline operating cost?

In the event that a reported costs component appears to be inconsistent with these tests or is otherwise not explained it may be necessary to adjust the calculation of operating expenditure.

In 2002-03 we made two additional small adjustments: £1.3m of staff costs had been allocated to exceptionals (item 7 on the above list) and PPP costs (item 4 on the above list). We added these adjustments back to Scottish Water's reported operating expenditure.

6.3.3 The impact of adjustments to costs

These adjustments account for the difference between Scottish Water's reported expenditure and the adjusted level of operating expenditure that we use for monitoring progress towards efficiency targets. This is illustrated in Table 6.4.

Table 6.4: Summary of our adjustments to Scottish Water's reported operating expenditure in 2002-03

	£ millions
Scottish Water's reported operating expenditure	330.8
Plus inter-authority trading costs	6.4
Plus capitalisation adjustment	12.7
Plus staff costs reallocation	1.3
Scottish Water's adjusted operating expenditure	351.2

6.3.4 The approach of other regulators

Other regulators of utilities make similar adjustments to reported costs of regulated companies. Recently, both Ofwat and Ofgem have made adjustments to companies' reported costs.

In 2002-03, Ofwat adjusted the reported costs of seven companies to correct the allocation of leakage expenditure and ensure like-for-like comparison across the companies. Ofwat's adjustment to Thames Water's reported operating costs was almost £49m. Ofwat had made clear⁸ that it expected companies to allocate

⁸ Ofwat set out its approach to leakage expenditure in *Setting water and sewerage price limits 2005-10: Framework and approach*, published in March 2003.

leakage expenditure in a specific way and made corrections where this guidance had not been followed. Ofwat does not publish the criteria that it uses to make adjustments to companies' costs. The existence of regulatory accounts reduces the likelihood that changes in accounting policy need to be reversed. However, Ofwat will still make any adjustments that it considers necessary to ensure like for like comparisons.

In June 2004 Ofgem published its draft proposals for price limits for the electricity distribution companies. These proposals included a list of the adjustments that Ofgem had made to operating costs for the purposes of like for like comparisons⁹ (these adjustments included correcting for differences in capitalisation of costs). Ofgem only identified the differences in companies' costs after they had received the information. They have asked some companies to resubmit the information. Ofgem is now considering whether to define their information collection more tightly.

6.3.5 Future developments

We have had extensive discussions with both Scottish Water and the Scottish Executive regarding the adjustments that we make to operating expenditure. Both have raised concerns about the extent of our adjustments. We continue to believe that the interests of customers are best served by ensuring that year-on-year comparisons are on a like-for-like basis and that Scottish Water makes genuine efficiency savings. The planned introduction of regulatory accounts (discussed in Volume 3, Chapter 6 of our Methodology) should significantly reduce the need for such adjustments to Scottish Water's reported costs. Until we have fully introduced regulatory accounts we propose to continue to make such adjustments as we believe to be necessary to monitor Scottish Water's performance against targets on a like for like basis.

6.4 Establishing a baseline for Scottish Water

We need to establish a baseline level of operating expenditure for Scottish Water. We will apply future

efficiency targets to this baseline. We will monitor Scottish Water efficiency performance relative to this baseline during the next regulatory control period. It is important to define clearly the baseline and the assumptions that underpin it.

6.4.1 Establishing the base year

The baseline level of operating expenditure is the expenditure incurred in the base year. There is one base year for each regulatory control period. In the previous Strategic Review we used 2000-01 as the base year. Performance in the base year is the starting point against which future performance will be measured. For that reason, the base year should be one that is relatively stable. We would therefore not suggest using 2002-03 as a base year because it was the first year after the merger of the three authorities.

We believe that there are two options for establishing the base year for operating expenditure:

- Continue to use the year 2000-01. This was the base year for the last Strategic Review. To use 2000-01 as the base year we would have to separate out new operating expenditure; or
- Use 2003-04 as the base year for the draft determinations (due to be published in June 2005) and 2004-05 as the base year for the final determination (due to be published in November 2005).

The disadvantages of the first option are obvious. The Scottish water industry has moved on since the *Strategic Review of Charges 2002-06*. The three authorities have merged to form Scottish Water and the corporation has made significant progress in consolidating all aspects of the business, including accounting practices. There is also no need for the baseline for 2006-10 to take into account adjustments such as inter-authority trading.

There is also no need for us to adjust capitalisation back to 2000-01 levels because Scottish Water consistently

⁹ Ofgem, *Electricity Distribution Price Control Review – Initial Proposals*, June 2004.

applies its capitalisation policy and it is within the range observed in the companies in England and Wales. Reducing the number of adjustments simplifies setting a baseline for operating expenditure.

The choice of base years for the second option is limited because we will only have reported information up to 2003-04 when we issue the draft determination in spring 2005. By the time of the final determination we will also have 2004-05 information.

There is a disadvantage to the second option. When we monitor Scottish Water's progress towards its efficiency targets up to March 2006, we will continue to make such adjustments as we believe to be necessary. However, these adjustments will have no bearing on the baseline for operating expenditure that we will establish for the next regulatory control period. This is likely to mean that there will be difference between the operating expenditure figure that we use for monitoring purposes and that we regard as the baseline for operating expenditure. For example, in 2005-06 Scottish Water is targeted to achieve operating expenditure of £265m after adjustments. This is likely to mean that Scottish Water's reported operating expenditure would be somewhat lower than this level. We will endeavour to be clear when we are using the baseline for operating expenditure and when we are using the adjusted operating expenditure for the purposes of like for like comparisons.

We propose to use 2003-04 as the baseline for operating expenditure. We believe that this would lead to a simpler, more transparent monitoring process after April 2006.

6.4.2 Establishing baseline operating expenditure for 2006-2010

We propose to establish the baseline level for operating expenditure:

- We will use the 2003-04 statutory accounts and June Return information to establish the total level of Scottish Water's operating expenditure in that year.

- We will identify exceptional and atypical costs and subtract them from total operating expenditure. This will allow us to establish the normal ongoing costs of running the business.

- Finally, we will assess whether there is anything unusual about Scottish Water's cost allocation in 2003-04. We will compare Scottish Water with the companies in England and Wales to ensure that its cost allocation practices are consistent with those in England and Wales. If necessary, we will make appropriate adjustments to Scottish Water's operating expenditure.

This adjusted total operating expenditure will form the baseline for our draft determination.

We are due to publish the final determinations in November 2005. We will therefore have information for 2004-05. We propose to revise our assessment of the baseline using information for 2004-05.

6.4.3 Projecting 2005-06 operating expenditure

The final year of the current regulatory control period is actually 2005-06. We will therefore have to project Scottish Water's operating expenditure in that year. We need to do this in order to apply the efficiency targets from April 2006 onwards. Scottish Water is targeted to achieve operating expenditure of £265m after adjustments. Our baseline will not include adjustments. Ideally, we would use 2005-06 reported costs but we will not have final information regarding performance in 2005-06 until after the new price limits have been set.

There are a number of ways in which we could project 2005-06 costs. We ought, however, to bear the following issues in mind.

First, in the last Strategic Review of Charges we set targets for Scottish Water. We believe that there needs to be consistency between reviews. Our projections for 2005-06 need to be consistent with the targets that we set.

However, we need to balance this need for consistency and take account of Scottish Water's performance. We need to be sure that we have no reason to believe that Scottish Water's actual performance will be materially different from the agreed target.

If Scottish Water fell short of target it would be faced with a higher starting point than we assumed in the determination. This could mean that the targets were more difficult than they appeared. This could have a demotivating effect on Scottish Water.

If Scottish Water beats its 2005-06 target, then it could face an easier efficiency target than we had intended.

There appears to be five options for projecting 2005-06 expenditure. These are:

- Option 1

Assume a flat level of expenditure in 2004-05 and 2005-06 (in real terms, ie with inflation stripped out of the figures).

Effectively, we would be assuming that the baseline level of operating expenditure does not change over the two years and the efficiency targets would apply from that level. Scottish Water has an efficiency target to 2005-06 and it would be very likely that its performance in 2005-06 would be better than 2004-05. Reported operating expenditure would therefore be lower than we had assumed. This would give Scottish Water an opportunity to get ahead of the efficiency targets that we set in the review for 2006-2010.

- Option 2

Assume that Scottish Water meets its targeted operating expenditure level in 2005-06.

This would require us to project likely adjustments for 2005-06, so that we can reconcile the target (£265 million) with Scottish Water's accounting costs. The most significant adjustment that is likely to be made in 2005-06 is for inter-authority trading. There may also

be an adjustment to correct the reported level of capitalisation. In the *Strategic Review of Charges 2002-06* we estimated that inter-authority trading would be worth £5.7m in 2005-06. This means that if Scottish Water achieved operating expenditure of £259.3m in 2005-06, this unadjusted figure would be consistent with £265m after adjustments (assuming no other adjustments are necessary). We could, therefore, assume an upper limit on operating expenditure of £259.3m in 2005-06. Our view on the total level of adjustments that may be necessary could be informed by Scottish Water's business plan submissions, which will include its projections for 2005-06.

- Option 3

Assume that Scottish Water fails to meet its targeted operating expenditure.

This would entail a number of assumptions regarding the amount by which Scottish Water's expenditure exceeds the target. This would be difficult to predict. At the current time, we believe that such an outcome is highly unlikely.

- Option 4

Assume that Scottish Water beats its targeted operating expenditure.

We would need to consider how this outperformance should be shared with customers. It would also entail making an assumption about the extent of the outperformance.

- Option 5

Use Scottish Water's forecast expenditure from its Business Plan submission¹⁰.

This has the advantage that the forecast will have been made by Scottish Water. However, if Scottish Water forecast that its costs exceeded the target level of operating expenditure in 2005-06 (£265m after

¹⁰ The draft Business Plan is due to be submitted in October 2004, with the final Business Plan being submitted in April 2005.

adjustments), we would have to consider whether we could reasonably use this projection. We believe that we have to be consistent and that it would be inappropriate to change the agreed targets.

6.5 Future changes in baseline operating expenditure

We need to consider the potential changes in costs that are outside the control of management that could occur during the regulatory control period. Examples of such changes could include:

- Pensions costs. Many organisations are facing the need for increased pension contributions. This pressure on costs is not confined to Scottish Water, but it could result in an increase in Scottish Water's baseline operating expenditure;
- Non-domestic rates. The basis on which Scottish Water's assets are valued will change in 2005. The impact of this change on the valuation and hence the rates paid is not yet known; and
- Energy costs. Future changes in energy costs, for example as a result of the current Ofgem review of electricity distribution price controls, could affect Scottish Water's costs.

We need to take proper account of such changes in order to ensure that Scottish Water can continue to deliver an appropriate level of service. This does not mean that we will automatically allow each claim for changes in the baseline. We will closely examine any claims by Scottish Water. We will use the following criteria to assess such claims:

- If the future changes are the result of an economy wide factor, will their impact be accounted for in national inflation indices?
- What measures has Scottish Water's management taken to reduce the impact of future increases in baseline operating expenditure?
- Where appropriate, has Scottish Water taken account of external advice in respect of the forecast

changes? For example, when we look at pensions costs, we will expect any forecast changes to be supported by an actuarial valuation.

- Are there any offsetting factors that we believe Scottish Water has failed to take into account?
- What views have been expressed by other utility regulators such as Ofwat and Ofgem in assessing similar claims by the companies that they regulate?

We believe that it is important that Scottish Water presents a robust case for changes to future baseline operating expenditure in its Business Plan.

6.6 Conclusions

We have discussed how we propose to establish a baseline for Scottish Water's operating expenditure for the *Strategic Review of Charges 2006-10*. We have explained we will use the baseline to set efficiency targets in the review. Setting a baseline is not a straightforward process – there are several different approaches that we could take, and we would welcome comments on our proposals. The calculation is not straightforward. It is likely that we will need to make adjustments to reported costs in order to establish an appropriate baseline.

It is worth reiterating that the adjustments described in this chapter allow us to track performance over time and against targets on a like-for-like basis. In later chapters, we discuss adjustments that allow us to compare performance in a given year with that of the companies in England and Wales.

6.7 Questions for consultation

1. When setting operating expenditure efficiency targets, do respondents agree that we should use 2003-04 as a base year for the draft determinations and 2004-05 as a base for the final determinations?
2. We invite comments on the most appropriate figure to use for baseline operating expenditure in 2005-06 and the impact that different assumptions may have.

3. What factors do stakeholders believe could result in changes in baseline operating expenditure in the period 2006-10?
4. Do stakeholders think that our criteria for assessing Scottish Water's claims for changes in baseline operating expenditure are sufficient?

Section 3: Chapter 7

Ensuring like-for-like comparisons of efficiency

7.1 Introduction

In Chapter 5 we described how we propose to establish a baseline for operating expenditure. In this chapter we describe our approach to comparing Scottish Water's performance with that of other water and sewerage undertakers, and explain the steps we take to ensure that our assessment of Scottish Water's efficiency is fair, accurate and on a like-for-like basis.

We first explain what we mean by efficiency. We then outline the 'top-down' approach that we use in comparing Scottish Water's performance with others. We discuss how we ensure that comparisons of efficiency are undertaken on a like-for-like basis, and in particular the factors that we take into account when making those comparisons. This allows us to assess the 'efficiency gap' between Scottish Water and the companies south of the border.

7.2 What do we mean by efficiency?

Efficiency is often taken to mean cutting the costs of providing a service. This is, however, too simplistic a view because an assessment of efficiency should also consider the service that is actually provided. Water and sewerage undertakers in the UK have to provide the minimum standard of service that is expected by stakeholders. This would include:

- treating drinking water to the minimum standard required by legislation; and
- removing and disposing of effluent in compliance with the minimum standards required by legislation.

An efficient water and sewerage undertaker will carry out the minimum activities necessary to provide the service that is expected, at the lowest cost.

An organisation could be perceived as inefficient for one of two reasons:

- Case A – the organisation carries out more activities than are necessary in order to provide the expected standard of service. Even if the organisation is generally low cost, this would tend to increase the

cost of providing the service. Even if these extra activities raised the standard of service above that which stakeholders expect, we would still consider this to be inefficient.

- Case B – the organisation carries out the minimum activities that are necessary in order to provide the expected standard of service, but at a high cost.

In Case A, the organisation has chosen to provide a higher standard of service than is actually expected. Customers should not be expected to pay for the costs of providing this high standard of service, unless they have previously indicated a willingness to pay for it.

In Case B, the organisation provides the minimum expected service, but at a relatively high cost. Once again, customers should not be expected to pay more as a result of their undertaker's inefficiency.

We monitor Scottish Water's progress towards achieving efficiency. We take account both of costs and of the level of service that is provided to customers. If Scottish Water were to cut costs but at the same time lower the level of service to customers, then we would not regard this as an efficiency. In our view, Scottish Water must *at least* maintain service to customers at the same time as cutting costs. This view of efficiency is consistent with the approach taken by other UK utility regulators.

7.3 Top-down approach to benchmarking

Benchmarking describes objective comparisons of performance across (or within) organisations. It involves comparing the performance of leaders in a particular field of activity with that of other similar organisations.

We use benchmarking techniques to assess Scottish Water's relative efficiency. Essentially, our benchmarking techniques involve high-level comparisons of Scottish Water's performance with that of the companies in England and Wales.

Full details of the benchmarking methods that we propose are provided in Chapters 8 and 9. However, we summarise the key principles of our benchmarking approach below.

The benchmarking that we carry out is quantitative rather than qualitative. In other words, the information that we use to benchmark Scottish Water is numerically based. It is also subject to audit by Reporters and Auditors. If we were presented with robust qualitative information, however, we would take that into account.

We have deliberately chosen to employ a top-down approach to benchmarking. This means that our comparisons with the water and sewerage companies in England and Wales remain at a relatively high level.

Each water and sewerage undertaker has to provide a certain standard of service. We do not manage Scottish Water, and it would not be appropriate for us to define all of the activities required to deliver the appropriate level of service. If we were to adopt a detailed, bottom-up approach to benchmarking, this could result in us benchmarking activities that are not actually necessary for delivering the service. This could obviously yield misleading results in our benchmarking analysis. Moreover, such an approach would be onerous, costly and intrusive. This is exemplified by the fact that Scottish Water identified more than 250 separate activities as part of its recent work on activity-based costing. (Bottom-up benchmarking could, however, be useful to management as a tool for identifying potential sources of efficiency savings.) Our top-down approach breaks down the water and sewerage services into around ten major activities.

We believe that although the approach we employ is top-down, it is sufficiently detailed to take account of the factors that have a material influence on costs. This enables us to reach robust conclusions regarding Scottish Water's relative efficiency.

7.4 Assessing the efficiency gap

We examine Scottish Water's efficiency relative to that of the water and sewerage companies in England and Wales. In doing so, we endeavour to ensure that our comparisons are on a like-for-like basis. Assessing relative efficiency is key to our analysis; it enables us to quantify the cash cost of inefficiency. This is the extra cost that must be borne by customers. We call this

amount the efficiency gap. Each of these terms is discussed in further detail below.

7.4.1 Ensuring like-for-like comparisons

Our approach to ensuring fair, accurate and like-for-like comparisons involves:

- creating a detailed framework for reporting annual regulatory data;
- using only measurable and objective information;
- using clear and consistent definitions;
- establishing a clear process for auditing and reviewing regulatory information;
- using standard benchmarking methods;
- using detailed and objective criteria for adjustments.

Our approach mirrors that which Ofwat adopts. We use information collected by Ofwat from the companies in England and Wales, and collect the same information from Scottish Water using fully consistent definitions. We described the framework for reporting and auditing regulatory information in Volume 2 of our methodology.

We also need to understand the factors that influence operating costs so that we can take appropriate account of them in our comparisons. These are discussed in Chapter 8. We need to be certain that the water and sewerage undertakers all face similar cost factors. By identifying the most important factors, we can also correct for any material differences. This ensures that no undertaker is put at a disadvantage.

Ofwat has made considerable efforts over the past 13 years to identify the cost factors faced by water and sewerage undertakers in the UK. We need to identify whether there are factors that are outside management control that would affect performance. Only by taking account of these factors can we compare the performance of companies south of border with that of Scottish Water.

7.4.2 External and internal cost factors

Water and sewerage companies face a number of factors that can have an impact on their costs. In the previous chapter, we explained that we need to take into account the impact of external factors (those outside management control) when comparing operating costs. We also explained that comparisons should not adjust for internal factors that management can control.

External factors can drive costs in many ways. We provide some examples of external factors, and the way in which they affect costs, below.

Topography

If a water and sewerage undertaker operates in an area in which a number of town and villages are on hills, then it is likely to cost the undertaker a significant amount of money to pump water up the hills to customers' properties. On the other hand, if water sources are all upland and towns and villages are principally in valleys, then the water will not require as much pumping because it will be pulled down to where it is needed by gravity.

Types of source

Some water sources can be more difficult to treat than others. The quality of river water, for example, often fluctuates and can contain large amounts of pesticides and nitrates which have washed off farmland. Such sources are expensive to treat to the standard that is required for drinking water.

Population density and distribution

It can cost more – per unit of water and sewage treated – to serve small concentrations of population than larger ones because they do not benefit from economies of scale in the treatment processes. The costs of serving small communities may be further increased where the communities are isolated, for example because of the staff time spent travelling. Conversely, in some densely populated urban areas costs can increase as a result of

difficulties in carrying out inspections and repairs to underground water mains and sewers. Staff travel times in urban areas may also be significant.

Sewage effluent standards

Standards for sewage effluent are usually set by national or European legislation and are enforced by the environmental regulators¹. Discharges to rivers or designated bathing waters will often have tighter effluent consent standards than other types of discharges. These tighter consents will usually increase the costs of the sewerage service undertaker.

Peak use

A water and sewerage undertaker with a customer base that demands large amounts of water for short periods of time will often have higher costs than an undertaker who faces steady demand. This is because the undertaker needs to have large volumes of water available for use at short notice. This will often entail additional treatment, storage and distribution capacity in order to cope with peak demand.

When we assess the efficiency gap between water and sewerage undertakers we only correct for external factors. For example, when we assess efficiency in power (electricity) expenditure in the water service we take into account the amount of pumping that each undertaker has to undertake. When we examine water resources and treatment expenditure, we take account of the quality of raw water because we recognise that water undertakers in different parts of the country face different circumstances in the availability and sources of water. The same applies to the sewerage service where, for example, we take account of the consent standards imposed by the environmental regulators.

Making comparisons

In order to gain a robust view of Scottish Water's efficiency, we have to ensure that our comparisons with the companies in England and Wales are robust. We have explained how we take account of the external

¹ The Environment Agency (EA) in England and Wales and the Scottish Environment Protection Agency (SEPA) in Scotland.

factors that could influence the costs of the water and sewerage undertakers. We will discuss this further in Chapters 8 to 10.

We collect a significant amount of information that relates to the factors that could influence Scottish Water's costs. Ofwat collects and publishes exactly the same information relating to the water and sewerage undertakers in England and Wales. We are therefore able to assess the materiality of each factor in terms of its impact on costs. In other words, we can assess whether each factor really does have an impact on costs and, if so, to what extent. We use statistical models to assess the significance of each factor. This is discussed in more detail in Chapter 8.

It is possible that some water and sewerage service undertakers will still face factors that are unique to them and which have an impact on their costs. An example of this would be the fact that companies which operate in and around London will face higher salary costs than those which operate elsewhere in the UK. The companies cannot fully control these costs. If Scottish Water faces factors such as this that are outside its control, then it needs to identify the particular factors and present a case to us. If the justification is robust then the factors would be taken into account. This process is set out in detail in Chapter 10.

Water and sewerage service undertakers are likely to face many different factors that could affect their costs. This is especially true of undertakers that cover large geographic areas or have a very mixed customer base. For example, Severn Trent Water's area includes the West Midlands conurbation as well as some rural areas in Wales. This diversity means that the company is likely to face a mixture of high and low cost factors; as a result, the overall effect may be neutral if some of the factors balance out.

In carrying out our analysis of relative efficiency, we make reference to a number of annual reports, published by Ofwat, which relate to the performance of the water and sewerage companies. These reports include rankings of the companies, for example in terms

of efficiency and customer service. They allow us to check that our approach to assessing efficiency is fully consistent.

Once we have adjusted for external factors that are outside the control of management, we can use our comparisons to estimate the extent of excess internal costs and therefore relative efficiency.

7.4.3 Relative efficiency

We believe that our detailed approach to comparing Scottish Water with the companies in England and Wales takes account of the factors that materially influence costs. We are therefore able to reach robust conclusions regarding Scottish Water's relative efficiency.

Relative efficiency is how efficient Scottish Water is in comparison with the companies in England and Wales. We can make comparisons against individual companies or an average company (in either case, we refer to the relevant company as a comparator). For example, in 2002-03 we assessed that Scottish Water's operating expenditure was 159% of what we would expect an organisation with its characteristics to incur. In contrast, the average company in England and Wales incurred operating expenditure of 100% of what was expected. This means that Scottish Water was relatively inefficient. The most efficient company in England and Wales incurred expenditure of 87% of what was expected.

7.4.4 Efficiency gap

By assessing the efficiency gap we quantify the extent of relative inefficiency. We can calculate the size of the efficiency gap, as shown in Table 7.1.

Table 7.1: Calculation of Scottish Water's efficiency gap – 2002-03 example

	Efficiency gap
Scottish Water to average company in England and Wales	$(159-100)/159 = 37.1\%$
Scottish Water to most efficient company in England and Wales	$(159-87)/159 = 45.3\%$

We can also present this efficiency gap in cash terms. This is shown in Table 7.2.

Table 7.2: The efficiency gap in money terms – 2002-03 example

	Scottish Water's 2002-03 operating expenditure ² £m	Benchmark predicted operating expenditure £m	Efficiency gap £m
Scottish Water compared with average company in England and Wales	372.4	234.2	138.2
Scottish Water compared with most efficient company in England and Wales	372.4	203.7	168.7

The efficiency gap represents the amount by which Scottish Water would have to reduce its costs in order to be as efficient as the average or most efficient company. The size of the efficiency gap obviously depends on the relative efficiency of the comparator. The more efficient the comparator, the more the efficiency gap will increase.

In 2002-03, Scottish Water would have had to reduce its operating costs to £234.2 million in order to be as efficient as an average company in England and Wales. However Scottish Water would have had to reduce its operating expenditure to £203.7 million in order to be as efficient as the leading company in England and Wales. This assumes that Scottish Water provides the same level of service as the companies in England and Wales. We will discuss this assumption further in Chapter 14.

7.5 Question for consultation

1. Do respondents agree that our proposed 'top-down' approach to benchmarking will provide the most appropriate method of comparing Scottish Water's performance?

² In our benchmarking for 2002-03, controllable operating expenditure included the estimated running costs of Private Financing Initiative schemes for sewage treatment.

Section 3: Chapter 8

Ofwat's approach to assessing operating cost efficiency

8.1 Introduction

This chapter sets out the methods that Ofwat has developed to assess efficiency in operating expenditure of the water and sewerage companies in England and Wales. At the *Strategic Review of Charges 2002-06*, we adopted Ofwat's approach to assess the efficiency of the Scottish water industry. The efficiency targets that we set resulted from this analysis. We have continued to use the Ofwat models to monitor Scottish Water's progress towards achieving its efficiency targets and the results of this analysis are published in our annual *Costs and Performance Report*.

It is important to be sure that the methods that we use to assess efficiency are as robust as possible. Efficiency targets can be significant. For example, in the *Strategic Review of Charges 2002-06* we set Scottish Water a target to reduce annual operating expenditure by £136 million during the regulatory control period.

We believe that Ofwat's methods of assessing efficiency in the water and sewerage industry are robust and that they can be applied to Scottish Water. These methods have been developed over a number of years and are routinely used in the process of setting prices for the companies south of the border. They are also used to monitor efficiency on a yearly basis and the results of this analysis are published in Ofwat's annual report *Water and sewerage service unit costs and relative efficiency*.

In the *Strategic Review of Charges 2002-06*, we made only one minor change to the Ofwat models. This direct application of methods developed in England and Wales to the Scottish water industry has attracted criticism. Some commentators believe that such direct comparisons are unfair. In order to address those criticisms, we are considering the possibility of developing methods of comparing companies that would include Scottish Water in the information used to derive the benchmarking models. This chapter considers the current methods and possible developments. It includes:

- what we mean by benchmarking;

- the simple unit cost comparisons that we use;
- the Ofwat methods of benchmarking;
- a step-by-step guide to using the models; and
- how we have applied the Ofwat methods to the Scottish water industry, including:
 - criticisms of our approach,
 - how we intend to take forward work in this area for the *Strategic Review of Charges 2006-10*.

8.2 Benchmarking

Benchmarking is the process of comparing performance across (or within) organisations. We use the term benchmarking to describe the comparisons that we make between Scottish Water and the water and sewerage companies south of the border.

The benchmarking techniques that we use to assess relative efficiency involve high-level comparisons of Scottish Water with the companies in England and Wales.

8.3 Unit cost comparisons

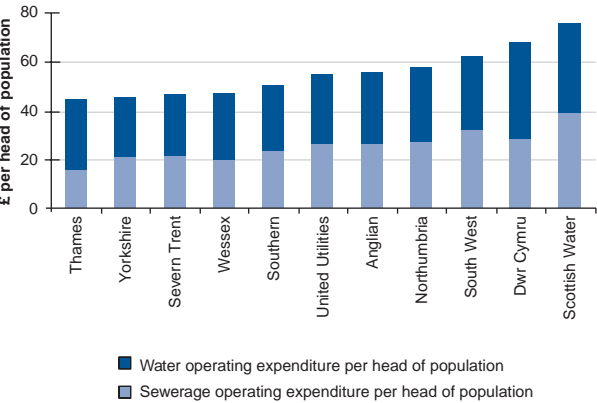
One of the simplest ways to benchmark the water and sewerage service providers in the UK is to use unit cost comparisons. Unit cost comparisons include factors that we believe are likely to impact upon costs, for example the number of customers served, the length of water mains and the length of sewers operated. We used these unit cost comparisons in the *Costs and Performance Report 2002-03*. Examples of the unit cost comparisons we make are given below:

- unit operating costs per head of population;
- unit operating costs per connected property;
- unit operating costs per property billed;
- water service operating costs incurred per kilometre of water main operated; and

- sewerage service operating costs incurred per kilometre of sewer operated.

Such unit cost comparisons are fairly simple to understand and it is easy to identify the apparently high cost organisations from the published results. Figure 8.1 illustrates this point.

Figure 8.1: Unit operating cost per head of population



It is easy to see which organisations appear to be low cost (Thames Water at one end) and those which appear to be high cost (Scottish Water at the other end).

However, although such comparisons are attractive in their transparency, they are a little too simplistic. We cannot rely upon such comparisons to give a robust indication of the relative efficiency of two companies. Water service operating costs incurred per kilometre of water main, for example, will also include other unrelated costs of the water service, for example water treatment costs. Each of the unit cost comparisons has similar weaknesses.

So although simple unit cost comparisons are broad indicators of efficiency, too much weight should not be attached to the results. As a result, we do not use these simple benchmarking techniques to underpin the efficiency targets. Efficiency is such a key element of the price setting process that we need to use more robust

techniques. For this reason, we use the more complex benchmarking methods that have been developed by Ofwat.

8.4 Ofwat's methods of benchmarking

Ofwat uses a top-down approach to benchmarking the English and Welsh companies and setting efficiency targets¹. It employs econometric modelling, a method that uses regression analysis to establish a relationship between the costs incurred by the companies and a number of cost drivers. These cost drivers take account of both engineering and economics.

8.4.1 History of the econometric models

The econometric models used by Ofwat were originally developed by Ofwat and Professor Mark Stewart of Warwick Business School in the early 1990s. They were used for Ofwat's 1994 price review. They were then reviewed in the late 1990s, with input from Professor Mark Stewart, and the revised models were used for Ofwat's 1999 price review. Both sets of models were published by Ofwat in January 1999. We used the 1999 version of the models to assess the efficiency of the Scottish water industry at the *Strategic Review of Charges 2002-06*.

Ofwat's approach to assessing the relative operating cost efficiency and the econometric models themselves were endorsed by the Competition Commission in August 2000, following a detailed review. This was a result of an appeal against Ofwat's 1999 price determination by two small water only companies, Mid Kent and Sutton & East Surrey.

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 information and analysis. The report, entitled *Adding it up: improving analysis and modelling in central government*, noted:

¹ The reasons for adopting a top-down approach are discussed in Chapter 7.

“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.”

8.4.2 The 2004 econometric models

In January 2004, Ofwat published a revised suite of models for comparing operating expenditure. These models are largely similar to those published by Ofwat in January 1999. The 2004 models have been re-estimated using 2002-03 information from the companies south of the border and will be used as part of the 2004 price review. There are nine models for operating expenditure²:

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

The purpose of each model is to establish a relationship between the costs reported by the companies and external cost drivers. These cost drivers have a significant impact upon costs but are outside the control of the management of the company. By controlling the principal external cost drivers in the models, we can determine relative efficiency with a high degree of accuracy.

The cost drivers that are included within the econometric models are known as explanatory factors. The models themselves take different forms. These are summarised in Table 8.1.

Table 8.1: Summary of econometric models and explanatory factors

Model	Model type	Explanatory factors
Water resources and treatment	Linear model for unit cost	Population, number of sources, distribution input, proportion of supplies from rivers.
Water distribution	Log unit cost	Population, proportion of total mains length with diameter > 300mm.
Water power	Log linear	Distribution input, average pumping head.
Water business activities	Log linear	Number of billed properties.
Sewer network	Log linear	Sewer length, area, resident population, holiday population.
Large sewage treatment works	Log linear	Total load, use of activated sludge treatment, tight effluent consent for both suspended solids and BOD ₅ .
Small sewage treatment works	Unit cost	Works size, works type, load.
Sludge treatment and disposal	Unit cost	Weights of dry solids, disposal route.
Sewerage business activities	Unit cost	Number of billed properties.

Each of these models is detailed below.

Water resources and treatment

This model predicts the costs associated with water resources, the treatment process and the operating environment. Specifically, it takes into account economies of scale³ at water source level and the extra

² There are eight econometric models for assessing capital maintenance efficiency, hence the 17 models referred to by the Performance and Innovation Unit in its report.

³ 'Economies of scale' describes the situation where the unit cost of producing one unit of output falls as the number of units produced increases. 'Diseconomies of scale' describes the situation where the unit cost of producing one unit of output increases as the number of units produced increases. 'Constant returns to scale' describes the situation where the unit cost of producing one unit of output remains constant no matter how many units are produced.

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

Ofwat reviewed this model following an industry workshop in September 2002. Alternative models were developed and tested. Ofwat concluded that the improvements were insufficient to justify a switch from the current model. The basis of the model has therefore not changed since the 1999 price review. The model was published in January 2004⁴ and was developed from 2002-03 information from the companies south of the border. We show the results of the regression analysis in Table 8.2.

Table 8.2: Ofwat’s model for water resources and treatment operating expenditure

Water resources and treatment		
Modelled cost:	Resources and treatment functional expenditure (£m) less power expenditure (£m), less Environment Agency charges (£m), divided by resident population (millions)	
Explanatory variables	Coefficient	Standard error
Constant	1.485	1.927
Number of sources divided by distribution input (Ml/d)	16.770	6.268
Proportion of supplies derived from river sources	5.124	2.449
Statistical indicators:	Number of observations: 22	R ² : 0.274

(Resources and treatment expenditure less Environment Agency charges less power expenditure) / resident population = 1.485 + 16.770 x (number of sources / distribution input) + 5.124 x (proportion of supply from rivers)

Water distribution

At the 1999 price review, Ofwat carried out a thorough review of the potential cost drivers for water distribution. There was no evidence to suggest that mains length was a material cost driver. The length of water mains was statistically inferior to alternative measures of scale. However, analysis showed that the length of large diameter mains (300mm diameter or more) was statistically significant. This result is not surprising given that repairs, maintenance and inspection on large mains are likely to incur much greater costs than those on

small mains. The model also reflects the higher costs of operating in urban areas, where the density of underground services and traffic congestion can impair productivity.

The 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 of water. This reduces the potential to penalise companies with low leakage and/or low demand.

As with the water resources and treatment model, Ofwat reviewed the water distribution model following an industry workshop in September 2002. Alternative models were developed and tested. Ofwat again concluded that the alternative models did not provide a sufficient improvement to justify a switch from the current model. The basis of this model has also not changed since the 1999 price review. The model shown in Table 8.3 was published in January 2004⁵ and was developed from 2002-03 information from the companies south of the border.

Table 8.3: Ofwat’s model for water distribution operating expenditure

Water distribution		
Modelled cost:	Log to base e of ((distribution functional expenditure (£m) less power expenditure (£m), divided by resident population (millions)	
Explanatory variables	Coefficient	Standard error
Constant	-5.203	0.160
Length of main greater than 300mm diameter / total length of main	5.165	1.943
Statistical indicators:	Number of observations: 22	R ² : 0.261

Log to base e of ((distribution functional expenditure less power expenditure) / resident population) = -5.203 + 5.165 x (proportion of large diameter mains)

Water power

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

⁴ Ofwat, *Water and sewerage service unit costs and relative efficiency 2002-03 report*, January 2004.
⁵ Ibid.

tariffs. The model shown in Table 8.4 was published in January 2004⁶ and was developed from 2002-03 information from the companies.

Table 8.4: Ofwat's model for water power operating expenditure

Water power		
Modelled cost:	Log to base e of power expenditure (£m)	
Explanatory variables	Coefficient	Standard error
Constant	-9.081	0.245
Log to base e of (distribution input (M/d) x average pumping head)	0.940	0.023
Statistical indicators:	Number of observations: 22	R ² : 0.989

Log to base e of power expenditure = $-9.081 + 0.94 \times \log \text{ to base e of (distribution input x average pumping head)}$

Water business activities

This model relates business activity costs (including customer services, scientific services and the charge for doubtful debts) to the number of billed properties. It recognises that there are economies of scale. Other potential cost drivers, for example the number of complaints, are within the control of management and so are not considered valid explanatory factors. The model shown in Table 8.5 was published in January 2004⁷ and was developed from 2002-03 information from the companies south of the border.

Table 8.5: Ofwat's model for water business activities expenditure

Water business activities		
Modelled cost:	Log to base e of business activities expenditure (£m) plus doubtful debts (£m)	
Explanatory variables	Coefficient	Standard error
Constant	-3.916	0.255
Log to base e of number of billed properties (thousands)	0.949	0.040
Statistical indicators:	Number of observations: 22	R ² : 0.966

Log to base e of (business activities expenditure plus doubtful debts) = $-3.916 + 0.949 \times \log \text{ to base e of (number of billed properties)}$

Sewer network

This model expresses costs per unit length of sewer. It takes into account the amount of sewage being

transported through the sewerage system. This is a function of area since this will affect surface water drainage volumes. Costs associated with remoteness are also a function of area. Sewer network costs are also a function of population since this will impact on sewage volumes. The model takes account of the higher costs expected in regions with a significant holiday population. The model shown in Table 8.6 was published in January 2004⁸ and was developed from 2002-03 information from the companies south of the border.

Table 8.6: Ofwat's model for sewer network operating expenditure

Sewer network		
Modelled cost:	Log to base e of sewer network expenditure (£m) less Environment Agency charges (£m), per kilometre of sewer for each area	
Explanatory variables	Coefficient	Standard error
Constant	-6.515	0.313
Log to base e of area of sewer district per kilometre of sewer	0.179	0.032
Log to base e of residential population per kilometre of sewer	0.432	0.169
Holiday population divided by resident population	0.715	0.501
Statistical indicators:	Number of observations: 64	R ² : 0.457

Log to base e of sewer network expenditure less Environment Agency charges per kilometre of sewer = $-6.515 + 0.179 \times (\log \text{ to base e of area of sewer district per kilometre of sewer}) + 0.432 \times (\log \text{ to base e of residential population per kilometre of sewer}) + 0.715 \times (\text{holiday population/resident population})$

Large sewage treatment works

The large sewage treatment works model covers those sewage treatment works serving a 'population equivalent' of at least 25,000. Population equivalent is a measure of the amount of sewage treated, both domestic and industrial, expressed in terms of the number of domestic customers required to produce a similar strength and volume of sewage.

The model takes into account the sewage load reaching the treatment works; the type of treatment in place (activated sludge increases power costs); and the quality of the discharged effluent required to meet environmental standards. The model has been changed since the 1999 price review. Secondary biological treatment is now no longer included as an explanatory

⁶ *ibid.*

⁷ *ibid.*

⁸ *ibid.*

factor. The more demanding environmental standards and more complex treatment processes installed at large sewage treatment works have reduced the explanatory value of secondary biological treatment process for differences in costs between works.

The model, shown in Table 8.7, exhibits considerable economies of scale in the treatment of sewage at the level of individual works. It was published in January 2004⁹ and was developed from 2002-03 information from the companies south of the border.

This model uses average unit costs across England and Wales. The model therefore requires less information than the large works model. This is a necessary simplification given that there are thousands of small sewage treatment works. The cost matrix takes into account the size of the works – there are significant economies of scale – and the type of treatment process. The model shown in Table 8.8 was published in January 2004¹² and was developed using 2002-03 information from the companies south of the border.

Table 8.7: Ofwat's model for large sewage treatment works operating expenditure

Large sewage treatment works		
Modelled cost:	Log to base e of functional expenditure on sewage treatment at large works (£000) less Environment Agency charges (£000) and terminal pumping costs (£000)	
Explanatory variables	Coefficient	Standard error
Constant	-1.455	0.253
Log to base e of total load ¹⁰	0.754	0.028
Tight effluent consent for both suspended solids and BOD ₅ ¹¹	0.060	0.051
Activated sludge used	0.353	0.054
Statistical indicators:	Number of observations: 369	R ² : 0.715

Log to base e of large sewage treatment works expenditure less Environment Agency charges and terminal pumping costs = $-1.455 + 0.754 \times (\log \text{ to base e of total load}) + 0.06 \text{ if tight effluent consent for both suspended solids and BOD}_5 + 0.353 \text{ if activated sludge used.}$

Small sewage treatment works

Table 8.8: Ofwat's model for sewer network operating expenditure

Cost of small sewage treatment works										
This is a unit cost model. Each company's average annual expenditure divided by the total load treated at each works is compared with the weighted average industry cost.										
	Weighted average industry unit cost £000s/(kg BOD ₅ /day)									
	Primary	Secondary activated sludge	Secondary biological	Tertiary A1	Tertiary A2	Tertiary B1	Tertiary B2	Sea outfall preliminary	Sea outfall screened	Sea outfall unscreened
Size band 1	0.78	1.04	1.00	1.07	0.72	0.69	0.92	10.89	-	0.32
Size band 2	0.33	0.83	0.59	0.62	0.38	0.49	0.55	-	-	0.05
Size band 3	0.33	0.46	0.31	0.43	0.33	0.30	0.39	0.43	0.04	0.01
Size band 4	0.30	0.21	0.16	0.20	0.29	0.16	0.19	0.01	0.10	0.01
Size band 5	0.24	0.14	0.11	0.14	0.16	0.10	0.12	0.01	-	-
Number of observations: 500										

⁹ Ibid.

¹⁰ For the purposes of this model, total load is estimated as population equivalent x 120.

¹¹ Tight effluent consent is defined as 30 mg/litre or less suspended solids and 20 mg/litre or less BOD₅.

¹² Ibid.

Sludge treatment and disposal

Table 8.9: Ofwat's model for sludge treatment and disposal operating expenditure

Cost of sludge treatment and disposal								
This is a unit cost model. Each company's average annual expenditure is divided by the amount of sludge disposed to each disposal route and this is compared with the weighted average industry cost.								
	Weighted average industry unit cost £000s/(thousand tonnes of dry solids)							
Disposal route	Farmland - untreated	Farmland - conventional	Farmland - advanced	Incineration	Landfill	Composted	Land reclamation	Other
£000/ttds	-	198.2	255.9	161.6	208.6	205.2	140.7	118.4
Number of observations: 80								

This model compares the costs of sludge treatment and disposal to the volume treated and the possible methods of disposal. The model uses average unit costs across England and Wales. The unit cost approach is again a necessary simplification given the large number of sludge treatment and disposal facilities.

Ofwat has changed the 1999 model because the disposal routes used by the companies have changed. This is primarily the result of more stringent environmental legislation. One example of this is that in 1999 there was a unit cost for the disposal of sludge at sea; this has now been outlawed by European legislation.

The revised model, shown in Table 8.9 above, was published in January 2004¹³ and was developed using 2002-03 information from the companies south of the border.

Sewerage business activities

This model uses an average unit cost per billed property across England and Wales. There are too few sewerage companies of sufficiently different size to allow economies of scale to be estimated. The model, shown in Table 8.10, was published in January 2004¹⁴ and was developed from 2002-03 information from the companies south of the border.

Table 8.10: Ofwat's model for sewerage business activities operating expenditure

Sewerage business activities	
This is a unit cost model. Each company's average annual business activities expenditure (plus doubtful debts) is divided by the number of billed properties. This is then compared with the weighted average industry cost.	
£/billed property	Weighted average industry unit cost
	11.77
Number of observations: 10	

8.5 Using the Ofwat models

Some stakeholders may wish to calculate predicted operating expenditure using Ofwat's models. In this section we provide details of the information sources necessary to apply each of Ofwat's models to Scottish Water. We provide references to Scottish Water's 2002-03 Annual Return, which is published on our website¹⁵.

Water resources and treatment model

Table 8.11: Water resources and treatment model: information sources¹⁶

Item	Model explanatory variable	Units	Scottish Water Annual Return reference	Units adjustment
A	Number of sources	Number	E4.5 c100	-
B	Distribution input	Megalitres per day	A2.38 c10	-
C	Proportion of supplies derived from river sources		E4.10 c200	-
D	Resident winter population	Millions	A1.71 c10	Divide by 1,000

¹³ Ibid.

¹⁴ Ibid.

¹⁵ www.watercommissioner.co.uk

¹⁶ Annual Return 2002-03 line number and column number references.

Water resource and treatment model: calculation

$$\begin{aligned} &\text{Predicted expenditure (£ millions) excluding power} \\ &\text{expenditure and SEPA charges} \\ &= D \times (1.485 + (16.770 \times A / B) + (5.124 \times C)) \end{aligned}$$

*Water distribution model***Table 8.12: Water distribution model: information sources**

Item	Model explanatory variable	Units	Scottish Water Annual Return reference	Units adjustment
A	Length of main greater than 300mm diameter	Kilometres	E6b.10 c199	-
B	Total length of main	Kilometres	E6b.8 c199	-
C	Resident winter population	Millions	A1.71 c10	Divide by 1,000

Water distribution model: calculation

$$\begin{aligned} &\text{Predicted expenditure (£ millions) excluding} \\ &\text{power expenditure}^{17} \\ &= \text{Exp} (C \times (-5.203 + (5.165 \times A / B))) \end{aligned}$$

*Water power model***Table 8.13: Water power model: information sources**

Item	Model explanatory variable	Units	Scottish Water Annual Return reference	Units adjustment
A	Distribution input	Megalitres per day	A2.38 c10	-
B	Average pumping head (resources and treatment)	Metres	E4.14 c150	-
C	Average pumping head (distribution)	Metres	E6b.16 c199	-

Water power model: calculation

$$\begin{aligned} &\text{Predicted expenditure (£ millions)}^{18} \\ &= \text{Exp} (-9.081 + 0.940 \times \text{Ln} (A \times (B + C))) \end{aligned}$$

¹⁷ Exp refers to the natural antilogarithm to base e = 2.71828.¹⁸ Ln refers to the natural logarithm to base e = 2.71828.*Water business activities model***Table 8.14: Water business activities model: information sources**

Item	Model explanatory variable	Units	Scottish Water Annual Return reference	Units adjustment
A	Number of billed properties	Thousands	A1.68 c10	-

Water business activities model: calculation

$$\begin{aligned} &\text{Predicted expenditure (£ millions) for business} \\ &\text{activities plus doubtful debt less local authority rates} \\ &= \text{Exp} (-3.916 + 0.949 \times \text{Ln} (A)) \end{aligned}$$

Water service expenditure: overall predicted cost

The overall predicted cost for the water service is calculated by adding together the predicted costs from each of the four individual models that we outlined above. It is important to note that the resulting prediction excludes the following areas of cost:

- SEPA charges (Table E1b line 1.6 column 999);
- local authority rates (Table E1b line 1.17); and
- third party costs (Table E1b line 1.25).

These should be added at this stage to assess the overall predicted cost for the water service.

*Sewer network model***Table 8.15: Sewer network model: information sources**

Item	Model explanatory variable	Units	Scottish Water Annual Return reference	Units adjustment
A	Area of sewer district	Square Kilometres	E7.5	-
B	Sewer length in district	Kilometres	E7.8	-
C	Residential population in district	Number	E7.1	Multiply by 1,000
D	Holiday population in district	Number	E7.2	Multiply by 1,000

Sewer network model: calculation

$$\begin{aligned} &\text{Predicted expenditure (£ millions) excluding SEPA} \\ &\text{charges, for each sewer district} \\ &= B \times \exp (-6.515 + (0.179 \times \ln (A / B)) + (0.432 \times \\ &\quad \ln (C / B)) + (0.715 \times D / C)) \end{aligned}$$

The reader should add the results for each district to calculate the total predicted expenditure on the sewerage network.

Large sewage treatment works model

Table 8.16: Large sewage treatment works model: information sources

Item	Model explanatory variable	Units	Scottish Water Annual Return reference	Units adjustment
A	Total load of works	5 day biological oxygen demand (mg / litre)	E9.5	Total load = population equivalent x 120
B	Tight effluent consent for both suspended solids and biological oxygen demand	0 = no 1 = yes	E9.11 E9.12	= 0 if Line 9.11 > 30 mg/litre or Line 9.12 > 20 mg/litre; otherwise = 1
C	Activated sludge process used	0 = no 1 = yes	E9.20	-

Large sewage treatment works model: calculation

$$\begin{aligned} &\text{Predicted expenditure (£ millions) excluding} \\ &\text{SEPA charges and terminal pumping costs, for} \\ &\text{each large works} \\ &= \text{Exp} (-1.455 + (0.754 \times \ln (A)) + (0.060 \times B) \\ &\quad + (0.353 \times C)) \end{aligned}$$

The reader should add the result for each large sewage treatment works to calculate the total predicted expenditure on large sewage treatment works.

Small sewage treatment works model

The reader should multiply the unit costs in Table 8.8 by the corresponding loads for each size band and works type reported in Scottish Water's Annual Return. The information in Table E8 lines 8.11 to 8.16 inclusive, should be multiplied by the information in columns 20 to 110 inclusive.

The reader should add each of the results to calculate the predicted expenditure in thousands of pounds for small sewage treatment works.

Sludge treatment and disposal

The reader should multiply the unit costs in Table 8.9 by the corresponding amount of sewage sludge that Scottish Water treats and disposes. This information is available in Scottish Water's Annual Return Table E10, line 10.2 and columns 10 to 50 inclusive.

The reader should add each of the results to calculate the predicted operating expenditure in thousands of pounds of Scottish Water's treatment and disposal of sludge. This does not include SEPA charges.

Sewerage business activities

The reader can obtain the number of billed properties for the sewerage service by summing the following information in the Annual Return Table A3:

A3.1 column 10
A3.14 column 10
A3.26 column 10
A3.73 column 10

The reader should then multiply this sum by the unit cost in Table 8.10, and then by 1,000.

This calculates the predicted expenditure on sewerage business activities in millions of pounds. The predicted expenditure includes doubtful debts but excludes local authority rates, SEPA charges and other costs listed below.

Sewerage service expenditure: overall predicted cost

The overall predicted cost for the sewerage service is calculated by adding together the results of the five individual models described above. It is important to note that the resulting prediction excludes the following areas of cost:

- SEPA charges (Table E2b line 2.6 column 999);
- local authority rates (Table E2b line 2.17);

- third party costs (Table E2b line 2.25); and
- terminal pumping costs at large works (Table E9 line 9.42).

These may be added at this stage.

Combined water and sewerage service predicted expenditure

The reader should add the overall water service and overall sewerage service results to calculate the predicted overall level of operating expenditure. The reader should also add the non-modelled costs – SEPA charges, local authority rates, third party costs and terminal pumping costs at large works in order to establish the predicted level of total operating costs.

We may review the non-modelled costs because we believe that Scottish Water can control these costs at least to some extent. We may therefore not add back the full extent of the reported non-modelled costs.

8.6 Application of the Ofwat methods to the Scottish water industry

At the *Strategic Review of Charges 2002-06*, we set targets for Scottish Water to achieve savings in operating expenditure. We assessed the size of the efficiency gap between the water industry in Scotland and the companies in England and Wales. One of the tools that we used to assess the size of that gap was the Ofwat suite of econometric models that had been developed for the 1999 price review in England and Wales. We set targets that reflected the results of those models.

8.6.1 Using the Ofwat models in 2001

The models that we used for the last review were published by Ofwat in January 1999 and were very similar to those we described earlier in this chapter. The models were based on 1997-98 information from the companies in England and Wales.

We collected information from the three authorities¹⁹ using the same format and definitions as Ofwat. This meant that we could apply the equations developed by Ofwat to the three authorities to assess their level of efficiency. We combined the information from the three authorities to assess the overall level of efficiency in Scotland. Our analysis was based on information from the three authorities relating to the financial year 2000-01.

We only made one change to the Ofwat models for the *Strategic Review of Charges 2002-06*. This change concerned the small sewage treatment works model. The previous explanation of the small works model showed that Ofwat identifies five size bands for such works. Size band 1 includes all works with a population equivalent up to 250. We took the view that many of the small works in Scotland were significantly smaller than this and therefore developed a new size band for works with a population equivalent up to 100 – we called this size band 0. Size band 1 for Scotland now covered works with a population equivalent of between 100 and 250.

We developed two new unit costs for Scotland – one for works in size band 0 and the other for works in size band 1 in Scotland. These unit costs were set out in the *Strategic Review of Charges 2002-06*²⁰. The unit costs for all of the other size bands were the same as those that had been developed by Ofwat. The unit costs of the very small works in size band 0 were high relative to those in the other size bands. This reflects the fact that it tends to cost more to treat sewage load at very small works. The small sewage treatment works model therefore continued to demonstrate economies of scale.

In all other respects, the models that we used to assess the relative efficiency of the Scottish water industry were the same as those published by Ofwat in January 1999.

8.6.2 Criticisms of the use of the Ofwat models

Some commentators have criticised our use of the Ofwat models for assessing the efficiency of the industry north of the border.

¹⁹ East of Scotland Water Authority, North of Scotland Water Authority and West of Scotland Water Authority.

²⁰ *Strategic Review of Charges 2002-06*, p81.

We discuss their arguments in detail in Chapter 10. In that chapter, we explain how we take account of genuine differences between the operating environments of Scottish Water and the companies south of the border.

However, it is worth stating that we do not believe that these differences mean that we cannot apply the Ofwat models to Scottish Water. We believe that we can identify and quantify the differences that exist. We are therefore able to make an appropriate allowance in our analysis for any such differences.

The Ofwat models are an objective method and since we can take differences into account, it seems appropriate to continue to use them.

8.6.3 The Strategic Review of Charges 2006-10

We therefore propose to continue to use Ofwat's econometric models for the *Strategic Review of Charges 2006-10*. We will also review the Ofwat versions of the models and, if possible, re-estimate the models including information from Scottish Water. We would maintain the same explanatory factors although it is likely that the coefficients of the models would change.

We would take account of the results of efficiency analyses using both the Ofwat models and the revised models in setting efficiency targets. In the next Chapter we discuss an alternative approach to assessing operating cost efficiency.

We will publish the results of this work in January 2005. We also propose to publish draft operating expenditure efficiency targets at that time.

8.7 Question for consultation

1. Do respondents agree that the Ofwat econometric models for operating expenditure should be extended to Scotland for the *Strategic Review of Charges 2006-10*? If not, what alternative method would they suggest.

Section 3: Chapter 9

An alternative method to assessing operating cost efficiency

9.1 Introduction

In the previous chapter we described the econometric models that were developed by Ofwat to assess the efficiency of water and sewerage providers in England and Wales. The purpose of this chapter is to set out an alternative method of assessing the efficiency of Scottish Water in operating expenditure.

The chapter begins by explaining why we propose to adopt two approaches to assessing Scottish Water's relative operating expenditure efficiency. We then explain why we developed an alternative model for the *Strategic Review of Charges 2002-06*. The chapter continues by describing how the model works. The chapter outlines:

- the structure of the model;
- the cost drivers;
- how we take account of economies of scale;
- how we adjust asset information to take account of differences in scale;
- how we calculate unit cost estimates for each driver; and
- how also we calculate predicted costs.

We also describe our use of the model since the last Review, and how we intend to use the model at the next Review. The chapter ends with our proposals to review the methods adopted by other regulators to assess relative efficiency to see whether those methods could be applied to the Scottish water industry, as well as our plans to develop the alternative model further.

9.2 Why we use two approaches

We have described how we review Scottish Water's performance in order to inform the efficiency targets that we set. Efficiency targets determine the amount that customers have to pay. It is vital therefore that our assessments are as robust as possible. We propose to use two independent, robust approaches to ensure that our targets are objective and properly justified.

In setting efficiency targets for Scottish Water in the *Strategic Review of Charges 2006-10*, we will need to

ensure that we do not set operating expenditure targets which are either too tough or too easy. It is not in the interests of customers to set targets that are either overly or insufficiently challenging.

- If the targets are too tough:
 - Scottish Water might only be able to meet them by reducing the level of service to customers; and
 - Scottish Water might fail to meet the targets, and customers' bills might have to increase to cover the higher than assumed operating costs.
- If the targets are too easy, customers' bills would be higher than they need to be.

9.3 Our approach in the Strategic Review of Charges 2002-06

At the time of the last Review we developed an alternative model to assess Scottish Water's efficiency. This model was used to check the results of the Ofwat econometric models. We recognised that it was desirable to check the results of Ofwat's models, and were aware that the Competition Commission had concluded that, although the Ofwat econometric models were robust, alternative models could have a place in efficiency analysis. The Commission expressed this view in 2000 following an appeal against Ofwat's 1999 price determination by two small water only companies, Mid Kent and Sutton & East Surrey.

In developing an alternative model we took particular care to use a different approach to Ofwat's econometric models. We needed an approach that could provide an independent check on the results given by Ofwat's models. The value of the alternative model as an independent check would have been reduced if the basis of the model differed only slightly from the Ofwat models.

Our alternative model is based on the premise that most running costs are driven by asset use, volumes and/or customers. The model calculates the impact of each of these cost drivers separately for a number of activities.

By contrast, the Ofwat models examine the interrelationships between drivers, and focus on the drivers that explain the differences in the observed costs of the companies most effectively. There is no separation of the impact of each cost driver in the Ofwat models.

We are therefore confident that we developed an independent check on the results of the Ofwat models.

9.3.1 Structure of the alternative model

We developed our alternative model for the last review by using engineering and economic knowledge of the water and sewerage industry.

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

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

For each of these activities, we determine the principle factors that would affect comparisons of operating costs between Scottish Water and the water and sewerage companies in England and Wales. However, we are interested only in those factors that, in the short term, cannot be materially controlled by managers. For example, we would be interested in the number of treatment works a company operates, but not the

number of vehicles in its fleet. We explained the reasons for this in Chapters 6 and 7.

We use information from the Annual Regulatory Returns of Scottish Water and the English and Welsh companies. We also have access to commercially confidential company information that allows us to understand in more detail the relationships between costs and some of the factors that impact on those costs.

We use this information to predict what it would cost, on average, to carry out each of the activities listed above. We are most interested in the total predicted cost for all of the activities. Once we have calculated the predicted costs for each company and for Scottish Water, we can compare reported costs. Where reported costs are higher than predicted, we conclude that there is likely to be scope for improvement.

The approach also allows us to identify the leading companies. The leading companies are those whose actual costs are the lowest relative to the predicted level. Comparisons with leading companies can indicate the scope for improvement. However, we need to take into account any material factors that are not included in the model.

9.3.2 Cost drivers

We examined each of the ten activities listed above to determine the most appropriate cost drivers.

For some costs, it is not appropriate or possible to identify cost drivers that would allow us to make comparisons between Scottish Water and the English and Welsh companies in our modelling. We therefore exclude the following costs from our comparative analysis:

- Charges paid by companies in England and Wales to the Environment Agency for licences to abstract water (these charges vary by region and because of environmental factors. There is no equivalent charge at present in Scotland);
- Charges paid by companies in England and Wales to

the Environment Agency for discharge consents for sewage effluent (these charges also vary by region);

- Charges paid by Scottish Water to the Scottish Environment Protection Agency for discharge consents for sewage effluent;
- Local authority rates – rates are set by local authorities and cannot be compared between Scotland, England and Wales; and
- Third party costs – these comprise an assortment of costs imposed on the companies and Scottish Water in respect of, for example, diversions of mains and sewers to accommodate new road schemes, and the provision of bulk water supplies between companies.

Ofwat omits the same costs before using their econometric models.

We are able to identify appropriate cost drivers for all other costs. Tables 9.1 and 9.2 set out the cost drivers (for water and sewerage respectively) that we identified for each activity.

Table 9.1: Alternative model: cost drivers by activity for the water service

Activity	Cost drivers used in the model, associated with each activity				
	Assets operated	Asset attribute	Customers served	Volume	Other
Abstraction and treatment	Impounding reservoirs and lochs	Number and average size of each asset type	-	Annual distribution input ¹	Average pumping head ² in abstraction and treatment
	Burns and springs				
	River abstraction				
	Boreholes				
Distribution	Water treatment works				
	Water mains	Length of network	Resident connected population	Annual distribution input	Average pumping head in the distribution system
	Water pumping stations	Number and average size of each asset type			
Business activities	Service reservoirs and towers				
			Number of billed water customers – domestic (unmeasured, metered) non-domestic (unmeasured, metered)		Annual number of water samples taken
Bad debt					Annual revenue billed

¹ Distribution input is the volume of water put into supply (including all leakage).

² Average pumping head is the average lift through pumping of water put into supply. Pumping takes place as part of the abstraction and treatment processes, and within the distribution system, where treated water is provided to customers.

³ In simple terms, sewage load is a measure of the amount of treatment that is required to make sewage safe for the environment.

Table 9.2: Alternative model: cost drivers by activity for the sewerage service

	Cost drivers used in the model, associated with each activity				
Activity	Assets operated	Asset attribute	Customers served	Volume	Other
Sewage collection	Sewers	Length of network	Resident connected population	Volume per head	Size of area served
	Pumping stations	Number and average size			
	Storm outfalls	Number			
Simple sewage treatment	Sea outcrops - unscreened - screened	Number and average size	-	Load ³ treated	
	Preliminary treatment works				
	Primary treatment works				
	Public septic tanks	Number			
Complex sewage treatment	Secondary treatment works - using activated sludge process - using biological process Tertiary treatment works - using activated sludge process - using biological process	Number and average size		Load treated	
Processing sludge				Tonnes disposed (dry weight)	Disposal route (landfill, farmland, incineration, other)
Business activities	-		Number of billed sewerage customers - domestic (unmeasured, metered) non-domestic (unmeasured, metered)		Number of sewage samples taken
Bad debt					Annual revenue billed

We use information from Scottish Water and the water and sewerage companies about each of the cost drivers listed above. The aim is to build up a set of predicted costs associated with each driver, and to add up each of the predicted costs to obtain a prediction of the total cost of each activity. It is also necessary for us to take account of economies of scale, and this is discussed below.

9.3.3 Economies of scale in asset operation

In order to calculate each element of predicted cost, we could adopt an approach whereby we simply multiply each of the cost driver measures by a unit cost. For example, we could calculate a unit cost per length of water main and multiply that by the length of main to get a predicted cost for each company.

However, for most areas of activity, the bigger the asset, the lower the unit cost of operation. These economies of scale are significant in the water industry. This is not only a function of the size of the company, although that can be important, but is also a function of the type and quantity of the assets. For example, Scottish Water operates sewage treatment works that are, on average, much smaller than those typical of the companies in England and Wales. These assets cost more per unit of sewage treated because of their size.

We therefore need to model how the size of the assets affects expected costs. Although it can be difficult in practice to quantify the effects of economies of scale, the model allows us to test assumptions over a range of values. We can also use the model to make a separate assessment for each asset category. We have used two assumptions:

Assumption 1: costs of operating the water main and sewer network vary with the length of that network raised to the power 0.8, with a likely maximum range of plus or minus 0.2.

Assumption 2: costs of operating sources, pumping stations, storage facilities and treatment works vary with the size of each asset raised to the power 0.7, with a likely maximum range of plus or minus 0.2.

The mathematical effect of raising to the power 0.8 and 0.7 is that the relationship between asset size and operating cost is not a linear one. Instead, operating cost rises less steeply than asset size. We illustrate this in Table 9.3.

Table 9.3: Comparison of linear relationship and power relationship between operating cost and asset size

Size (arbitrary units)	Linear (power = 1.0)	Power = 0.8	Power = 0.7
	Cost (arbitrary units)		
1	1	1	1
2	2	1.74	1.62
5	5	3.62	3.09
10	10	6.31	5.01
100	100	39.81	25.12

Our assumptions are based on analysis of the relationships between asset size and costs. We have gathered this information in regulatory returns. We recognise that this will not allow us to establish precise mathematical relationships. We therefore consider ranges for the power factors that we use to model economies of scale. We can calculate the effect of various assumptions within the stated ranges on the predicted costs, and so determine how sensitive our results are to the initial assumptions.

9.3.4 Adjusting asset information to accommodate economies of scale

We need to compare the assets operated by each company and by Scottish Water on an equivalent like-for-like basis. This ensures that the alternative model takes account of economies of scale. We use information about the size of the assets operated by each provider and our estimated economies of scale to determine a 'standard' size for each type of asset within the model. For example, across the UK there are many different sizes of water treatment works. We use the information regarding the sizes of these works and an assumption about the economies of scale that apply to such works to determine a single 'standard' size of works across the industry. We are then able to calculate how many such 'standard' sized works each water and sewerage service provider has in its asset base. Given that we estimate just one 'standard' size for each asset type within the model, we are then able to calculate a single unit cost for each asset type.

We illustrate this with an example in Table 9.4

Table 9.4: Example calculation of a standardised number of assets

	Calculation	Company A	Company B	Company C	Company D
No of treatment works	(a)	10	20	50	100
Total capacity	(b)	500	500	500	500
Average size	(c) = (b)/(a)	50	25	10	5
Relative average size	(d) = (c) rebased to sum to the number of companies	2.222	1.111	0.444	0.222
Economies of scale adjustment	(e) = (d) ^{0.7}	1.749	1.076	0.567	0.349
Equivalent number of standardised treatment works	(f) = (a) x (e)	17.5	21.5	28.4	34.9

In this example, there are four companies, each with an equal total capacity to treat water. Company A has 10 large treatment works, while Company D has 100 small works. Companies B and C lie between these extremes. We assume that there is a relationship between the size of each treatment works and its operating cost, such that:

$$\text{operating cost} = k \times \text{size}^{0.7} \text{ (where } k \text{ is some constant)}$$

We use this assumption to calculate an equivalent number of standardised treatment works for each company. This standardised number of treatment works takes account of the effects of economies of scale on costs. For example, if we compare Companies A and D in the table above, we conclude that Company D should incur double the operating costs of Company A. This assumes that our estimate of the relationship between size and operating cost is correct. We can see from Table 9.4 that the smaller the average size of works, the greater the relative burden of cost to treat the same amount of water.

Our calculation is, of course, more complex than the simplified example given above because no two companies have precisely the same total capacity for any type of asset. Nevertheless, we are able to standardise asset numbers for all water and sewerage companies.

Once we have established a standardised number for each type of asset we are then able to apply an estimated unit cost to each asset.

We assume that economies of scale do not apply to the other non-asset costs. The model simply uses the information on customer numbers, volumes and so on provided by the companies. We do not believe that this is a material assumption. This is because in terms of overall size Scottish Water is mid range in its customer base, the volumes it treats and so on. This assumption should not therefore distort any comparison of Scottish Water with the English and Welsh companies. We would also note that in recent assessments, the leading companies have proved to be smaller in scale than Scottish Water.

9.3.5 Unit cost estimates

The unit cost estimates are determined in a number of ways. These depend on the source and accuracy of the available information. The unit costs fall into the following categories:

- Category 1 – calculated directly from England and Wales or UK information;
- Category 2 – calculated to sum to reported England and Wales or UK information;
- Category 3 – internal Ofwat/Water Industry Commissioner figure based on company evidence;
- Category 4 – figure derived from the econometric models;
- Category 5 – plausible estimate; and
- Category 6 – balancing item, used where necessary to ensure that the model accurately reproduces total reported industry costs for an activity.

Prudent ranges are input to the model in a standard risk analysis software package. We need to be able to assess the effect of a change in any of our assumptions

on the results calculated by the model. This is important because there are uncertainties concerning the degree of economies of scale and in our estimates of unit costs.

Earlier in the chapter, we showed the ranges we regard as prudent for our estimates of economies of scale. Below we show the maximum ranges that we believe are appropriate for our estimates of unit costs:

- Category 1 = +/- 20%
- Category 2 = +/- 25%
- Category 3 = +/- 33%
- Category 4 = +/- 50%
- Category 5 = +/- 50%
- Category 6 = +/- 50%

We have, wherever possible, used direct calculations from reported information to arrive at our estimates of unit costs. However, this is not possible for some of these estimates. The unit cost estimates (as a percentage of all of the unit cost estimates used in the model) break down as follows:

- Category 1: 40%
- Category 2: 10%
- Category 3: 10%
- Category 4: 15%
- Category 5: 20%
- Category 6: 5%

Calculating predicted costs

We multiply the unit costs for each asset cost driver by the number of 'standard' assets to arrive at a predicted cost for each of the ten activities of the business. We multiply the unit costs for customers, volumes and other drivers by the information reported by the companies and by Scottish Water on these items. This results in an additional predicted cost for each of the ten activities. We then sum, for each activity, all of the relevant predicted costs. This tells us the average expected operating expenditure of that activity for each company and for Scottish Water.

We then combine the ten areas of the model to determine

⁴ In order to calculate an efficiency score for Scotland in 2001-02, we combined the data that had been submitted by the three predecessor authorities: East of Scotland Water Authority, North of Scotland Water Authority and West of Scotland Water Authority.

the overall predicted operating expenditure of each water and sewerage undertaker. Comparing this predicted cost with the actual cost reported by each undertaker gives us an initial indication of the level of efficiency.

In order to draw more robust conclusions, however, we need to take into account any other explanatory factors. We follow the same process as described in Chapter 7 to adjust our results to take account of particular factors that we did not explicitly model, any corrections to reported information, adjustments for anomalies in the allocation of costs, etc. This process can lead either to an adjusted predicted cost or an adjusted reported cost, depending on the reason for the adjustment. For example, a correction made to a reported cost driver would alter the predicted cost, by changing the calculation in the model. An adjustment to reallocate a reported cost would change that reported cost. In both cases, there would be a change in our assessment of relative efficiency.

As with the econometric models, we calibrate the efficiency results for the English and Welsh companies such that the average is equal to 100.

9.4 How we have used the alternative model

At the *Strategic Review of Charges 2002-06*, we used our alternative model as an independent check on the results that we obtained from Ofwat's econometric models. The alternative model gave similar results to the econometric models. We have continued to obtain relatively consistent assessments for subsequent years. This is illustrated in Table 9.5

Table 9.5: Comparison of efficiency scores for Scottish Water

	Econometric models score	Alternative model score
Scotland 2001-02 ⁴	163	165
Scottish Water 2002-03	159	156

Scottish Water benefited from greater economies of scale than the three authorities. Ofwat's models take some account of overall economies of scale, whereas

the alternative model does not. This explains in part why the alternative model score was more favourable than the econometric model score in 2002-03.

The scores from both models do not differ significantly. This gives us confidence that our estimate of the efficiency gap between Scottish Water and the companies in England and Wales (originally derived from the Ofwat econometric models) is correct to within a small margin.

At the *Strategic Review of Charges 2002-06*, we did not use the alternative model to set efficiency targets for Scottish Water.

9.5 Future developments of the alternative model

In developing this model, we wish to ensure that both the econometric modelling and our alternative approach are consistent. It could be argued that this model should benefit Scottish Water more than the Ofwat econometric models. This is because the model is more asset-based, so reflects the fact that Scottish Water operates a larger and more dispersed asset base than is the norm in England and Wales.

No model can take all known factors into account, and it is possible to extend the tables above to incorporate other cost drivers. It would also be possible to break down activities into many more categories than we have used. However, the extent to which we can develop the scope of the alternative model is constrained by the information that is collected by Ofwat.

When we originally developed the alternative model we calculated the standard size of assets and the unit costs for each of the standard assets on the basis of information from the water and sewerage companies in England and Wales. This was because the three water authorities did not have sufficiently robust information regarding their assets and the associated costs.

However, we now believe that Scottish Water's information on assets and costs may be sufficiently robust to include it within the base calculations of the

model. We therefore propose to look at developing a revised version of the alternative model that includes Scottish Water within the 'standard' unit cost calculations.

We do not yet know the impact of developing a revised Scottish version of the model. It does seem likely that including Scottish Water within the base calculations will have an impact on both the UK 'standard' size of an asset and the unit cost associated with that asset. The combined effect will almost certainly alter our assessment of Scottish Water's *absolute* level of efficiency; ie the difference between the operating cost predicted by the model and the actual cost reported by Scottish Water. Our focus is, however, on Scottish Water's *relative* efficiency.

We propose to carry out this analysis over the next few months. We propose to publish our draft operating expenditure efficiency targets in January 2005.

9.6 Questions for consultation

1. What are your views on this alternative model?
2. What other approaches to the assessment of the scope for operating efficiency would you suggest? How would these work?

Section3: Chapter 10

Ensuring modelled results are objective and fair

10.1 Introduction

As Chapters 8 and 9 outlined, we assess Scottish Water's relative operating expenditure performance by benchmarking its performance against that of the companies south of the border. It is vital that we make these comparisons on a like-for-like basis.

Our models cannot take account of all of the factors that influence cost. Some of these factors (ie those that are within the control of management) we consider should be excluded from any comparison. Others may either increase or decrease the level of cost. Such factors may relate to the operating environment or the level of service provided to customers.

We need to take account of all of these differences. For that reason, we ask Scottish Water to draw to our attention all factors (those not included in the models) that influence cost. This should include factors that both increase or decrease cost. We explain this process in detail in this chapter.

Structure of this chapter

Section 10.2 of this chapter:

- examines differences in the levels of service and scope of activities between Scottish Water and the companies in England and Wales, and their impact on operating costs.

In Section 10.3 we:

- discuss how we could account for these differences fairly in our assessments of operating cost efficiency.

In Section 10.4 we:

- examine the wider factors of Scotland's geography and population patterns, and their potential impact on Scottish Water's costs;
- look at how the extent and quality of Scottish Water's assets might influence costs;
- identify issues concerned with the customer base,

public sector ownership and timescales that may be considered to affect costs.

In Section 10.5 we:

- briefly discuss the approach taken by Ofwat and Ofgem to such adjustments;
- set out the criteria that we intend to use for reaching decisions about the nature and extent of adjustments in the Strategic Review;
- review the initial claims put forward by Scottish Water.

10.2 Differences in levels of service and scope of activities

In the *Strategic Review of Charges 2002-06*, we took a conservative approach to determining the relative operating cost efficiency of the three former water authorities. In particular, we did not take full account of differences in the scope of the activities carried out by the undertaker, nor of the levels of service provided to customers. Our targets did not seek to quantify the cost of the extra scope of company activities south of the border or the improved level of service provided to customers.

We adopted this approach partly because the information that was available at that time was limited and partly because we wanted to ensure that the targets for improving efficiency would be achievable.

We now have much better information about Scottish Water's activities and the quality of service it provides. In the light of this, we propose to adjust our approach to target setting in the *Strategic Review of Charges 2006-10*. In order to ensure that we are comparing Scottish Water with the companies south of the border on a fully like-for-like basis in the review, we need to take account of any differences between the approach we take and that which Ofwat adopts.

In England and Wales the companies provide a broadly equivalent service to their customers. The scope of company activities is also comparable. In general, Ofwat does not therefore have to adjust the result of its models

to reflect any differences in the scope of activities or the level of service.

In Scotland, there are considerable differences in both the scope of activities and the level of service provided to customers. These differences matter to customers. This impacts not only the service they receive, but also the price they pay.

In our latest Costs and Performance Report (covering the year 2002-03), we estimated that customers in Scotland pay £1.59 for what would cost £1.00 in England and Wales, not including these differences in scope and the level of service. After these differences are taken into account, customers in Scotland pay £1.86 for what would cost £1.00 in England and Wales. If differences in the level of service and scope of activities are taken into account the efficiency gap is likely to increase significantly.

10.2.1 Differences in scope of activities

The scope of Scottish Water's activities is in large part a function of the history of the water and sewerage industry in Scotland. In essence, the industry differs from that in England and Wales in the following ways:

Activities where the scope of activities in Scotland is greater:

- 'Non-core' activities not required as part of basic service provision are carried out within the one business, whereas in England and Wales they are separate. We are currently working with Scottish Water to separate core and non-core elements of the business. This is discussed in Volume 2, Chapter 11 of our methodology.
- Scottish Water is responsible for lateral sewers (sewer pipes connecting properties to main sewers). Lateral sewers are the responsibility of customers in England and Wales.
- Scottish Water is responsible for public septic tanks in Scotland. These are common in Scotland but very rare in England and Wales.

Activities where the scope of activities in Scotland is less:

- Around one-quarter of all households are metered in England and Wales, compared with around only 0.1% in Scotland.
- Sophisticated water treatment processes to remove agricultural nitrates and pesticides are commonly required in England and Wales. Such processes are rare in Scotland, which is apparently because farming in Scotland is less intensive.
- Companies in England and Wales have to maintain leakage at specified, economic levels. There are currently no leakage targets in Scotland.
- Companies in England and Wales have a legal duty to promote the efficient use of water by customers, whereas there is no such duty in Scotland.

There are other differences that affect the scope of activities, such as major differences in population density and topography. However, we believe that our benchmarking analysis takes account of most, if not all, of such differences.

10.2.2 Differences in levels of service

Companies in England and Wales made sustained progress in improving levels of service to customers and the environment during the 1990s. Scotland has not matched these improvements. There is, therefore, a significant gap in the level of service provided to customers in Scotland relative to that received by customers south of the border.

The main areas where the level of service in Scotland lags behind England and Wales are in terms of the:

- quality of water supplied;
- availability of water;
- water pressure;
- performance of sewage treatment works against environmental standards;

- way in which complaints from customers are handled;
- way in which billing enquiries from customers are handled; and
- way in which domestic customers are billed.

Obviously, it would cost more to deliver the improved level of service that is provided to customers south of the border. In setting efficiency targets we propose to take into account any such differences in the level of service provided when we establish the scope for improvement in efficiency. This will put the onus on Scottish Water to make a claim for new (extra) operating expenditure in order to improve the level of service to customers.

10.3 Issues and options

Taking account of differences in the levels of service that are provided to customers either side of the border is not a straightforward process. The main issues are:

- the lack of reliable information about the cost of achieving a particular level of service; and
- the lack of reliable information about the cost of those activities which are only carried out by the companies south of the border.

In addition, a judgement has to be made about whether the focus should be on costs or on levels of service. For example, should we set targets for levels of service so that, over time, the gap with England and Wales is closed? Or, as we are suggesting, should we set more demanding efficiency targets and require Scottish Water to claim new operating costs relating to improving the level of service?

Our experience of monitoring performance has allowed us to identify a number of possible approaches for the *Strategic Review of Charges 2006-10*, as follows:

1. Use information from the companies south of the border to place a monetary value on the difference in scope of activities and levels of service (the method

we currently use in our annual Costs and Performance Report).

2. Ask Scottish Water to estimate the extra cost of providing both the equivalent scope of activities and level of service to England and Wales.
3. Commission an independent assessment of the extra cost that would be incurred in delivering the additional activities and the improved level of customer service.
4. Extend our models of operating efficiency to factor in variables of scope of activities and levels of service.
5. Ignore these differences in assessing relative efficiency, but make an appropriate adjustment (using information provided by the company, Scottish Water, or an independent source) to the price settlement.
6. Ignore these differences in assessing relative efficiency, but set targets to reduce or remove the differences in scope and levels of service.
7. Provide incentives and scope for Scottish Water to outperform efficiency targets by being selective about differences that we take into account.

We are keen to seek views on how to set targets that take account of differences in scope and levels of service. We discuss each of these options in more detail below.

Option 1: Use company information to place a monetary value on the difference in levels of service and scope of activities.

We use this method in our annual Costs and Performance Report where we assess Scottish Water's relative operating cost efficiency. Information from the companies south of the border allows us to make assessments of relative efficiency on a sound like-for-like basis. It allows us to exclude the companies' costs to deliver the better levels of service and broader scope of activity. It can, however, be difficult to obtain sufficiently detailed breakdowns of cost for some components of this analysis. A good example is the cost to companies of meeting leakage targets.

Option 2: Ask Scottish Water to estimate the extra cost of providing an equivalent scope of activities and level of service to England and Wales.

This approach could allow us to understand the cost that Scottish Water might incur to provide an equivalent level of service. Like option 1, it would enable us to make like-for-like comparisons. However, the use of cost estimates would weaken the reliability of the analysis.

Option 3: Commission an independent assessment for the monetary value/extra cost.

This approach could be used to reinforce initial results from either options 1 or 2. Such a project may prove to be relatively costly and it is not clear that it could replace option 1 or 2 completely.

Option 4: Extend our models of operating efficiency to factor in variables of scope and levels of service.

This would initially appear to be a relatively attractive option. It would combine the impact on costs of Scottish Water's operating environment, assets, customer base and levels of service in one set of econometric models. There are, however, two important drawbacks. Firstly, the current models are designed to exclude factors whose influence on costs is in some way controllable by managers. It would not be in customers' interests to reward a company for providing an unnecessary service. Secondly, it is not clear that the current models could be extended in this way. We doubt that the information is available either from the companies or from Scottish Water.

Option 5: Ignore differences in assessing relative efficiency, but make an appropriate adjustment (using information provided by the company, Scottish Water, or an independent source) to the revenue/price settlement.

Ofwat has adopted this approach in England and Wales. Ofwat measures a large cross-section of levels of service and combines them into an 'overall performance

assessment' (OPA) for each company. Ofwat consulted on the details of its proposed approach to linking service levels to prices in February 2002¹, and on the structure of its OPA in December 2003².

However, in England and Wales, the levels of service provided by companies are broadly similar. This reduces the importance of levels of service in comparative assessments of efficiency, and has allowed Ofwat to develop an approach that is designed to provide incentives for companies to improve levels of service (where this is economically justifiable). The significant gap between the levels of service provided by Scottish Water and those provided by companies south of the border may indicate that similar incentives are not yet appropriate in Scotland.

Option 6: Ignore differences in assessing relative efficiency, but set targets to reduce or remove the differences in scope and levels of service.

This option assumes that no account need be taken of levels of service in assessments of relative efficiency. The effect of this would be to understate the efficiency gap between Scottish Water and the companies. Our targets may not be sufficiently challenging and customers would, as a result, pay more than is strictly necessary. It may be possible to set targets for improvements in the level of service to customers within the price cap. This may potentially protect the customer interest but could make the assessment of performance less transparent. It could, for example, be difficult to trade-off reduced costs against changes in the level of service.

Option 7: Provide incentives and scope for Scottish Water to outperform efficiency targets by being selective about differences that we take into account.

This option could allow us to take account of levels of service in assessing relative efficiency, and provide targeted incentives designed to improve value for money for customers in Scotland. We believe that this approach could be more open to challenge (either from Scottish

¹ 'Linking service levels to prices', Ofwat, February 2002.

² 'Updating the overall performance assessment (OPA) – A consultation', Ofwat, December 2003.

Water or from customers/new entrants) unless we are able to show that we had developed an appropriate incentive scheme. It is likely that this option would require subjective judgement because it is unlikely to prove possible to develop a robust objective incentive scheme.

Table 10.1 summarises our initial thoughts on each of the options discussed. We regard the following criteria as important in assessing the advantages and disadvantages of the various options:

- Value to customers – the degree to which the approach is likely to provide value for money, in terms of better service or lower bills.
- Practicality – whether the approach is simple to use and whether relevant information can be provided on a reliable basis.
- Auditability – whether the approach lends itself to proper documentation of the information and analysis.
- Comparability – whether the approach is in line with our aim of comparing performance on a strictly like-for-like basis.
- Rigour – whether the approach can be relied on to provide an objective and accurate assessment.

Table 10.1: Summary of approaches to scope of activities and levels of service in our comparisons of operating expenditure performance

Potential approach	Value to customers	Practicality	Auditability	Comparability	Rigour
Use company information to derive a monetary value	High	Medium	Medium	High	Medium
Use Scottish Water estimates of cost to provide equivalent service	Low	High	Medium	Low	Low
Commission an independent assessment of the monetary value	Medium	Medium	Medium	Medium	High
Extend models to include levels of service and scope	Medium	Low	High	High	Low
Adjust final revenue cap instead of efficiency adjustment	Medium	High	Low	Medium	Medium
Set targets to align scope and levels of service with England and Wales	Medium	Low	Medium	Medium	Medium
Selectively apply analysis to promote incentives	Medium	Low	Low	Low	Low

10.4 Operating in Scotland

We want to ensure that our efficiency targets neither unduly penalise nor reward Scottish Water. Some commentators have argued that it is unfair to draw comparisons between Scottish Water's performance and that of the privatised water and sewerage companies in England and Wales. In particular, they question the application of Ofwat's econometric models in Scotland³. We believe that the fact that the Ofwat models have been successfully applied to companies as different as Severn Trent⁴ and South West Water⁵ and to both large water and sewerage companies⁶ and small water only companies⁷ confirm that the models can reasonably be applied in Scotland. While some new special factors may have to be taken into account, this does not invalidate the modelling process. It is also

³ See, for example, J Findlay, 'Financing the Scottish water and sewerage industry', paper to the Scottish Trades Union Conference, April 2004.

⁴ Severn Trent Water covers the West and East Midlands and a rural part of Wales.

⁵ South West Water covers Devon and Cornwall.

⁶ Thames Water has some 12 million customers.

⁷ Bournemouth (and West Hampshire) Water covers just the water service for the Bournemouth area.

noteworthy that those who seek to criticise the models do not advance any alternative approaches to ensure that customers receive value for money.

We consider that our comparisons with England and Wales will help to ensure that customers receive value for money in the next regulatory control period. Nonetheless, it is important to consider the views of commentators and to assess their validity.

Commentators who question our benchmarking process cite the following differences between the industry in Scotland and that south of the border:

- Scotland's geography (size, remote islands, long coastline, topography);
- its population settlement patterns (remote communities, concentrated dense urban areas);
- the extent of the assets required to serve customers in Scotland (long mains, small isolated treatment works);
- the quality of the assets inherited by Scottish Water (condition and performance of the mains, sewers, treatment works, pumps);
- the nature of the customer base;
- the fact that Scottish Water is in public ownership (political interest, Scottish Water's duty to Scotland, remit and freedom of management); and
- the short time that Scottish Water has had to mature and improve.

In our analysis for the next review, we plan to identify which parts of Scotland have similar demographic and geographic characteristics to those in England and Wales. At least for those parts of Scotland, there should be no grounds on which to argue that Ofwat's models are not applicable. We will pay particular attention to any areas that have demonstrably different characteristics. We would need to analyse the impact of remoteness on Scottish Water's operating costs. This analysis would also have to cover Scottish Water's concerns about the large number of small assets that it operates. In large

part these costs may be a function of population settlement patterns and geography.

It is worthwhile reviewing some of the differences that are cited by commentators and providing our initial response to the lines of argument.

10.4.1 Geography

Some would argue that Scotland's size, remoteness, long coastline and mountainous topography all place a burden on operating costs that is unlike the situation in England or even Wales. For example, size and remoteness can affect Scottish Water's ability to respond to system faults, a long coastline can affect the costs of transporting and treating sewage, and hilly topography means that many of Scottish Water's sources are small upland burns and streams with rapid variations in water quality.

We believe that this argument may have some merit. We have, however, placed the onus on Scottish Water to analyse its internal costs and other information, in order to make a robust case that quantifies the additional costs. It is of course important that this evidence also takes into account the circumstances of a number of the companies in England and Wales, where remoteness, coastline and topography may be a material factor. We believe that it is also important to recognise that not all of Scotland is dissimilar in geography to large parts of England and Wales.

10.4.2 Population settlement patterns

Commentators have claimed that the density of the population in Scotland is more varied (dense urban areas contrasting with sparsely inhabited areas) and, over large parts of Scotland, much lower than that in England and Wales. Moreover, the rural settlements, it is argued, tend to be smaller than their counterparts in England and Wales. As a consequence, Scottish Water's cost structure would be different and therefore it cannot be compared fairly with the cost structures of the companies south of the border. It is argued, for instance, that travel costs could be higher due to long distances in remote areas, a greater number of journeys to individual communities, and slow, heavy traffic in dense urban areas.

In our view, while there are differences in population settlement patterns, these should be seen in perspective. The large majority of Scotland's population lives in the central belt, where we would expect population density and settlement patterns to be very similar to much of England and Wales. Of the remainder, it is likely that a substantial part live in communities of similar size to rural communities in England and Wales, and that overall population densities are within the range found south of the border. The impact of any differences that do exist are likely to be limited to the costs of serving the more isolated communities in the Highlands and Islands. We will document detailed comparisons of population density and settlement size as part of our review, and will consider any evidence put forward by Scottish Water about the implications for its costs.

10.4.3 The extent of the assets required

The claim that Scottish Water requires a greater number of assets is an extension of the previous argument. As a general rule, remote, isolated communities require longer mains, longer sewers and their own small pumping, storage and treatment facilities for water and sewage. It is argued that this places an additional burden of costs on Scottish Water compared with a typical company.

Again, we believe that this claim may have some merit but, as with the previous point, it is important to understand which areas of Scotland are different. There is also a wider point, which is that the extent of the assets operated by Scottish Water and each company is an important factor in the benchmarking models that we use. We believe that in large part, the differences that do exist are accommodated in the models. We will review any evidence that Scottish Water provides in relation to the costs of its assets.

10.4.4 The quality of the assets inherited by Scottish Water

Some argue that Scottish Water inherited assets of poor quality from the three former authorities. They assert that the inherited assets are generally in poor physical

condition and perform badly, leading to higher operating costs to both repair and supervise the assets. Historic underinvestment in Scotland, relative to England and Wales, is cited as the root cause. In particular, it is claimed that Scotland has failed to match the levels of investment that have been delivered by the companies since privatisation in 1989.

On the basis of the evidence that Scottish Water has submitted so far, we would not be in a position to agree with this assertion. In our *'Investment and Asset Management Report 2002-03'*, we examine evidence on both the level of investment and the reported condition and performance of Scottish Water's assets. This evidence points to comparable levels of investment in Scotland and in England and Wales, and assets of comparable condition, for most categories of assets.

Our report found that, although there was higher investment in England and Wales in the initial years after privatisation, the cumulative amount of investment (per property) by the companies over the past 20 years has been similar to that in Scotland.

We will, of course, examine any new evidence produced by Scottish Water. We will test any such new evidence against the reported profiles of asset condition in the water and sewerage companies to determine whether there is a case where Scottish Water is at a disadvantage.

10.4.5 The nature of the customer base

Scottish Water has claimed that a larger proportion of its customers are claiming unemployment benefit than is the case in England and Wales. They suggest that customers' ability to pay is lower than that south of the border. Non-payment of bills would affect operating costs, because Scottish Water, like the companies, makes a provision in each year's accounts to cover any outstanding debt that it expects not to recover.

It could also be argued that Scottish Water's customer base differs from that in England and Wales in that it has:

- a greater proportion of customers in the manufacturing sector;
- a greater proportion of smaller non-domestic customers; and
- a much lower proportion of metered customers.

These differences could also affect operating costs. Some of these differences may benefit Scottish Water.

Although we recognise the problem of bad debt in Scotland, we believe that Scottish Water can do much to control this cost. In the case of non-domestic bad debt, there appears to be no obvious reason why Scottish Water should not have as much control as the companies. Domestic bad debt may be more problematic, as it is in part a function of the revenue recovery efforts of the local authorities. (Local authorities bill households on behalf of Scottish Water). Nevertheless, Scottish Water is able to influence the effectiveness of this service through liaison with local authorities.

Scottish Water has stated that it will submit evidence covering the total cost of the domestic billing process, including the costs and benefits of bad debt, billing, collection and metering in its 1st draft Business Plan.

10.4.6 Public and private sector ownership

There is a claim that our reliance on comparisons with private companies to induce increased efficiency from the management of Scottish Water, which is a public body, has no basis in economic theory⁸.

In our view, there are important questions to address here:

- Are there differences between public and private sectors that might affect the costs of operating a water and sewerage service?
- If so, should customers in Scotland be disadvantaged?

- Should a regulator act differently to deal with this?
- If the regulator acts differently, which factors should he consider?

Water and sewerage provision is a natural monopoly. It uses the same techniques, skills and knowledge in both the private and public sectors. Operating costs should reflect these important similarities.

Differences may emerge, however, in the constraints faced by managers. For example, in the private sector there are corporate overheads in terms of reporting to and engaging with equity shareholders and with the providers of debt. In the public sector, there may be greater corporate overheads in responding to elected representatives than is typical in the private sector. There is also a possibility that the freedom of managers to take decisions may be more or less impacted by the expectations of private and public sector stakeholders. We recognise that the pressures on Scottish Water are unique but we think that it is unlikely that they are more expensive to deal with.

We are not aware of any economic studies that have found any conclusive evidence that the type of ownership determines the efficiency of a water and sewerage business.

Indeed, Estache and Rossi⁹ analysed the efficiency of 50 public and private water and sewerage companies over 29 countries in Asia. They found that there was no significant difference in efficiency:

“Public firms that have to compete with new private entrants who enjoy the latest technology will often be expected to play catch-up or die. These firms should be able to achieve not only the industry gain but also specific gains to offset firm-specific inefficiencies. This catch-up effect is one of the expected benefits to consumers of yardstick competition if regulators can ensure that quality is not the adjustment variable for the least cost efficient firms. Yardstick competition – even implicit, as a consequence of studies of this kind that

⁸ J Findlay, 'Financing the Scottish water and sewerage industry', paper to the Scottish Trades Union Conference, April 2004.

⁹ 'How different is efficiency of public and private water companies in Asia?', The World Bank Economic Review, Vol. 16, No. 1, 2002, pages 139-148.

generate results forcing comparisons – should minimize the scope for major differences between public and private providers. In the end, the inconclusiveness of the comparison of efficiency in public and private water utilities may simply reflect the fact that competition matters more than ownership.”

AEI-Brookings Joint Center for Regulatory Studies issued a study analysing Latin American private and public water and sewerage companies. Again, this study concluded that “benchmark competition with private utilities encourages utilities that remain publicly owned to improve their own performance.”¹⁰

We see no reason why customers in Scotland should be disadvantaged because of perceived constraints of operating in the public sector. We will, however, review any evidence presented by Scottish Water that could justify a relatively higher level of operating cost compared with a private company.

10.4.7 Short time that Scottish Water has had to mature and improve

It is argued that the 1974 reorganisation of water and sewerage provision into ten regional water authorities in England and Wales provided the companies with a stable financial, physical and management environment in which to implement reform and develop good practice. Similar structural changes did not take place in Scotland until 1996. Scottish Water itself was only established in 2002. The merger process may also have acted more as a barrier to, than a catalyst for, improved efficiency.

It is claimed that, as a result, it is not surprising that Scottish Water finds itself at a disadvantage in terms of performance. It is also claimed that the short timescale for Scottish Water to improve is unfair.

We are not yet persuaded by these arguments for the following reasons:

- We see no reason why customers in Scotland should continue to have to pay more for a poorer service;

- We estimate that our published targets will, if achieved in 2006, take Scottish Water to a level of performance that is comparable with the leading company south of the border in the early 1990s;
- Objective comparison of the efficiency gap is not a criticism of current management, but rather a signal that customers should expect better value for money;
- The targets in the *Strategic Review of Charges 2002-06* took account of the rate of improvement of the companies in England and Wales – we did not ask Scottish Water to improve its efficiency at an unprecedented rate; and
- Scottish Water benefited from ‘spend to save’ of £200 million provided by customers. In England and Wales, shareholders had to reinvest the benefits of outperforming regulatory targets in order to ensure that further progress was made in improving efficiency.

10.4.8 Conclusion

We propose to continue to assess the efficiency of Scottish Water relative to the companies in England and Wales. We will, however, identify and quantify adjustments for any special factors which Scottish Water demonstrates are not covered, or are inadequately covered, in our benchmarking.

10.5 Approach of other regulators and how we propose to make adjustments

10.5.1 Ofwat

Ofwat uses special factors in order to adjust for any circumstances that could be considered to be company specific and which cannot be incorporated into its econometric models. These factors must be beyond management control; and they usually increase operating or capital expenditure costs.

In order to assess the relative efficiency of the companies

¹⁰ ‘Has private participation in water and sewerage improved coverage? Empirical evidence from Latin America’, George R.C. Clarke, Katrina Kosec and Scott Wallsten, page 28. Working Paper 04-02. January 2004. American Enterprise Institute – Brookings Joint Center for Regulatory Studies.

for its 2002-03 report¹¹, Ofwat asked the companies to submit their claims for special factors. Twenty-one companies submitted a total of 150 special factors.

The following table summarises the special factors which were taken into account by Ofwat when it assessed relative efficiency:

Table 10.2: Successful claims by the companies south of the border for special factors

Special Factor	Number of companies	
	Operating Expenditure	Capital Maintenance expenditure
Water resources (including bulk supplies)	7	0
Water quality	3	0
Water treatment	5	0
Leakage in north London	1	0
High level of meter penetration	5	0
Sewage treatment and sludge	2	0
Location		
Regional salaries and construction costs	5	6
Regional power costs	3	0
Debt	3	0
Coastal sewage treatment works	2	0
Traffic congestion	2	0
Burst rate	2	0
Size and number of assets (including rurality)	5	0
Company size (small companies)	3	2
Impact of large industrial customers on the econometric models	2	0
Total	50	8

Of the 150 claims submitted, only 58 were considered to genuinely impact on costs.

10.5.2 Ofgem

Ofgem also uses econometric modelling in its electricity distribution price reviews. It recognises that distribution companies may face external cost pressures. Ofgem stated recently¹² that it would make “*adjustments for regional factors to take account of significant geographical, demographic and operational circumstances...*”

Ofgem’s detailed proposals¹³ include the following approach to such factors:

“Regional factors

As at previous reviews, adjustments have been made for regional factors – costs specific to a particular area or region (e.g. higher labour costs in London and costs associated with the Highlands and Islands of Scotland). Several DNOs¹⁴ have provided qualitative or quantitative arguments for additional regional factors. Several have suggested that all companies have such regional factors and, with some exceptions, these approximately cancel out. EDF has argued that the areas it serves are disproportionately affected by factors such as wages and property prices and submitted a report by OXERA quantifying the impact.

Adjustments for regional factors may be appropriate where there are justifiable differences in costs due to factors that are outside the companies’ control that are not captured by the composite scale variable....

Ofgem is persuaded that such circumstances apply to EDF-LPN and SSE-Hydro.

The size of the adjustments Ofgem has made are broadly in line with those applied at the last review in 1999.”

10.5.3 Criteria we use to assess special factors

We analyse the impact of special factors using the same approach as Ofwat. To justify an adjustment, Scottish Water has to provide evidence in the following areas:¹⁵

- What is the justification of the special circumstances that demonstrates a material difference from industry norms? Scottish Water will need to set out whether the factors are the result of special obligations, the character of all or part of its customer base, or the result of historical development of the water and sewerage systems in its area of supply.
- What is the quantification of the impact of the special factors that demonstrate a net additional effect on

¹¹ ‘Water and sewerage service unit costs and relative efficiency 2002-03 report’, Ofwat.

¹² Electricity distribution price control review: Initial proposals
Office of Gas and Electricity Markets June 2004, Document 145/04, page 60.

¹³ Ibid, paragraphs 6.22 to 6.25.

¹⁴ DNO – (Electricity) Distribution Network Operator.

¹⁵ These questions are adapted from Ofwat’s Letter to Regulatory Directors, RD35/98, 1998.

Scottish Water's costs over and above that which would be incurred without these factors?

- What has Scottish Water done to manage the additional costs arising from the special factors and to limit their impact?
- Are there other special factors that reduce costs relative to industry norms? If so, have these been quantified and offset against the upward cost pressures?

10.5.4 Current Scottish Water claims for special factors

In June 2004, we received Scottish Water's initial evidence regarding special factors. This provides an overview of the factors which Scottish Water believes justifies higher operating expenditure than is predicted by the benchmarking models that we use. Scottish Water intends to develop this evidence in its business plans for the *Strategic Review of Charges 2006-10*. The current submission therefore represents an initial view only.

The factors that Scottish Water currently regards as having a significant adverse impact on operating expenditure can be summarised as follows:

Geographical

- Travel costs: Due to the size of Scottish Water's service area, asset employees have to travel long distances. In addition, personnel from areas such as Customer Service, Business Services, Laboratory Services and Contract Services also have to travel extensively.
- High number of small treatment works: According to Scottish Water, the sparsity of the population requires it to operate a large number of treatment works in comparison to those used by companies located south of the border.
- 'Flashy' supplies: Scottish Water claims that many of its treatment works deal with supplies that are difficult to treat due to the changeable nature of the raw water.
- Electricity: Scottish Water claims that in some regions its operating costs are increased due to higher

charges (distribution use of system charges and the tariff itself) than those incurred by the companies in England and Wales. It also claims that the use of electricity for activities other than pumping is higher in Scotland than in England and Wales, and that this is not taken into account in the models.

- Sludge treatment costs: Scottish Water indicates that it has to transport sludge longer distances than is the norm in England and Wales (from small rural areas to dedicated sludge treatment centres).

Asset base

- Scottish Water argues that it has inherited an asset base with a leakage rate that is much higher than the rates for companies south of the border. According to Scottish Water, this impacts on its costs (due to the need to treat relatively more water per inhabitant) but the model does not take this into account.

Economic

- Domestic bad debt, billing and metering: Scottish Water argues that it has a higher level of customer bad debt than that of the companies in England and Wales. It suggests that this is largely due to factors which are outside its control.
- Purchase of operational materials: Scottish Water claims that there is an additional cost when purchasing materials because most of these are purchased in England and transportation costs are significant.

Legal

- Sewer laterals: Scottish Water has a legal responsibility for lateral sewers (the drains that connect customers' properties to the main sewer), which are customers' responsibility in England and Wales.
- Freedom of Information Act: Scottish Water argues that it has to comply with the Freedom of Information Act whereas the privatised water and sewerage companies do not have to comply with this Act.
- Political queries: Scottish Water argues that its status

as a public body leads to a large number of enquiries by MPs and MSPs, compared with companies in England and Wales, and that it incurs additional costs because of this.

- Removal of phosphorus and nitrates: Scottish Water indicates that it has to incur higher costs to remove phosphorus and nitrates from sewage effluent than the costs incurred by companies south of the border. This is due to tighter consent conditions imposed by the environmental regulator in Scotland.
- Cryptosporidium standards: Scottish Water argues that the sampling requirement for cryptosporidium imposed by the drinking water quality regulator is greater than the sampling programmes undertaken by the water and sewerage companies. This leads to additional costs.

We would expect that other factors may come to light as Scottish Water prepares its business plans. We will review any claims against the criteria that we set out above. This will determine the extent of any adjustments that we should make.

We will also identify and quantify special factors that may favour Scottish Water, compared with the companies. These might include, but are unlikely to be limited to:

- lower regional rates of pay than is the norm in England and Wales;
- lower regional property rental charges;
- lower peak water consumption by domestic customers for garden watering;
- less agricultural pollution affecting water sources;
- Reporter costs are not met by Scottish Water; and
- a lower volume of billing queries and customer complaints.

10.5.5 Conclusions

In Chapter 7 we highlighted the importance of ensuring that our comparisons are made on a like-for-like basis. We recognise that when we use the econometric models to compare Scottish Water's performance with that of the companies in England and Wales, we also have to take account of any special factors that are not included in our benchmarking. In this chapter we have examined:

- differences in the scope of activities, where companies carry out additional or fewer functions to those of Scottish Water;
- differences in levels of service to customers and to the environment;
- issues arising from operating a water and sewerage service in remote areas of Scotland; and
- issues arising from operating in the public sector.

We believe that we are developing sound approaches to deal with these issues. However, we particularly welcome views on our suggested options for taking account of the differences in scope of activities and levels of service in our benchmarking comparisons.

10 6 Questions for consultation

1. Do you agree that it is appropriate to take into account differences in the scope of activities when determining Scottish Water's operating efficiency, relative to England and Wales? If so, which differences do you think are important to recognise and possibly take into account?
2. Do you agree that it is appropriate to take into account differences in levels of service when determining Scottish Water's operating efficiency, relative to England and Wales? If so, which differences do you think are important to recognise and possibly take into account?
3. How should we assess the cost of any such differences?

Section 4: Chapter 11

The scope and timeframe for improvement

11.1 Introduction

In this chapter we focus on the scope for Scottish Water to improve its operating expenditure efficiency over the period 2006-10. We also consider the pace at which Scottish Water could be expected to catch up with the performance levels of the companies in England and Wales.

By way of background, we begin with an account of the companies’ responses to targets that were set by Ofwat in successive price reviews. We then summarise recent performance benchmarking of Scottish Water (discussed in more detail in Chapter 5). We continue by explaining our approach to assessing the degree to which companies are likely to continue to improve. This enables us to identify the extent of the potential efficiency gap if Scottish Water does not improve its performance. We then examine how we can assess the pace of improvement that Scottish Water should be expected to achieve.

11.2 Background

Firstly, it is important that we acknowledge and welcome the significant efficiency savings in operating expenditure that have been achieved by Scottish Water to date. We do not underestimate the challenge that the organisation has faced in merging the three authorities and meeting its regulatory targets.

When we set the efficiency targets in our *Strategic Review of Charges 2002-06* we explained that they were designed to close 80% of the assessed efficiency gap by 2005-06. Obviously, this meant that even if Scottish Water achieved its efficiency targets, there would still be an efficiency gap. If the companies in England and Wales outperformed their own efficiency targets, the efficiency gap would be even greater.

Evidence published by Ofwat in their Financial Performance Report indicates that the companies in England and Wales have outperformed their efficiency targets during 2000-2004 (albeit by less than they did during the 1995-2000 review period). Ofwat has recently

published draft targets¹ for companies for the period up to March 2010. These targets show Ofwat considers that the companies still have to improve their efficiency.

11.2.1 Efficiency in the water industry

The companies in England and Wales were privatised in 1989. In the subsequent 15 years they have achieved considerable savings. The fact that Ofwat continues to set efficiency targets suggests that the scope for savings has not yet been exhausted.

In its first price review of the water and sewerage industry in 1994, Ofwat estimated that there was significant scope for efficiency savings in both water and sewerage service operating expenditure. The range of the targets that it set is illustrated in Table 11.1.

Table 11.1: Efficiency targets set by Ofwat in 1994

	Water service		Sewerage service	
	% per year	Five-year total	% per year	Five-year total
Minimum ²	1.0%	4.9%	1.0%	4.9%
Maximum	3.5%	16.3%	3.4%	15.9%

All of the companies outperformed these assumptions. Indeed, the companies that were set the most challenging targets performed best.

The efficiency targets comprised two elements:

- an overall improvement in the efficiency of the industry; and
- a ‘catch-up’ factor which all bar the leading company had to achieve.

In the 1994 price review, the catch-up factor was set at 50% of the gap to the leading company.

At the 1999 price review, Ofwat concluded that there was still significant scope for efficiency savings in both water and sewerage service operating expenditure. The efficiency targets were designed to close 60% of the efficiency gap between the least efficient companies and those at the efficiency frontier. The range of targets

¹ Ofwat, *Future water and sewerage charges 2005-10 – Draft determinations*, August 2004.
² Note that some of the small, low bill and efficient water only companies were set targets of 0.5% per year.

that were set is shown in Table 11.2.

Table 11.2: Efficiency targets set by Ofwat in 1999

	Water service		Sewerage service	
	% per year	Five-year total	% per year	Five-year total
Minimum	1.4%	6.8%	1.4%	6.8%
Maximum	4.9%	22.2%	4.3%	19.7%

Ofwat set targets for the companies that were significantly lower than the actual assessed efficiency gap. This was designed to create an incentive for the companies to beat the targets. The incentive effect of RPI-X regulation was discussed in Chapter 4.

In August 2004, Ofwat published its draft determinations for the 2004 price review, which covers the period 2005-10³. Ofwat stated that at an aggregate level, it believes that there is scope for efficiency savings of the order of 3% compound per year. This implies that at an industry level, there is scope for efficiency savings of more than 14% during the regulatory control period.

The scope for savings varies. The least efficient companies in water services have been set draft targets to reduce operating costs by 3.6% per year. Ofwat has again set targets such that companies should close 60% of the efficiency gap to the leading company. The companies should therefore be able to outperform the targets.

The companies' success in beating the significant efficiency targets that they have been set shows that there is significant scope for Scottish Water to achieve savings. As part of the current Strategic Review, we expect to set Scottish Water further targets for reducing operating expenditure. Evidence from the water and sewerage companies in England and Wales shows that savings can be sustained over a number of years and we expect Scottish Water to continue to improve its performance. Customers have a right to expect value for money from their water and sewerage service. Achieving value for money will require Scottish Water to improve its efficiency.

11.3 Assessing the size of the efficiency gap

The term 'efficiency gap' refers to the difference between Scottish Water's actual reported operating costs and the costs reported by the comparator companies for providing a similar level of service. We have selected comparator companies from south of the border that are broadly similar geographically and demographically and are relative efficient in operating costs.

We need to distinguish between the efficiency gap that exists today and the gap that could exist in the future because it is likely that the companies in England and Wales will continue to improve.

Efficiency comparisons can be made at a point of time or through analysis of trends over time. In our Costs and Performance Reports we provide a snap-shot of the current efficiency gap. We do not estimate how the leading companies might improve.

We use information from both Scottish Water and the water and sewerage companies to analyse the current efficiency gap.

This information comes from:

- annual regulatory returns and annual accounts of Scottish Water and each company;
- Ofwat publications on the financial performance, efficiency and levels of service of the companies;
- responses to our regulatory letters from Scottish Water; and
- reports from analysts, auditors and independent Reporters.

We use this information in our benchmarking models (see Chapters 8 and 9). We then make adjustments for factors which are not taken into account by the models.

³ Ofwat, *Future water and sewerage charges 2005-10 – Draft determinations*, August 2004.

This provides us with the following information:

- observed operating expenditures of Scottish Water;
- observed operating expenditures of comparable companies from England and Scotland;
- predicted operating expenditures of Scottish Water; and
- predicted operating expenditures of comparable companies from England and Wales.

The next step is to calculate ‘residuals’. The residual is simply the percentage difference between the predicted and the observed expenditure for each organisation. A positive residual means that an organisation is spending more than predicted – it is therefore relatively inefficient. A negative residual means that an organisation is spending less than predicted – it is therefore relatively efficient.

11.3.1 Calculating the current efficiency gap

The efficiency gap is the difference in residuals between Scottish Water and a chosen company or the average of a set of companies.

We convert absolute residuals to a relative scale in order to be able to complete the benchmarking. We call this the efficiency score. To calculate the efficiency score, we divide each residual by the corresponding predicted expenditure. An illustrative example is presented in Table 11.3 below.

Table 11.3: Example illustrating how the efficiency score is calculated

	Adjusted Observed £m	Predicted £m	Adjusted Residual		Efficiency Score
			£m	%	
A water & sewerage company	200.00	155.00	45.00	29.03%	129.03

In this example, a company has reported operating costs of £200 million, after adjustments. The

econometric models predict costs of £155 million for this company. It is therefore relatively inefficient. We first calculate the residual in percentage terms:
 $100\% \times 45/155 = 29.03\%$

Then to calculate an efficiency score we add 100 to 29.03 = 129.03

The last step in the comparison process is to rebase efficiency scores such that the average efficiency score of companies south of the border is 100. This simplifies the presentation of Scottish Water’s score.

In our last Costs and Performance Report we published our analysis of Scottish Water’s performance in 2002-03⁴. Scottish Water’s efficiency score is as shown in Table 11.4.

Table 11.4: Published efficiency scores for 2002-03

	Efficiency Scores
Scottish Water	159
England and Wales average	100
England and Wales leading company	87

The efficiency scores can be converted to monetary equivalents. In the example above, for every £1 of operating expenditure in England and Wales, Scottish Water incurred £1.59.

We also published Scottish Water’s efficiency gap, expressed as a percentage of its score. This is shown in Table 11.5.

Table 11.5: Published efficiency gaps for 2002-03

	Efficiency gap (%)
Scottish Water to average company in England and Wales	$(159-100)/159 = 37.1\%$
Scottish Water to England and Wales leading company	$(159-87)/159 = 45.3\%$

The efficiency gap represents the amount by which Scottish Water would be required to reduce its costs from 2002-03 levels in order to match the efficiency of the comparator company.

⁴ Costs and Performance Report 2002-03, November 2003.

11.3.2 Adjustments for levels of service and scope of activities

The 2002-03 scores for Scottish Water shown above exclude the significant differences between the scope of activities and levels of service offered by Scottish Water and those provided by the England and Wales companies. This is discussed in detail in Chapters 7 and 10.

We estimate that, if the companies only had to provide the same scope of activities and level of service as Scottish Water in 2002-03, they would be able to reduce their operating costs by around 12% on average.

Table 11.6 shows the revised efficiency scores after taking into account differences in levels of service and scope of activities.

Table 11.6: Published efficiency scores for 2002-03, adjusted for levels of service and scope of activities

	Efficiency Scores
Scottish Water	186
England and Wales average	100
England and Wales leading company	87

The efficiency scores can be converted to monetary equivalents. In the example above, for every £1 of operating expenditure in England and Wales, Scottish Water incurred £1.86.

We also published Scottish Water's efficiency gap, expressed as a percentage of its score. This is shown in Table 11.7.

Table 11.7: Published efficiency gaps for 2002-03, adjusted for levels of service and scope of activities

	Efficiency gap (%)
Scottish Water to average company in England and Wales	$(186-100)/186 = 46.2\%$
Scottish Water to England and Wales' leading company	$(186-87)/186 = 53.2\%$

11.3.3 Ofwat adjustments to residuals

In its models for the *2002-03 Water and sewerage service unit costs and relative efficiency report*, Ofwat adjusted the water residuals by 10% and the sewerage residuals by 20%. This is the first time that Ofwat has adjusted residuals. It gives the following reasons for the adjustments⁵:

"We have introduced for the first time a specific adjustment to the model outputs to take some account of the underlying error term in the model residuals. We make a reduction to the residual of 10% for water and 20% for sewerage (where we have fewer companies to compare). In addition we have carefully considered a critical analysis of our approach but we remain confident that it deals appropriately with the uncertainty that surrounds any use of statistical tools for decision making."

We are not convinced that a percentage adjustment to the efficiency scores would be appropriate in Scotland. There are two reasons for this: firstly, our use of the alternative model⁶ already provides an independent check on the results that we obtain from the Ofwat econometric models. Secondly the effect of these adjustments on company scores in England and Wales is small in relation to the corresponding adjustment that would have to be made to Scottish Water's 2002-03 score. Scottish Water has a comparatively large residual. It would not seem appropriate to reward a company for being inefficient. A large percentage adjustment in the residual would result in a reduced efficiency target and ultimately higher bills for customers.

We propose to consider carefully the results of both the alternative model and the Ofwat econometric models in setting targets in the *Strategic Review of Charges 2006-10*. If the results of the alternative model are broadly similar to the results of the Ofwat models, then we propose not to accept the residual adjustments made by Ofwat for the companies south of the border. We would limit the adjustment in Scottish Water's residual to the maximum allowed to any company in England and

⁵ Ofwat *Future water and sewerage charges 2005-10 – Draft determinations*, August 2004, page 131.

⁶ See Chapter 9.

Wales. If the alternative model suggested a much smaller efficiency gap between Scottish Water and the comparator company, we would propose to adopt the percentage adjustments implemented by Ofwat. This would reflect our view that the models provide a robust assessment of relative efficiency.

11.4 Assessing the future gap

11.4.1 Why we need to assess the future gap

The efficiency of the comparator companies in England and Wales continues to improve. There are two reasons why companies south of the border continue to improve. The first is the result of both regulatory and shareholder scrutiny. Ofwat seeks to minimise customer bills and shareholders demand outperformance of the regulatory settlement in order to improve the available rate of return. The second is the impact of innovation and technological change. This, of course, impacts on the whole economy, but it is clear the developments in information technology allow an industry that is responsible for a large number of assets, spread over a wide area, to reduce its operating costs.

We believe that we need to take account of the way in which the performance of the companies south of the border is likely to change over the next regulatory control period. Otherwise customers in Scotland may have to pay more than is strictly necessary.

When assessing the scope for improvement in efficiency, Ofwat took account of analysis by Europe Economics and London Economics. These analyses examined information on levels of productivity. We discuss their findings later in this chapter.

Unlike Ofwat we do not need to understand the scope of the leading company to improve its efficiency. We can set targets relative to the levels of efficiency that Ofwat expects the leading company to achieve. There is little prospect that Scottish Water will be the leading company in the UK by 2010.

Ofwat determines targets that it believes a well-managed company can better. This creates an incentive for management to outperform. The companies south of the border have, on average, always managed to outperform the targets set by Ofwat. The industry as a whole performed more than 10% better than the targets set by Ofwat. Current levels of outperformance are rather less than this figure, but if we ignore companies' capacity to outperform targets, we would almost certainly underestimate the future efficiency gap.

Ofwat published draft targets and incentives in August 2004⁷, and will finalise them in November 2004. This will inform our assessment of the scope for improvement by Scottish Water over the period 2006 to 2010. We can then set targets for Scottish Water which would close much of the expected efficiency gap in 2010.

In the *Strategic Review of Charges 2002-06* we used the expected level of efficiency of the comparator companies in the final year of the review period as our benchmark. We assumed, conservatively, that companies would meet but not exceed their targets. We then assessed the degree to which Scottish Water could be expected to close the efficiency gap.

We propose to examine Ofwat's final determinations when they are published in November 2004, and to review Ofwat's expectations of the scope for companies to outperform. Our draft targets will be based on the improvements we expect the companies to achieve by 2010. We will present this assessment in January 2005 when we publish the draft targets for Scottish Water. At this stage it would seem likely that we will be justified in assuming a modest degree of outperformance by companies south of the border.

11.4.2 Implications for customers

The assessment of the future efficiency gap allows us to set efficiency targets that reflect the continuing scope for improvement in the water industry. This ensures that customers pay no more than is necessary for the services they receive.

⁷ Ofwat *Future water and sewerage charges 2005-10 – Draft determinations*, August 2004.

We discuss target setting in Chapter 14. This chapter now continues by reviewing the findings of Europe Economics and London Economics on the scope for productivity improvement in the water industry.

11.5 Industry-wide scope for productivity improvement

Our assessment of the scope for improvement by Scottish Water will focus on the targets and incentives determined by Ofwat later this year. Nonetheless, it is useful to examine the evidence that is likely to inform Ofwat's decisions. As part of the 2004 price review, Ofwat commissioned two studies to look at the potential scope for efficiency improvement in the water industry. These studies were completed by Europe Economics⁸ and by London Economics⁹.

11.5.1 The Europe Economics report

Ofwat asked Europe Economics to undertake a study regarding the potential scope for efficiency improvements in the water and sewerage industry. Europe Economics undertook, updated and expanded on work that they had carried out for Ofwat as part of the 1999 price review. The updated study was published in March 2003.

Europe Economics adopted a top-down approach to assess the scope for efficiency improvement in the water and sewerage industry in England and Wales over the period 2003-13. Essentially, this approach involved comparing the water and sewerage companies with:

- sectors of the economy that have similar activities to the water and sewerage companies; and
- other UK privatised infrastructure companies since their privatisation.

The study compared productivity trends in the water and sewerage companies in England and Wales against the same trends in the two groups of comparators. Comparison against the first group appeared to indicate that as a result of the nature of their businesses, water

and sewerage companies do have further scope to improve their efficiency faster than the economy as a whole. Comparison against other privatised infrastructure companies showed that such companies have reduced costs by more than might have been expected, simply because they have been privatised and subjected to incentive regulation. The study found that it was difficult to forecast if such outperformance would continue in the future.

Europe Economics took into account the improvements in customer service and the delivery of higher water and environmental quality standards. It was essential that these changes were taken into account, otherwise the improvement in productivity achieved by the industry would be underestimated.

These comparisons of productivity trends allowed Europe Economics to forecast the scope for efficiency improvements in the water and sewerage industry in England and Wales for the period 2003-13. Europe Economics concluded that the companies in England and Wales, as a whole, had scope to improve operating expenditure efficiency on a like-for-like basis over time by around 3% per year. Europe Economics also looked at capital maintenance improvements, which we will discuss in Volume 5 of our methodology. Table 11.8 summarises Europe Economics' conclusions.

Table 11.8: Summary of Europe Economics' conclusions

	Water	Sewerage
Scope for reductions in real base service operating and capital maintenance expenditure	1.5% to 3% per year	1.75% to 3.25% per year
Scope for reductions in real base service operating expenditure	2% to 4% per year	2.25% to 4.25% per year

Europe Economics' conclusions are not directly applicable to Scotland because they relate to companies that are already well ahead of Scottish Water in their operating efficiency. They do, however, set the scene for Ofwat's determination of prices.

⁸ Europe Economics, *Scope for efficiency improvement in the water and sewerage industries – Final report*, March 2003.

⁹ London Economics, Black & Veatch Consulting and Professor Maurice F. Shuttler, *PR04 Scope for efficiency studies*, December 2003.

11.5.2 The London Economics report

The London Economics report was published in December 2003. Ofwat asked London Economics to look at the scope for future efficiency in the water and sewerage industry and address criticisms of previous efficiency reports.

London Economics used two methods to arrive at their assessment of the scope for future efficiency – a top-down approach and a bottom-up approach. The top-down approach was essentially similar to that used by Europe Economics in that it involved analysing past productivity trends in the water and sewerage industry and comparing these with similar industries. In contrast, the bottom-up (or activity-based) approach estimated efficiency gains for each component of water and sewerage activity. Table 11.9 summarises the conclusions of London Economics' study.

Table 11.9: Summary of Europe Economics' conclusions

	Annual average reduction in real unit costs(%)	
	Top-down results	Bottom-up results
Operating expenditure (water)	0.1% to 1.3% per year	2.9% to 3.0% per year
Operating expenditure (sewerage)	0.1% to 1.3% per year	-0.1% to 1.9% per year

The authors of the report believed that the results of the two approaches are not significantly different and that most of the difference can be explained by normal measurement error. London Economics found that the scope for efficiency was lower than that assessed by Europe Economics. There were two reasons for this:

- The London Economics study used UK industry information to assess past productivity trends. Europe Economics used England and Wales information only. London Economics included information for the water and sewerage industries in both Scotland and Northern Ireland. Neither Scotland nor Northern Ireland had been subjected

to the same period of incentive regulation. This raises the possibility that the observed productivity trends underestimated the achievements in England and Wales and overestimated the achievements in Scotland and Northern Ireland.

- London Economics acknowledged that a significant proportion of productivity growth was due to continuing improvements in water quality (and that this was likely to continue), and that their estimate made no allowance for the improvement in customer service that had occurred in England and Wales since privatisation. This would potentially introduce a downward bias to the estimates.

London Economics' bottom-up analysis of the scope for efficiency improvements used detailed cost breakdowns by activity from the water and sewerage companies' annual regulatory returns. It did not use information from Scotland or Northern Ireland. The water and sewerage services were treated separately and unit costs were calculated for each service. The output measures were water delivered¹⁰ for the water service and population equivalent served¹¹ for the sewerage service. Two trends were calculated, one 'long-term' covering the period 1992-93 to 2002-03 and the other 'short-term', covering the period 1998-99 to 2002-03.

Since 1992-93 a number of factors have increased the costs of the water and sewerage industry. London Economics acknowledged the existence of these factors but does not appear to have taken account of them in the analysis. These factors include:

- the introduction of mandatory leakage targets and the resultant leakage control costs;
- improved levels of customer service; and
- improvements in environmental quality, ie higher levels of sewage treatment.

¹⁰ Broadly, water delivered is the volume of water supplied to customers' premises.
¹¹ Population equivalent is the domestic population connected to the sewer network, plus an estimate of the additional population that would be required to generate an equivalent level of sewage to that generated by non-domestic customers.

London Economics may well have underestimated productivity improvements by not taking these factors into account in the analysis. London Economics concluded that their estimated scope for savings on the water service of 2.9-3.0% per year would be unsustainable during the regulatory control period, largely as a result of rising input prices.

11.6 Rate of improvement in efficiency

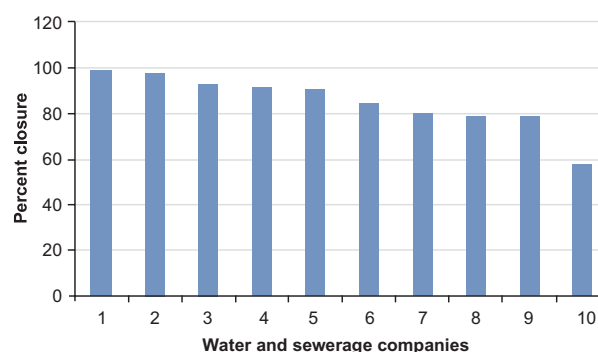
In the *Strategic Review of Charges 2002-06* we examined evidence from England and Wales about the rate of progress achieved by companies during the 1990s. We assumed that Scottish Water should be able to match the pace of change achieved south of the border. This was a conservative assumption for two reasons. Firstly, Scottish Water could draw on the experience of the companies south of the border. Secondly, Scottish Water was allocated £200 million of spend to save to help deliver the required improvements quickly. The companies had to fund improvements by outperforming regulatory targets.

We examined two aspects of the pace of improvement – the percentage reduction in operating costs, and the degree to which each company closed the efficiency gap between itself and the leading company. We focused in particular on the efficiency gap, because the level of cost inefficiency in the three authorities was much greater than for any company south of the border.

We examined timescales from one up to six years. We focused on a five-year timescale because the authorities would begin to tackle efficiency from 2001 and the review period ran until 2006.

Our analysis in the review demonstrated that during their best five-year period, the companies achieved an average closure of 85% of the gap to the leading company. Figure 11.1 below is taken from the *Strategic Review of Charges 2002-06*.

Figure 11.1: Closure of efficiency gap by water and sewerage companies over five years

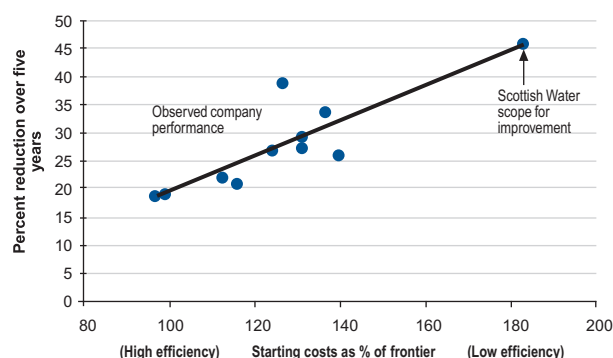


All but two companies achieved more than a 40% closure of the efficiency as their best single year performance. We considered that this analysis represented a sound basis for the setting of efficiency targets.

We believed that, given that most companies had shown that they could achieve significant savings in a single year, this should be reflected in Scottish Water's targets. Our view was reinforced by a belief that the merger should act as a catalyst for savings, and by the spend to save resources that had been made available as well as the significant preparatory work for the merger that had been undertaken before 2002. We therefore set Scottish Water a target of 80% gap closure, with 40% closure to be achieved by 2002-03.

Our analysis further showed that companies facing larger initial efficiency gaps made greater absolute cost reductions than companies that were relatively more efficient. This is not surprising because as organisations approach the efficiency frontier, we would expect efficiency savings to become progressively harder to achieve. Conversely, the less efficient an organisation, the easier it should be to make the initial savings. The larger inefficiencies are more obvious to identify and simpler to correct. Figure 11.2, adapted from the review, demonstrates the relationship that we found.

Figure 11.2: Reduction in operating expenditure for a given initial efficiency



The target would reduce operating expenditure by 33%. We were able to confirm from our analysis of companies' performance that such a reduction in operating costs in five years had previously been achieved.

We would propose to use a similar approach in setting targets for the 2006-10 regulatory control period.

11.7 Summary

It is clear that Scottish Water is likely to have scope for considerable further improvement over the period 2006-10. Companies in England and Wales continue to improve, and Ofwat expects significant further improvement over the next few years. Our assessment of the scope for Scottish Water to improve its performance will draw on six main strands of analysis:

- The baseline for operating expenditure that we will establish using the approach described in Chapter 6.
- Our benchmarking of Scottish Water's present performance against the companies in England and Wales, using the methods described in Chapters 8 and 9.
- Our adjustments to reflect the costs of operating in Scotland, described in Chapter 10.

- Our adjustments to reflect differences in scope and levels of service in Scotland, described in Chapter 10.
- Ofwat's targets and assessments of the scope for companies to continue to improve, discussed in this chapter.
- Our assessment of the pace of improvement that Scottish Water could sustain, based on evidence from England and Wales, as discussed in this chapter.

In the next two chapters we examine further elements of operating expenditure that we will need to take into account – new operating expenditure and Public Private Partnerships.

11.8 Question for consultation

1. Do respondents agree with our proposed approach to assessing the rate at which any efficiency gap may be closed? If not, what approach would they suggest?

Section 4: Chapter 12

New operating expenditure

12.1 Introduction

This chapter sets out the options for dealing with ‘new operating expenditure’. Scottish Water incurs ‘new’ operating expenditure to deliver improvements in:

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

In Chapter 6 we described how we propose to set a baseline for operating expenditure. This baseline applies to costs that are already being incurred to deliver a particular set of outputs and level of service. However, Scottish Water could incur significant new operating costs in the next regulatory control period. It is important for us to scrutinise carefully any claims for such new operating costs to be included in price limits.

In this chapter, we set out how we propose to determine appropriate efficiency targets for new operating expenditure. We also review Ofwat’s approach to claims for new operating costs from the companies in England and Wales.

12.2 Defining new operating expenditure

New operating expenditure arises from the following:

- Environmental compliance

Examples of environmental obligations include the *Urban Waste Water Treatment Directive* and the *Bathing Waters Directive*. In common with other water and sewerage providers in Europe, Scottish Water has to comply with this legislation. In many cases, compliance will be achieved through capital expenditure on new or upgraded sewage treatment plants. These upgraded sewage treatment plants are likely to have higher operating costs than the original processes that were in place. For example, secondary activated sludge treatment ensures higher

levels of compliance, but uses more power than primary treatment and is likely to lead to higher operating costs.

- Drinking water compliance

Examples of drinking water obligations include the cryptosporidium regulations and standards to reduce the amount of lead in drinking water. Meeting these obligations often requires capital expenditure on water treatment works or the water distribution system. However, meeting these obligations can also lead to increases in operating expenditure, for example through increased monitoring of water quality or increased rates of chemical dosing.

- Enhanced service levels

The three former authorities¹ lagged considerably behind the companies in England and Wales in the levels of service they provided to customers. At present there is still a considerable gap between Scottish Water and the companies south of the border. The companies in England and Wales have significantly increased operating expenditure to improve customer service in the past ten years, and it is likely that Scottish Water will face the same pressures.

- Supply/demand balance

Maintaining an appropriate supply/demand balance ensures that there is sufficient capacity (on both water and sewerage) for Scottish Water to meet the demands of new customers and/or the increasing demands of existing customers.

In the long term, Scottish Water may meet increased demand for water and sewerage services by building new water treatment and sewage treatment works, but in the short term, increased demand can often be dealt with through operational measures. For example, increased demand for water could be met by incremental reductions in leakage or by employing demand management techniques such as metering. Either approach is likely to increase operating costs.

¹ East of Scotland Water Authority, North of Scotland Water Authority and West of Scotland Water Authority.

Each of these factors would lead to increases in operating expenditure. We are interested in *net* new operating expenditure. This effect is best illustrated with an example.

New legislation requires a water and sewerage undertaker to achieve higher standards of effluent discharge. A sewage treatment works is already in place, but the treatment processes employed will not meet the new required standards and the plant needs to be replaced. Currently, the works incurs £50,000 per year in operating expenditure. The new compliant treatment processes will incur £75,000 per year in operating expenditure. New operating expenditure is not £75,000 per year; it is the difference between the new operating expenditure and that which was previously incurred, ie £75,000 less £50,000. Net new operating expenditure is therefore £25,000 per year.

12.2.1 The importance of new operating expenditure

New operating expenditure will over time represent a significant part of total operating expenditure. Over the past 15 years, the companies in England and Wales have incurred significant operating expenditure. This is in large part due to their quality investment programme. The ten water and sewerage companies have incurred annual new (extra) water operating expenditure of almost £24 million since 1997-98 and annual new (extra) sewerage operating expenditure of £163 million since 1997-98.

The companies in England and Wales have also invested in improving their supply/demand balance. By 2002-03, new (extra) operating expenditure on the supply/demand balance had increased by £26 million for the water and sewerage companies since 1997-98.

New (extra) operating expenditure represented approximately 10% of total operating expenditure in the water and sewerage companies in England and Wales in 2002-03. This includes new operating expenditure related to improved levels of service to customers.

We believe that Scottish Water is likely to face broadly similar percentage increases in new operating

expenditure over the coming years. Scottish Water continues to invest in projects to achieve greater compliance with both environmental and water quality obligations, both of which could give rise to new operating expenditure. In addition, we expect that Scottish Water will be making efforts to improve its levels of service to customers. All of this investment could result in significant levels of new operating expenditure and upward pressures on customers' bills.

12.3 How we deal with new operating expenditure

We propose to scrutinise the claims for new operating expenditure put forward by Scottish Water. Customers should not be expected to pay for unnecessary or inefficient levels of new operating expenditure. Previous chapters have set out how we intend to assess the efficiency of Scottish Water's baseline operating expenditure and the scope for future efficiency. This section reviews:

- how we assessed new operating expenditure at the last review;
- how Ofwat assesses new operating expenditure in England and Wales; and
- how other regulators assess new operating expenditure.

We conclude by reviewing the options for dealing with new operating expenditure for the next regulatory control period.

12.3.1 New operating expenditure in the Strategic Review of Charges 2002-06

At the last review, we wrote to each of the three authorities to request their views on the level of new operating expenditure that was likely to be incurred over the period 2002-06². At that time, we took the view that it would be inappropriate to allow the authorities new operating expenditure unless the reported levels of service in England and Wales were surpassed, or significant additional sewage treatment processes were required.

² WIC12: New opex and Spend to Save; 7 March 2001.

Our rationale was straightforward. We had not taken account of the extra expenditure incurred by the companies south of the border in improving drinking water quality and levels of customer service. Our comparison of the three former authorities with the companies in England and Wales therefore favoured the Scottish authorities. This is because the companies in England and Wales achieved higher levels of service and compliance with drinking water obligations. Differences in environmental compliance are taken into account in our comparisons of relative performance in sewerage. Chapters 8 and 9 explain our benchmarking methods in more detail and set out exactly which factors are taken into account.

We took the view that the Scottish water industry should be able to absorb any new operating expenditure associated with bringing its levels of customer service and drinking water quality up to the same standard as that achieved by the companies.

In our letter to the authorities³, we clearly set out the criteria that we intended to apply when assessing their claims for new operating expenditure:

- 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 operating expenditure, rather than rely on estimates from contractors /manufacturers or on an arbitrary percentage of the capital 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 operating expenditure and capital investment?
- Where appropriate, have single authority solutions been investigated?
- Has the authority quantified potential savings to baseline operating expenditure arising from upgrading works or systems, and offset the new operating expenditure accordingly?

Our letter made clear that all claims for new operating expenditure would require a satisfactory response to each of the above questions. In addition, we stated that an efficiency target would be applied to new operating expenditure.

Some claims for new operating expenditure did satisfy these criteria and we allowed new operating expenditure for sewage treatment and sludge disposal. Table 12.1 sets out the new operating expenditure that was allowed in the *Strategic Review of Charges 2002-06*, on a Scotland-wide basis.

Table 12.1: New operating expenditure limits in the Strategic Review of Charges 2002-06

	2001-02	2002-03	2003-04	2004-05	2005-06
New operating expenditure	£0.4m	£2.5m	£4.6m	£6.8m	£9.0m

All of this allowed new operating expenditure related to raising standards of sewage treatment and sludge disposal. The costs represented the allowed increase over the 2000-01 base year, such that by 2005-06, we expected annual new (extra) operating expenditure to have reached £9 million.

12.3.2 How Ofwat deals with new operating expenditure

Ofwat is currently undertaking a price review of the water and sewerage companies in England and Wales. As part of that review, Ofwat will have received claims from companies for new operating expenditure associated with:

³ WIC12, 7 March 2001, See Volume 1.

- quality enhancements (both water and environmental);
- supply/demand balance; and
- enhanced service levels.

In its March 2003 publication *Setting water and sewerage price limits for 2005-10: Framework and approach*, Ofwat made clear that it would carefully assess companies' estimates of new operating expenditure and that these estimates would have to be underpinned by a robust justification.

Ofwat published its draft price limits in August 2004⁴. As part of that document, it set out what it believes to be the scope for improvement in new operating expenditure. Ofwat's assumptions are split between targets, ie the efficiency improvements that are incorporated within price limits; and additional scope for the companies to outperform those targets. Table 12.2 sets out Ofwat's assumptions.

Table 12.2: Ofwat's draft assumptions for annual efficiency improvements in new operating expenditure

	Target annual improvement	Potential annual outperformance	Total scope for annual improvement
Water service – baseline operating expenditure	1.4%	1.2%	2.6%
Water service – enhancements	1.85%	1.15%	3.0%
Sewerage service – baseline operating expenditure	2.0%	1.9%	3.9%
Sewerage service – enhancements	2.65%	1.8%	4.45%

Table 12.2 shows that Ofwat believes that there is greater scope for efficiency improvements in new operating expenditure than in baseline operating expenditure. This is not surprising – companies should be able to achieve greater improvements in new operating expenditure because they are able to take advantage of new technology or the latest operational

practices. It is also worth noting that a company has to achieve more of the expected available improvement in new operating expenditure before it can retain performance benefits for shareholders.

Ofwat adopts a rigorous approach to assessing new operating expenditure. First, it reviews the justification for the estimates of new operating expenditure and then it applies strict efficiency targets to such expenditure. This ensures that customers' bills do not increase by more than is necessary to fund the higher standards and levels of service that are required.

12.4 Proposals for dealing with new operating expenditure at the next Strategic Review

Scottish Water could incur significant new operating expenditure in the next regulatory control period. We propose to continue to place the onus on Scottish Water to identify and justify new operating expenditure. We will scrutinise Scottish Water's estimates of new operating expenditure carefully and will ask the Reporter⁵ to pay particular attention to this area of Scottish Water's business plan.

We propose to use the same criteria as at the last Strategic Review to assess new operating expenditure for Scottish Water. Our review of new operating expenditure and the capital investment programme will check that proper minimum whole life costs solutions are being adopted. We would adjust our targets if we were to identify any imbalance between capital and operating costs.

We share Ofwat's view that it is easier for an organisation to deliver efficiency savings in new operating expenditure than in baseline operating expenditure. It is likely, therefore, that we will set higher efficiency targets (in percentage terms) for new operating expenditure than for baseline operating expenditure.

⁴ Ofwat, *Future water and sewerage charges 2005-10 – Draft determinations*, August 2004.

⁵ The role of the Reporter is described in detail in Volume 2.

12.5 Questions for consultation

1. Do respondents agree that the criteria that we adopted for assessing new operating expenditure at the *Strategic Review of Charges 2002-06* remain appropriate for assessing such expenditure for 2006-10?
2. Do respondents agree that there is greater scope for achieving efficiencies in new operating expenditure than in base operating expenditure?

Section 4: Chapter 13

Public private partnership financing (PPP)

13.1 Introduction

In this chapter we examine PPP projects and analyse the benefits. PPP accounts for some 12% of Scottish Water's current spending. It is therefore important that we consider the experience of using PPP in the Scottish water industry. It is important that PPP delivers value for money to customers and that Scottish Water is alert to opportunities to reduce the costs associated with the PPP contracts.

13.2 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 the Public Private Partnership (PPP), was introduced as an alternative way to provide services to public sector customers. The new scheme placed emphasis on the partnership that would need to exist between the private and public sectors if this method of service delivery were to be fully effective.

While the original aim was to reduce the demand for new loans from central government for capital investment, the main benefit from successful schemes appears to be the timely delivery and innovative solutions for building and operating new facilities. These benefits ensure that the bills which customers face are lower than they would otherwise have been and that customers receive a better service, more quickly.

13.3 Use of PPP in the Scottish water industry

By 1997, it had become clear that there needed to be a step function change in the level of investment 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 appeared to offer an attractive solution. It seemed likely that this route would deliver benefits more immediately,

within the constraints of public expenditure, and would keep charge increases as low as possible. It is an essential criterion of PPP that value for money in 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. This ensures that set-up costs are kept to a reasonable proportion of the total cost. Initial costs and external fees in preparing contracts, 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.

All nine of the PPP contracts were initiated by the three former water authorities. Each of the former three water authorities assessed the improvements in waste water treatment that had to be delivered in order to comply with the requirements of the UWWTD. One of the options that the authorities considered was to let a concession for a period of 25-30 years. This concession involved designing, building, operating and financing the required improvement to waste water treatment.

The water authorities invited responses from the private sector, which were then compared with the best traditional public sector procurement option. The aim of this appraisal was to ensure that the authorities' service delivery and compliance criteria were met in the most effective manner and would provide best value. The appraisal process and subsequent negotiation with consortia of service providers, their advisers and financiers was sometimes 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 formed a joint company for the provision of specific services to the authority. Consortium members also had

to accept responsibility for both maintenance over the contract period as well as accepting the inherent risks of project delays, cost over-runs and volume changes caused by shifts in demand. The consortia were also required to deliver the service within tightly specified parameters.

The benefits for the partnership companies included:

- the long operating franchise, with a guaranteed return if the service level agreement is met; and
- the opportunity to establish or develop a presence in the Scottish marketplace.

The outcomes from the nine projects appear to have realised considerable tangible benefits in the short term. These benefits are discussed further below. It is open to question, however, whether these benefits still apply.

13.4 Operation of PPP

An essential element of PPP is the transfer of risk from the public to the private sector. This meant that the authority did not have to record the assets or liabilities associated with delivering the service on its balance sheet. Once the PPP waste water treatment works were commissioned, the authority started to pay the partnership companies a fee that reflected the volumetric and qualitative services provided to the authority for that period. This fee was an operational expenditure item for the authority, although the charge reflected the operating, capital and financing costs of the consortium which delivered the service.

The consortium's books and records were 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 leased the land upon which the assets were located to the consortium. At the end of the contract all assets will revert to Scottish Water, and are required to be in a fully operable condition.

Each of the PPP contracts provides for the indexation of fees. These vary in line with annual inflation indices, but apply only to 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 or with Scottish Water. The onus would be on Scottish Water to monitor closely the delivery of service and ensure that benefits of any extra efficiency are shared between the concession holder and the customer.

13.5 Customer benefits

The principal benefits to customers should be:

- the provision of improved waste water treatment to secondary and tertiary levels fully compliant with EU standards, and in some cases primary level where none existed before;
- quicker delivery of the service;
- more cost-effective construction and delivery of service; and
- charges that are variable and reflect the annualised costs of the service used.

The Transport & Environment Committee 9th Report 2001 contains details of the eight projects that were fully agreed up until June 2001. The report also presents the combined operational and capital cost efficiencies, compared with the public sector alternative, for each of these schemes. The largest savings achieved by each authority 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 significant cost is incurred. It also brings with it the market disciplines of finance, management, construction and operation, and does so over the whole life of the agreed project. It is the efficient whole life management of the project that principally differentiated PPP from the investment delivery of the three former water authorities.

The annual cost of the services provided represents a major component of Scottish Water's costs (around 12%) and therefore its 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, had reduced the increase in revenue required by the water industry by approximately £33 million each year¹. This was equivalent to about 4% of customers' bills (or nearly £10 for the average household) at that time. The estimates of the savings achieved in each project are summarised in Table 13.1 below.

Table 13.1: 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 provided the same services at lower cost, the PPP route was not followed. The Montrose scheme, which North of Scotland Water Authority originally expected to complete by means of a PPP, proved to be better value if procured by traditional means.

13.6 PPP projects in progress

The nine PPP contracts represent a capital investment on behalf of customers of around £550 million, which contrasted with an estimated investment of more than £700 million under the conventional procurement route.

The contracted solutions for the collection, transmission and treatment of waste water and its resultant sludge were tailored to each project's particular location. The annual fees are therefore not comparable on an aggregate basis, but only when the actual service delivered and the construction of assets is taken into account.

The schemes were complex and involved the development and improvement of sewerage mains, pumping stations, storage facilities, treatment works, outfalls and sludge treatment facilities. The nine projects were in operation by the end of 2002-03; they currently process around 50% of the total waste water of Scotland. PPP projects account for virtually all of the waste water treatment in non-rural areas of Scotland. The sewerage needs of rural areas are likely to continue to be met by projects procured in the traditional way.

The nine projects are outlined in Table 13.2. The table also shows the projected fee payable to each consortium.

¹ Representing the claimed saving in annualised capital and operating costs, in the authorities' evidence to the Transport and Environment Committee.

Table 13.2: PPP contracts with Scottish Water

Project name:	Contract signed	Duration years	Construction costs (£m)	Annual fee in 2002-03
Almond Valley, Seafield and Esk Valley: Stirling Water (Seafield) Ltd	1999	30	£100m	£25m
Levenmouth: Caledonian Environmental Services Ltd	2000	40	£46m	£5m
Highland (Fort William and Inverness): Catchment Ltd	1996	25	£33m	£9m
Tay: Catchment (Tay) Ltd	1999	30	£84m	£17m
Aberdeen: Aberdeen Environmental Services Ltd	2000	30	£64m	£13m
Moray: Catchment (Moray) Ltd	2001	30	£60m	£8m
Daldowie/Shieldhall: SMW Ltd	1999	25	£66m	£16m
Dalmuir: Scotia Water UK Ltd	1999	25	£37m	£7m
Meadowhead, Stevenston & Inverclyde: Ayr Environmental Services Ltd	2000	30	£59m	£12m
Scotland total			£549m	£112m

Not only was the design of the projects tailored to meet local conditions, there were also some important differences in what had been agreed between the contracting parties. The most obvious was that in the three projects contracted by the West of Scotland Water Authority, operational staff from the authority (now Scottish Water) work in the waste water treatment works and continue to be paid directly by Scottish Water. These costs are not included in the costs quoted above. Scottish Water also continues to pay local authority business rates directly, since there is no benefit from risk transfer in having a consortium pay this directly. Table 13.2 therefore does not include business rate costs still incurred by Scottish Water.

There are also costs that relate to insuring and maintaining the assets transferred to PPP schemes which ceased to be direct costs to Scottish Water (East of Scotland Water Authority transferred £30 million of treatment works). Assets and equipment that become redundant as a result of the PPP may be closed and sold.

This 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.

13.7 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 commentators focus on the relative merits of the public and private sectors in general. While it is true that the impact of meeting the UWWTD would have placed a very large burden on public spending over a short timescale, the key measure should be whether the PPP achieved value for money for customers.

When we analysed this issue in 2001, we concluded that the evidence suggested that these schemes were all delivered at a much lower cost for customers than would have been achieved by the three authorities under traditional procurement.

We outlined our analysis in the *Strategic Review of Charges 2002-06*:

“The annual charge for PPP schemes covers the capital financing costs, maintenance, and day-to-day running costs. Assuming an average weighted cost of capital of 7.5% before tax, the financing cost of an investment of £550 million, annuitised over 25 years, is around £48 million per year. On this assumption, the remaining annual costs of PPP, some £64 million, cover operating and capital maintenance costs. If I compare these costs with information from England and Wales and from the authorities, capital maintenance costs probably account for about half of this £64 million. This leaves £32 million to cover the pure operating costs of the consortium. This cost can be benchmarked against England and Wales, using my adapted version of Ofwat’s econometric models.

The results of analysis using the econometric models are instructive. The benchmark costs for operating

similar works to those provided in Scotland by the PPP in England is approximately £22 million. There may be some special factors that might very moderately increase this allowance for efficient operation. This may be as much as £1 million, taking the allowable operating costs at the frontier of efficiency to £23 million [...].

In general terms, my analysis shows that operating costs in Scotland are currently approximately double what they should be possible to achieve. On this basis my expectation would be that if the Scottish industry were to operate these works, the likely operating costs would be £46 million. The £32 million of operating cost included in the PPP contracts therefore compares favourably with the operating costs that would otherwise have been incurred. The 7.5% discount rate on the capital is also broadly equivalent to the 6% real rate that the public sector is required to use [...].

It would appear (as would almost certainly be expected) that the value of the gap between the efficiency frontier and current Scottish authority performance has been shared. It is therefore possible to conclude that PPP to date in Scotland has delivered some quite significant benefits to customers. These benefits include more timely compliance with the UWWTD and the removal of operating cost and capital delivery risk. Most importantly, customers will actually pay less for the service provided by the PPP contractor than they would have done under traditional procurement.”²

In the *Strategic Review of Charges 2002-06*, we suggested that there were opportunities for Scottish Water to review the PPP contracts that it inherited. There were two principal opportunities in this regard. The first relates to the costs of financing the capital investment. The decline in interest rates since the contracts were originally let would suggest that there should be scope to reduce the capital costs that are included in the annual payment. Guidance from HM Treasury would suggest that such benefits ought to be pursued in a proactive way by the public sector organisation, and the benefits shared between the customer and the contractor.

The second potential benefit relates to the scope for reduced operating costs. It seems clear that the implied operating costs of the PPP consortia are high relative to the expected level of operating costs associated with a waste water treatment plant of similar size. There would therefore appear to be some scope for improved efficiency. Moreover, the recent and continuing significant improvement in Scottish Water's operating expenditure efficiency would suggest that it is now quite likely that Scottish Water could operate these plants at equal or lower cost than the PPP consortia. It is conceivable that Scottish Water could seek to take the operation of these assets back 'in-house'.

13.8 Options for 2006-10

We do not have any doubt that the PPP contracts represented good value for money at the time that they were concluded. However, we consider that improvements in Scottish Water's performance have made it less clear that the PPP contracts represent good value for money to customers today. It is important to make sure that customers' bills are no higher than they need to be and, as such, we need to consider which steps we might take to reduce PPP costs.

Possible options could be to set an efficiency target for PPP or to adjust the level of allowed revenue to reflect the efficient costs (financing and operating) of the services that are being delivered through PPP.

We would, of course have to establish that such an action was proportionate and could be realised by Scottish Water. Any contractual barrier to renegotiation would therefore have to be clearly demonstrated.

Our first proposed approach will be to look at the prices for which shares in the PPP concessions are changing hands and assess what this may tell us about the value for money that customers are currently receiving. Even if these prices are quite significantly lower than the apparent value to the current customer, we would have to take account of the extent of the risk transfer that still remains with the PPP consortia.

² Page 181, *Strategic Review of Charges 2002-06*.

The second proposed approach will be to look again at the operating and capital maintenance costs of the PPP consortia and use the benchmarking techniques that we outlined in Chapters 8 and 9 to assess the scope of any inefficiency. We will also use the capital maintenance models that we will describe in detail in Volume 5. Again, we would propose to take account of the value of any remaining risk transfer.

If we conclude that the customer is currently paying too much for the services that are being provided (or will be by the end of the next regulatory control period) we would propose to take account of this in Scottish Water's price caps. This is clearly a move forward from the *Strategic Review of Charges 2002-06* where we did not set an efficiency target on PPP. However, we did note at that time that it could in the future be appropriate to apply such an efficiency target. We would welcome the views of stakeholders on this issue.

13.9 Questions for consultation

1. Do respondents believe that we should set an efficiency target on PPP if we can identify that it is currently a more expensive option for customers?
2. Do respondents believe that our approach to looking at the value for money of PPP is appropriate?
3. If we determined that an efficiency target was appropriate, should this be implemented at the start, during or at the end of the next regulatory control period?

Section 5: Chapter 14

Setting the allowed level of operating costs

14.1 Introduction

In Chapters 7 to 10, we explained how we would determine the size of the efficiency gap that exists between the water industry in Scotland and that in England and Wales. In Chapters 11 and 12 we set out how we would assess the scope of improvement and the impact of new operating costs on the baseline for operating costs. This chapter explains how we use this analysis to set targets. It also discusses in some detail how the target should be presented. It is important that this target is clear and cannot be misinterpreted. It is also vital that the target is consistent with the results of our benchmarking.

This chapter sets out the following:

- the response to targets in the *Strategic Review of Charges 2002-06*;
- how Ofwat presents targets for improvement in operating cost efficiency;
- a potential role for incentives in setting targets;
- the detailed process for determining allowable operating expenditure; and
- the process for setting separate operating expenditure efficiency targets for different areas of the business.

14.2 Operating cost efficiency targets in the Strategic Review of Charges 2002-06

14.2.1 Presentation of the targets

In the *Strategic Review of Charges 2002-06*, we set two operating cost efficiency targets. We assessed the first by benchmarking the performance of the three authorities and the three former authorities combined against an appropriate comparator company. This benchmarking used both the adapted Ofwat econometric models and the alternative model. The second target reflected the scope for savings in Scottish Water as a result of the merger¹.

In using both the Ofwat econometric models and the alternative model we made it clear that we had not adjusted the targets to reflect differences in either the level of service or the scope of activities:

“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 English and Welsh companies for the costs incurred in domestic metering.
- English and Welsh companies are expected to out-perform their targets.
- The proposed Scottish Water should be able to learn from the privatised companies.
- My target is 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 advised revenue caps also included ‘spend to save’ of £200 million over the first three years of the regulatory control period. Spend to save was made available so that the management of Scottish Water would be able to meet any one-off costs (such as redundancy payments, cancelling leases, updating IT systems and so on) associated with improving efficiency.

Our presentation of the first operating cost efficiency target (ie not including the merger savings) was clear. This information was included in a table²:

	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

¹ Details of this analysis can be found in Chapters 18 and 20 of the *Strategic Review of Charges 2002-06*.

² *Strategic Review of Charges 2002-06*, page 192.

The allowable operating cost did not include any new operating costs.

New operating costs were presented separately³:

	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

The merger savings were explained separately. They amounted to £29.3 million in 2005-06.

14.2.2 Response to the targets

In hindsight, it would clearly have been better to present a summary of the various elements of the operating cost efficiency target, including spend to save. This would have reduced the scope for misunderstanding of the target. Responses to the way we had set targets focused on the following areas:

- merger savings;
- the target to close 80% of the assessed efficiency gap; and
- the application of new operating costs.

These are discussed in more detail below.

Merger savings

The shadow management of Scottish Water argued that it was not reasonable to include merger savings in the targets for the 2002-06 regulatory control period. They suggested that the target should only reflect the results of the econometric models.

We considered that this was not appropriate for two reasons. Firstly, there would be significant and immediate savings that resulted from the merger of the three authorities (the reduction in head offices, senior management, depots etc). Moreover, any costs of

making these changes would be covered by the spend to save that we had included in the revenue caps. Secondly, the Scottish Executive had cited potential merger savings as one of the factors that had influenced its decision to merge the three authorities.

The target to close 80% of the assessed efficiency gap

The shadow management of Scottish Water argued that we ought to set targets using the Ofwat methodology for the rate at which an efficiency gap should be closed. Ofwat sets two targets: one for the industry as a whole and a second for companies to narrow the gap to the frontier company. We explained this method in Chapter 11 and will discuss the presentation of targets by Ofwat later in this chapter. They argued that if we had used this approach the target would have been somewhat lower.

It is true that the 80% closure of the efficiency gap was a slightly more demanding target. However, the companies south of the border did not receive a spend to save allowance in their regulatory settlement. Furthermore, the companies had an incentive to outperform regulatory targets in order to provide shareholders with an enhanced return on their investment.

We had also been able to show that the companies had on average closed 85% of their efficiency gap to the frontier company in their best five-year period. A target of 80% closure therefore seemed proportionate, especially since Scottish Water could take advantage of the lessons that had been learned south of the border in improving efficiency.

The application of new operating costs

We included an allowance to cover the additional operating costs of treating sewage required by the *Quality and Standards II* investment programme. We explained that there was 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 level that will be delivered by the Scottish industry in 2005-06.

³ *Strategic Review of Charges 2002-06*, page 190..

Our expectation was that the level of service would improve during the 2002-06 regulatory control period. The shadow management of Scottish Water complained that the efficiency target materially understated the challenge. This was because Scottish Water would have to fund the extra costs of operating new capital plant built to improve water quality standards. The management estimated these costs and added them to the efficiency target. As a result, the targets that the management presented differed from ours.

This difference was important because performance monitoring by a regulator requires any assessment of performance to be consistent with the established baseline for operating expenditure. It is important that all stakeholders accept that all comparisons will be made relative to this baseline.

Lessons to be learned

Although we presented a level of total operating costs for Scottish Water in the *Strategic Review of Charges 2002-06* in a clear way, we did not combine all of the elements of the targets. This resulted in an undesirable loss of transparency. We therefore propose to ensure that we present the target clearly in terms of total allowed operating costs (not including depreciation).

We also propose that the efficiency targets that we set will take account of the actual level of service that is currently delivered by Scottish Water. This will increase the efficiency target, but will allow Scottish Water to submit a claim for new operating costs for all improvements in the level of service or in the scope of activities undertaken. This will place the onus on Scottish Water to make the claim for new operating costs and will ensure that we can monitor delivery of improvements and improvements in efficiency. The targets will therefore be as transparent as possible.

14.3 Ofwat's 'continuing' and 'catch-up' targets

We are proposing to set one target for operating costs for each year. We believe that this will reduce the scope

for uncertainty about whether or not Scottish Water has met its targets.

Ofwat has traditionally used a different approach. Ofwat sets two targets for operating expenditure:

- one which identifies the scope for continuing efficiency improvement by all companies; and
- a separate target which sets the rate at which the other companies should close the efficiency gap to the frontier company.

Ofwat's benchmarking models allow it to assess the scope for catch-up, based on relative performance. In Chapter 11, we described how Ofwat has sought advice from expert independent economic consultants. This advice focused in particular on the scope for productivity improvements across the water industry as a whole.

Following this work, Ofwat has reached its draft conclusions on the size of the two elements of its targets⁴:

- Continuing (minimum) efficiency – the amount of improvement that even the most efficient company can achieve.

Ofwat's draft determination⁵ assessed that all of the water and sewerage companies in England and Wales had scope to achieve improvements of 0.6% per year in water service base operating expenditure, and 1% per year for sewerage.

- Catch-up efficiency – the amount of improvement that a less efficient company has to make in order to close the gap with the most efficient company.

Catch-up targets are usually company specific – in its draft determination, Ofwat assessed the scope for catch-up factors for water base service operating expenditure at an average of 2% per year. For the sewerage service, the scope for catch-up was assessed at an average of 2.9% per year.

⁴ Ofwat, *Future water and sewerage charges 2005-10 – Draft determinations*, August 2004, page 128.

⁵ Ofwat, *Future water and sewerage charges 2005-10 – Draft determinations*, August 2004.

In summary, Ofwat concluded that the industry should improve at 2.6% and 3.9% each year for the water and sewerage services.

Ofwat adopts the approach of setting two separate efficiency targets because it considers that it is helpful to split the efficiency targets between continuing and catch-up elements. It believes that this increases transparency and that companies (and stakeholders) will understand exactly what they are being asked to achieve.

As we explained in Chapter 11, we do not consider that it would be reasonable to expect Scottish Water to be at the frontier of water and sewerage operating cost efficiency by the end of the next regulatory control period. As a result, we believe that we do not need to consider the scope of productivity gains in the water industry as a whole. We can set targets with reference to the companies' likely response to Ofwat's targets. This analysis would take into account the incentive element of Ofwat's targets. The target and the incentive element are likely to determine Scottish Water's future performance gap.

We believe that we are able to set more robust targets by focusing on where the companies are likely to be by the end of their next regulatory control period. It is important that Ofwat assesses the scope for overall industry improvement and includes this in efficiency targets; however, such analysis is rather less robust than efficiency targets that are part of a regulatory settlement which companies have accepted.

14.4 A role for incentives in setting targets

In setting these targets for improvement in operating cost efficiency, Ofwat leaves scope for a company to outperform the target. Shareholders are likely to pressure management to maximise their available return and encourage outperformance. Shareholders are allowed to retain the benefits of such outperformance for five years.

We have to decide whether we should adopt a similar approach to that used by other regulators by setting

efficiency targets for Scottish Water such that it has an incentive to beat our targets. In Chapter 4 we discussed the incentive effect of RPI-X regulation and outlined some of the ways in which the benefits of outperformance can be used, namely to:

- reward employees for their efforts (eg through bonus schemes);
- reward shareholders for investing in the company (eg through higher dividends);
- give customers a share in the benefits of outperformance (eg through a reduction in prices); and
- allow companies to reinvest their outperformance in improving performance (eg an enhanced level of service).

Ofwat allows companies to retain the benefits of outperformance for five years because there would be a danger that if the benefits were immediately returned to customers, then shareholders (and consequently management) would see no reason to outperform the regulatory settlement. This is because there would be no prospect of improving on the allowed rate of return set by Ofwat (RPI-X would be hardly different from rate of return regulation). In the longer term, allowing companies to outperform the regulator's targets and retain the benefits for a limited period will benefit customers.

One of the ways in which a regulator can encourage outperformance is to set efficiency targets at less than the reasonable scope for improvement. For example, if we decided that the scope for improving efficiency was 5% per year, then we might set the target at 3% per year. Customers would benefit from the 3% efficiency target, which would reduce prices (relative to what they would otherwise have been) and Scottish Water is encouraged to outperform the efficiency target because it should be able to improve at 5% per year. It could then use the additional 2% annual scope for improvement to reward employees, invest in non-core activities or, perhaps, reduce prices to customers. In the long run, customers

will benefit because the baseline for operating expenditure in future regulatory control periods will be lower and this will help keep prices to customers at the lowest sustainable level.

Ofwat has adopted such an approach in its current review of price limits for the water and sewerage industry in England and Wales. In its draft determination⁶, Ofwat stated that it believes that the scope for efficiency improvements in operating expenditure is around 3% per year. This is split between the water and sewerage services as follows:

- Ofwat assessed the overall scope for efficiency from the water service operating expenditure baseline to be 2.6% per year. However, Ofwat has assumed an efficiency improvement of only 1.4% per year. Ofwat therefore expects that the companies will outperform the target by 1.2% a year.
- Ofwat assessed the overall scope for efficiency from the sewerage service operating expenditure baseline to be 3.9% per year. However, Ofwat has assumed an efficiency improvement of only 2.0% per year. Ofwat therefore expects that the companies will outperform the target by 1.9% a year.

For both water and sewerage, Ofwat has included in price limits only just over half of the total scope for improvement that it believes is available to the companies. The benefits of the potential for improvement in operating cost efficiency is therefore being split broadly evenly between customers and shareholders in the hope that this incentive will encourage companies to strive to improve their efficiency by as much as possible.

If we were to adopt a similar approach and set efficiency targets such that Scottish Water was encouraged to outperform and make additional savings, then we would need to ensure that these savings would ultimately be passed on to customers. More fundamentally, we need to consider whether it is appropriate to give Scottish

Water incentives to outperform its regulatory settlement. Scottish Water remains in the public sector and stakeholders may take the view that it should not keep the benefit of any outperformance for even a short time. The question is whether customers should pay a little more now in order to ensure that Scottish Water becomes more efficient in the future. We would welcome stakeholders' views on this issue.

14.5 Calculating total allowable operating expenditure

We are proposing to set targets in terms of total allowable operating expenditure (not including depreciation). We will set total allowable operating expenditure at a level that we believe is sufficient for Scottish Water to carry out its operations for each year of the regulatory period. This is the amount that will be funded through charges to customers. It is made up as follows:

Total allowable operating expenditure	
=	
Baseline operating expenditure ⁷	
±	
Assessed changes in baseline operating expenditure	
-	
Efficiencies in baseline operating expenditure ⁸	
+	
New operating expenditure ⁹	
-	
Efficiencies on new operating expenditure	
+	
Public Private Partnership operating expenditure ¹⁰	
-	
Efficiencies on Public Private Partnership operating expenditure	
+	
The impact of annual inflation on all of these components	

We will no longer refer to a monetary value for the total efficiencies required. However, if stakeholders want to

⁶ Ofwat, *Future water and sewerage charges 2005-10 – Draft determinations*, August 2004.
⁷ See Chapter 6.
⁸ See Chapters 7, 8 and 9.
⁹ See Chapter 12.
¹⁰ See Chapter 13.

count the total monetary value of the efficiencies required in this regulatory control period in order to compare it with that used in the *Strategic Review of Charges 2002-06*, they should add up the following for each year and then adjust for annual inflation:

- efficiencies in baseline operating expenditure;
- efficiencies in new operating expenditure; and
- efficiencies in Public Private Partnership costs.

14.6 Detailed process for calculating allowable operating expenditure

We propose to follow the steps outlined below to determine our initial conclusions on the allowable operating expenditure for Scottish Water:

Step 1 Establish base operating expenditure, as set out in Chapter 6.

Step 2 Assess whether there are likely to be any changes to base operating expenditure, as set out in Chapter 6.

Step 3 Use reported total operating expenditure in 2003-04 (which we proposed to use as the base year for the Review) to assess the extent of the efficiency gap that exists between Scottish Water and the companies in England and Wales. We will use the tools set out in Chapters 8 and 9 to assess the efficiency gap.

Step 4 Review the evidence on Scotland-specific factors that we should take into account and which would alter our assessment of the efficiency gap. These factors could include:

- differences in levels of service provided to customers with those provided in England and Wales;
 - differences in the scope of activities with England and Wales; and
 - factors relating to Scotland's geography.
- Our initial thoughts on these issues are set out in Chapter 10.

Step 5 Given the size of the adjusted efficiency gap, review the evidence on the following, each of which are discussed in Chapter 11:

- the scope for improvement in the water and sewerage industry in Scotland;
- the pace of change that Scottish Water could realistically achieve in tackling efficiency savings;
- the extent of gap closure that could realistically be achieved by Scottish Water in the four years 2006 to 2010; and
- the scale of targets set by Ofwat for the companies over the period 2005 to 2010.

Step 6 Assess the forecast level of new operating expenditure and the level of efficiency savings that could be applied to such expenditure. This is discussed in more detail in Chapter 12.

Step 7 Assess the forecast level of Public Private Partnership expenditure and the level of efficiency savings that could be applied to such expenditure. This is discussed in more detail in Chapter 13.

Step 8 Apply our assumptions of annual inflation to the results of Steps 5, 6 and 7.

This process will allow us to assess a level of operating expenditure that we believe it would be possible for Scottish Water to achieve by March 2010. We will also, however, take into account the views of stakeholders on the extent of the efficiency gap that Scottish Water should be required to close.

We would expect to receive a wide range of responses. If we believe that some stakeholders' expectations are unachievable, then we will explain the reasons for this view. If stakeholders were happy for Scottish Water to make less progress than we believe is possible towards an efficient level of operating expenditure, then we would have to consider whether or not to modify our calculated targets.

14.7 Setting separate efficiency targets for different areas of the business

In the *Strategic Review of Charges 2002-06*, we set efficiency targets for Scottish Water as a whole, ie for all water and sewerage services, together with its non-core services. This approach was different from that adopted by Ofwat for the companies in England and Wales. Ofwat sets efficiency targets for the core (regulated) business only, and splits the targets into separate targets for the water and sewerage services.

For the current Strategic Review, we need to take into account recent developments in the regulatory framework in Scotland. These are discussed in detail in Volume 2. As a consequence of these changes, we believe that we will need to set targets for the following business areas:

- core wholesale water service;
- core wholesale sewerage service; and
- new non-core retail service for non-domestic customers.

There are three main changes that affect the way we set targets. First, our legal remit changed in 2002 to cover only the core activities of Scottish Water – broadly those activities required by statute. We will not therefore be extending our targets to cover Scottish Water's non-core services.

Second, since the last Review we have sought to make charges more cost reflective than in the past. Customers pay separately for water and sewerage services, so it appears sensible to set separate targets for water and sewerage operating expenditure. Ofwat also follows this approach.

Third, draft legislation – The Water Services Etc. (Scotland) Bill – proposes to separate the wholesale and retail parts of Scottish Water's business, and to open up the latter to competition for non-domestic customers. Again, it would appear to be sensible to separate wholesale and retail targets.

Setting separate targets may, however, present an issue regarding how achievable they might be. Some commentators have argued that where targets are based on comparisons of performance between different business areas of different companies, then they are based, in effect, on a hypothetical comparator. This would be because, in practice, no single company is a leading performer in every business area. It could be argued that no single company had demonstrated the overall level of performance implied by the targets when taken together.

However, we believe that where comparator companies have demonstrated best practice in a particular area, it would not be in customers' interests for us to ignore that when setting targets. There is an important proviso to this – the demonstrated best practice must be real and must be measured in a reliable way, with costs appropriately allocated by the comparator company. Ofwat applies tests to ensure that this proviso holds when it sets separate targets for water and sewerage operating expenditure, using different comparator companies. The argument also extends to the separation of capital investment from operating expenditure – again, Ofwat uses different comparator companies. Given Ofwat's approach, we believe that it is appropriate and in customers' interests to set targets for Scottish Water using comparisons with best practice.

14.8 Conclusion

We are keen to ensure that our targets are clear and unambiguous. We believe that setting the total allowable level of operating cost will ensure that there is less scope for disagreement about whether the targets have been achieved.

In this chapter we have explained how we will set the level of allowable operating expenditure. The actual level will of course depend on the detailed analysis that we carry out, first in advance of publishing draft targets in January 2005, then for draft determination in June 2005, followed by final determination in December 2005.

We are keen to hear stakeholders' views on our proposed approach to setting targets and the role of incentives.

14.9 Questions for consultation

1. What are respondents' views on our proposals to set a level of allowable operating cost as the target for Scottish Water in each year of the regulatory control period?
2. What are respondents' views on the scope for improved efficiency at Scottish Water? It would be helpful if stakeholders could express their views either with reference to the performance of the companies in England and Wales or with reference to Scottish Water in isolation, and to provide reasons.
3. Do respondents have any views regarding Scottish Water's performance beyond 2010?
4. Do respondents believe that it is appropriate for us to set allowable levels of operating expenditure for Scottish Water such that the corporation has an incentive to outperform? If so, what are respondents' views on the split between efficiency targets and the incentive to outperform?
5. Should we seek to set separate levels of allowable operating expenditure for the 'wholesale' sewerage, 'wholesale' water and non-domestic retail components of Scottish Water?

Section 5: Chapter 15

Regulating levels of service

15.1 Introduction

The price caps that we propose to set at the *Strategic Review of Charges 2006-10* will take account of the scope for operating cost efficiency that we identify. Scottish Water should meet its efficiency targets by improving the way that the business is operated. It is important that Scottish Water does not seek to live within its price cap by reducing the level of service that it provides to customers.

We must therefore decide how to ensure that an appropriate level of service is delivered at the same time as cost efficiencies are being achieved. There are two possibilities for regulating levels of service:

- Firstly, we could benchmark the performance of the regulated company against the performance of other companies in the same or similar industries. The results of this benchmarking would be published in order to provide the company with an incentive to improve performance in the future.
- Alternatively, we could set targets for some or all aspects of service quality. These targets should be quantifiable so that it is possible to measure whether the particular aspect of service has been delivered to the required standard.

There are strengths and weaknesses associated with both approaches. Different regulators have taken different views on which approach is most appropriate in their industry. One reason for this may be that different industries face different challenges.

There are specific circumstances in Scotland that may have an impact on how we regulate quality of service. An important consideration is that the information relating to quality of service performance in Scotland is poor relative to that which is available in England and Wales. This would make it more difficult to set robust targets for improvements in the level of service. However, it could be argued that since the quality of service performance in Scotland is relatively poor, it is

clearly in customers' interests to set a target for improved service performance.

This chapter will outline the two possible approaches to levels of service regulation. It then provides an example of each approach in practice – Ofwat's use of the benchmarking approach in regulating the water and sewerage industry, and Postcomm's use of target setting in regulating Royal Mail. We then consider the strengths and weakness of each approach, and discuss how we might address this issue in Scotland.

15.2 The benchmarking approach

The benchmarking approach involves comparisons of the way that different companies perform. Under this approach, the regulator identifies and reports on the relative performance of companies. On the basis of these comparisons, the regulator may decide to introduce incentives or penalties for companies.

In order to benchmark performance there must be at least one comparator company. Moreover, the companies being compared should be similar. Generally this will mean that the companies are in the same industry, although in some circumstances it may be possible to make comparisons between industries. For example, electricity, gas and water companies all have metering, billing and complaints handling functions. For these activities it would be possible to compare the level of service provided by Scottish Water with the level of service provided by water companies in England and Wales and by other utilities. If we used a comparator from a different industry, there would be an onus on us to explain why the comparison was valid.

15.2.1 Ofwat's approach to level of service benchmarking

Ofwat has adopted a benchmarking approach to its regulation of levels of service. Each year it publishes a report on the levels of service provided by the water industry in England and Wales. In this report, Ofwat describes the levels of service provided by the water

and sewerage companies for a variety of elements of customer service. Eight individual standards are reported and discussed. These individual standards are referred to as the 'DG standards'¹. In addition to performance against the DG standards, a measure of overall performance is reported. This combines the eight individual DG standards as well as some additional measures that are not reported separately.

For overall performance and for each individual measure Ofwat provides the following information:

- A table showing the performance of each individual company. This allows the differences in performance between companies to be quantified.
- A rank order of companies, from the best performer to the worst performer. This also indicates which companies perform better than the industry average and which perform worse.

Ofwat's benchmarking of levels of service plays a role at price reviews. On the basis of the companies' performance in the period 1996-97 to 1998-99, Ofwat made an adjustment to price limits at the 1999 price review. In the first year of the 2000-04 regulatory control period, Ofwat rewarded good performance with an adjustment to the 'K'² factor of +0.5% and penalised poor performance with an adjustment of -1.0%. After analysing company performance, Ofwat made the following adjustments:

Adjustment to K factors in 2000-01	Company
+0.5	Southern, Wessex, Bristol, North Surrey, Tendring Hundred
-0.5	North West, South West, Yorkshire, Mid Kent, Three Valleys
-1.0	None

Ofwat intends to retain the same range of potential adjustments for the 2004 price review.

15.2.2 Rationale for the benchmarking approach

The role of a regulator is to ensure that customers receive better value for money. Improved value for money can result either from lower costs and maintenance of service levels or an improvement in the quality of service provided to customers. There are several reasons why companies might attempt to improve the quality of service they provide if they know that their performance will be published in a league table and may impact on their price settlement.

- Companies are likely to act to avoid being a poor performer. Managers do not want to get a reputation for running a company that performs less well than other similar companies. The more widely the results of the benchmarking are circulated, the greater should be the incentive effect on managers.
- Shareholders will be concerned about the impact of poor performance. It may attract the attention of the regulator and encourage more detailed scrutiny of the business. Shareholders will therefore exert pressure on managers to improve service performance.
- The level of service adjustment that Ofwat applies at the price review should provide an incentive to companies to avoid being one of the worst performing companies and to aim to be one of the best performing companies. The effectiveness of these incentives will depend on the size of the potential reward or penalty relative to the expenditure required to make a difference to the assessed level of service performance.
- The threat of competition in certain aspects of the business, for example as a result of common carriage, retail competition or off-network solutions, should encourage companies to consider their level of service performance relative to other companies. One way to win customers in a competitive environment is to provide a higher quality service.

¹ The first report by Ofwat on the water companies' non-financial performance was entitled '*The water industry of England and Wales: Levels of service information, 1989-90*' (Ofwat 1990). This introduced a number of service quality performance indicators known as DG standards. These indicators have been developed and refined over time.

² The 'K' factor is the amount by which companies south of the border are allowed to change their prices.

15.2.3 Issues raised by the benchmarking approach

The benchmarking approach raises two issues:

- Whether or not the incentives for performance improvement are sufficiently strong.

In practice, regulatory reports are not widely read. This may limit the incentives on companies to improve their performance in order to maintain their reputation. It is also possible that a poorly performing company would prefer to suffer a penalty rather than incur the expenditure that is necessary to improve performance.

- Whether or not the incentives for performance improvement are appropriate.

In England and Wales, companies may have an incentive to focus on improving their OPA score rather than focusing on delivering the elements of service that customers want and are willing to pay for. Companies also have an incentive to focus on the least cost way to raise their OPA score. However, provided Ofwat's overall performance measure reflects customer preferences accurately for all companies in England and Wales, this should not be an issue. This places an onus on the regulator to ensure that the system that is used to measure performance reflects any significant changes in customers' priorities.

15.3 The target setting approach

The target setting approach involves setting specific targets for particular aspects of a company's performance. In principle, the target could be set for the company's overall performance, with the company being left to decide the effort required on each aspect of service in order to meet the overall target. It could be that the performance targets require the company to maintain its level of service, or could require the company to improve its level of service.

The target setting approach requires the regulator to take a view on the optimum level of service. This is not

a straightforward process. The regulator will have to take account of customer preferences about each aspect of service, both individually and relative to each other. The regulator will also have to take account of customers' willingness to pay for different levels of service.

Under the target setting approach the regulator imposes penalties on the regulated company for failing to meet levels of service targets. Such penalties are designed to raise customer awareness of the shortfall in the standard of service and to require managers to cut costs further to meet their financial targets.

15.3.1 Postcomm and Postwatch's approach to level of service targets

In the UK, Postcomm (the Postal Services Commission) and Postwatch (the Consumer Council for Postal Services) have adopted the target setting approach to regulating levels of service. Postcomm was set up by the Postal Services Act 2000 to ensure that postal operators, including the Royal Mail, meet the needs of their customers throughout the UK. Postwatch, set up by the same Act, is the consumer watchdog for postal services. Postwatch and Postcomm both play a role in customer service regulation:

- At the 2003 price review, Postwatch and the Royal Mail agreed 15 targets for quality of service. The broad areas of service where Postwatch sets targets are documented in Royal Mail's licence at Condition 4. Specific standards and targets are incorporated into the licence in an annex to Condition 4.
- Postcomm monitors compliance with the standards and publishes information on Royal Mail's performance. It also has the power to take enforcement action and levy financial penalties for service failure.

The target setting approach in postal services is required as a result of European and national legislation. The EU Postal Services Directive³ implemented the first steps towards a harmonised approach to postal services within the EU. The Postal

³ Directive 97/67/EC.

Services Regulations 1999 brought this Directive into UK law. These regulations were superseded by the Postal Services Act 2000. The Directive required member states to set quality of service standards and report against them⁴. It also provided an indication of the broad areas for levels of service standards – ‘routing times’⁵ and the regularity and reliability of service.

The current service standards reflect Royal Mail’s own internal performance measures. These were not developed on the basis of customer preferences and they pre-date the current regulatory regime and the Royal Mail licence. Postwatch, Postcomm and Royal Mail recognise that there is a need to relate targets for service standards to customers’ preferences. The three parties jointly commissioned market research into customers’ needs and expectations. Postcomm’s preliminary analysis⁶ of the results of this research suggests that there is no single dominant factor, but that most customers are looking for improved service in all areas. Postwatch intends to consult on how the research should be used to develop measures of the quality of service. If Royal Mail does not meet its level of service targets for first class mail, second class mail and the standard parcel service, its allowed revenue is reduced. For non-bulk mail, 0.9% of Royal Mail’s revenue is dependent on the company meeting service targets. This is known as the ‘C’ factor and it results in lower price increases for customers in the year following a failure to meet targets. In 2003-04, the Royal Mail was allowed £13 million out of a total ‘C’ factor of £30 million.

Postcomm can also impose financial penalties on Royal Mail. The power to levy a financial penalty requires Postcomm to demonstrate that Royal Mail has not made “all reasonable endeavours” to meet its targets. The penalty aims to claw back ‘excess profits’ ie the profits that would have been earned if the targets had been met. Postcomm fined Royal Mail £7.5 million in 2002-03.

Two compensation schemes are also available to Royal Mail’s customers:

- The first scheme covers bulk mail. This compensation scheme returns increments of Royal Mail’s income to customers for this service. The rate is 0.1% of income generated from each bulk mail product for every 0.1% that it fails on a target. This is subject to a minimum of 1% and a maximum of 5%.
- The second scheme covers retail services. This scheme allows retail customers to seek compensation directly from Royal Mail for delays in delivery.

The total financial penalty on Royal Mail in 2003-04 was £50 million (this compares with a turnover of £8,633 million).

In its price and service review, Postcomm is consulting on whether further incentives are required to ensure that Royal Mail performs better in its levels of service. Postcomm is also seeking to place more responsibility than “all reasonable endeavours” on the Royal Mail for improving its level of service.

15.3.4 Rationale for the target setting approach

The target setting approach is particularly useful in situations where there are no direct comparators for the regulated company, for example in industries where there is one company and one regulator. In some industries, such as the water industry in England and Wales, there are regional monopolies that can be compared with one another. However, in other industries, such as the postal industry, there is a single dominant incumbent. To the extent that other postal companies exist, they compete only in certain locations or in certain elements of the incumbent’s business. In theory, it could

⁴ Directive 97/67/EC (The EU Postal Services Directive) Chapter 6. Quality of services Article 16: Member States shall ensure that quality-of-service standards are set and published in relation to universal service in order to guarantee a postal service of good quality. Quality standards shall focus, in particular, on routing times and on the regularity and reliability of services. These standards shall be set by: the Member States in the case of national services, the European Parliament and the Council in the case of intra-Community cross-border services. Future adjustment of these standards to technical progress or market developments shall be made in accordance with the procedure laid down in Article 21. Independent performance monitoring shall be carried out at least once a year by external bodies having no links with the universal service providers under standardised conditions to be specified in accordance with the procedure laid down in Article 21 and shall be the subject of reports published at least once a year.

⁵ The time taken to deliver an item after the customer has deposited it.

⁶ 2006 Royal Mail price and service quality review - Consultation on principles, September 2004.

be possible to make international comparisons, but such comparisons may end up being relatively subjective.

An alternative approach in these circumstances is to assess the current customer service performance of the company and to set a target for future customer service performance.

In industries where comparators are available there may also be a role for targets. It could be argued that setting a company-specific target improves incentives by increasing transparency and certainty. In the same way that a water company in England and Wales is given a specific operating efficiency target (which takes account of benchmarking evidence) it could also be given a specific level of service target.

15.3.5 Issues raised by the target setting approach

The target setting raises two issues:

- Whether or not there is sufficient information to set a target.

In order to set an appropriate target, the regulator needs to understand the consequences in terms of cost to the firm of providing different levels of service.

- Whether or not the interaction between efficiency targets and level of service targets weakens the regulator's ability to target reductions in costs.

The regulator may be faced with a situation where the company meets most or all of its level of service targets but fails to meet an efficiency target. In this situation there is a clear risk that the regulator feels unable to enforce efficiency targets quite as strictly as he would otherwise have done.

Customer service has many different aspects. The cost of improving each aspect will vary depending on the level of service target that is set. Initial improvements may not be too costly to achieve, but further improvements are likely to become increasingly expensive.

It is also possible that in improving one aspect of service, there would be an impact on another, apparently separate, aspect of service.

If the regulator is to set appropriate levels of service targets, he needs to understand these marginal costs and customers' willingness to pay. We are not convinced that this would be consistent with our principles of transparency, consistency and proportionality.

15.4 An approach for Scotland

15.4.1 Strengths and weaknesses of different approaches

We believe that there may be some constraints on how we regulate the level of service provided by Scottish Water. Firstly, the information relating to the level of service performance in Scotland is poor relative to that which is available in England and Wales. Scottish Water provides this Office with customer service information on a quarterly and an annual basis. The reliability of this information currently restricts our ability to understand the actual customer service performance of Scottish Water.

Secondly, the quality of service performance in Scotland is poor relative to that in England and Wales. Scottish Water currently provides a lower quality service than any company in England and Wales. The gap in performance between Scotland and England and Wales is larger than can be explained by any inaccuracies in the information provided.

15.4.2 The benchmarking approach

We are currently using the benchmarking approach to monitor the level of the customer service that Scottish Water provides. This approach offers the advantage that we can use Ofwat's framework and information from the companies south of the border. We also have experience in collecting the customer service information required to make comparisons with the companies in England and Wales.

We do have concerns that the benchmarking approach may not provide sufficiently strong incentives to ensure that Scottish Water's performance improves. Unlike England and Wales, Scottish Water has no shareholders to exert pressure on the firm's managers. However, we recognise that there is considerable political pressure on

the corporation to demonstrate that it can provide a level of service that is comparable with that provided by the companies south of the border.

15.4.3 The target setting approach

The target setting approach is generally used when there is a single company without obvious comparators and there is good information available for setting the targets. We believe that this approach could be used even when a regulated company has comparator companies and the quality of information on performance would not allow us to identify the optimum level of service. We consider that there may be a case for setting a target to improve levels of service when the regulated company clearly lags behind a comparator.

There are, however, three potential weaknesses with such an approach:

- It is not clear that we could comment objectively on performance if some of the level of service targets were exceeded (and others met), yet costs remained demonstrably high.
- If we set targets now (when the gap is clearly significant) it may be difficult not to set targets in future. It is not clear that the costs of collecting the required information could be justified when the gap is much less significant.
- The Water Service etc (Scotland) Bill proposes to introduce a licensing regime for new entrants who want to provide a retail service to customers. These new entrants are likely to adopt a mix of pricing and service level approaches and it is not clear that we should constrain the management of Scottish Water Retail in its approach to the market. This would be a consequence of setting some level of service targets.

15.5 The proposed approach for Scottish Water

We propose to retain the benchmarking approach for

quality of service regulation. The approach is tried and tested for the water industries in Scotland and in England and Wales.

However, there may be a case for setting targets for certain key areas of service, where there is sufficiently good information available to adopt this approach. We believe, for example, that we should introduce a target for the level of leakage. We believe that the majority of customers would support action to reduce the level of leakage and also that there are substantial cost savings that Scottish Water could make by reducing leakage. We stated in the previous chapter that we are proposing to set efficiency targets that are adjusted to take account of differences in the level of service. In this instance, we would accept claims for new operating costs designed to improve levels of service provided there is a clear measurable output. We believe that this refinement of our benchmarking approach may capture some of the potential benefit of the target setting approach without the weaknesses. We would welcome the views of stakeholders.

15.6 Questions for consultation

1. What are respondents' views on the benchmarking approach and the target setting approach?
2. What are respondents' views on our proposed refinement of the benchmarking approach to include target setting for some key areas of service?
3. Are there any targets (eg leakage) that are appropriate in pursuing the benchmarking approach?

Section 5: Chapter 16

Monitoring operating expenditure and levels of service

16.1 Introduction

In this chapter, we describe how we intend to monitor Scottish Water's performance on operating expenditure – against the targets that we will set – and on levels of service. We have to monitor performance on both operating expenditure and levels of service to ensure that customers will benefit from improvements in efficiency.

We begin by describing how we currently monitor Scottish Water's performance. We then set out the information that we will use to monitor operating expenditure over the period 2006 to 2010 and how we propose to report progress. The chapter closes by outlining how we propose to monitor levels of service to customers so that we can be sure that Scottish Water does not compromise service delivery in order to achieve operating expenditure targets.

16.2 Monitoring framework

Our role as regulator is to set challenging, achievable targets which promote customers' interests. It is not for us to direct how targets should be achieved. This is a matter for the board and management of Scottish Water.

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

The *Strategic Review of Charges 2006-10* is only the start of the regulatory process. During the regulatory control period we will monitor Scottish Water's progress in reducing costs and improving levels of service. We intend to build on the framework that we have already put in place to monitor performance, through:

- regular information submissions, comprising the Annual Return and more frequent updates of key performance indicators, and forecasts;
- independent audit of regulatory information;

- a process of query, challenge and confirmation of numbers;
- rigorous analysis of current and expected progress against targets;
- publishing reports;
- the application of analytical tools which are designed to ensure that we can monitor real progress as opposed to apparent progress (for example, improvements that come from calculating information from the Annual Return in a different way).

We will also monitor Scottish Water's progress relative to that of the companies in England and Wales. We will continue to use information from the companies south of the border. This information will include:

- their Annual Returns to Ofwat;
- comments on these returns by independent auditors, which are published by Ofwat;
- companies' published regulatory accounts;
- Ofwat's published analysis of companies' progress; and
- rigorous analysis of relative efficiency using the benchmarking tools described in Chapters 8 and 9.

All stakeholders should have an interest in Scottish Water's progress. We are keen to share the results of our monitoring with stakeholders and to explain progress against the targets that we establish in the *Strategic Review of Charges 2006-10*. This should help ensure that surprises are kept to a minimum and that Scottish Water stays focussed on delivering improved value for money to customers.

16.3 Monitoring operating expenditure

In monitoring Scottish Water's performance in operating expenditure, we are primarily concerned with how much it spends each year relative to the total allowed operating costs. We would not be concerned with how Scottish Water spends the money unless there is evidence that the level of service provided to customers is getting worse.

Our monitoring will cover the following¹:

- baseline operating expenditure;
- new operating expenditure;
- Public Private Partnership (PPP) operating expenditure;
- year on year progress on each of the above against targets; and
- progress on baseline and new operating expenditure, relative to England and Wales.

Our sources of information for monitoring Scottish Water's progress against operating expenditure targets and its performance relative to the companies in England and Wales will include the regulatory returns shown in Table 16.1. Much of this framework is already in place and we use it to monitor progress against existing targets. We intend to introduce regulatory accounts² in 2005, to enhance the consistency of regulatory reporting year on year.

Table 16.1: Framework for monitoring progress on operating expenditure³

Sources of information	Operating expenditure			Relative performance
	Baseline	New	PPP	Baseline and new ⁴
<i>Scottish Water</i>				
Annual Return	✓	✓	✓	✓
Regulatory accounts (from 2005)	✓	✓	✓	✓
Monthly operating expenditure returns	✓			
Quarterly investment returns ⁵		✓		✓
Independent comments by Scottish Water's Reporter	✓	✓	✓	✓
<i>England and Wales</i>				
Companies' annual returns				✓
Company regulatory accounts				✓
Independent comments by Reporters in England and Wales				✓
Ofwat's published annual reports				✓
<i>Reporting progress</i>	↓			
	Costs & performance reports			

These sources of information are described in more detail in Volumes 1, 2 and 3. It is worthwhile to highlight two of the key information sources here.

Annual Return

The Annual Return includes a detailed breakdown of Scottish Water's operating expenditure by activity. It requires Scottish Water to submit important information about its customers, assets, volumes of water and sewage treated etc. We use this information to assess Scottish Water's efficiency in operating expenditure and its position relative to the companies in England and Wales.

¹ Chapters 6, 12 and 13 define and explain baseline, new and PPP expenditure, respectively.

² See Volume 2, Chapter 3.

³ The components of operating expenditure are defined in earlier chapters of this volume and are summarised in Chapter 14.

⁴ Comparisons of relative performance exclude PPPs as there is no direct parallel in the water and sewerage industry in England and Wales.

⁵ We use the quarterly investment returns to help monitor new operating expenditure because this expenditure is driven largely by Scottish Water's Capital Investment.

The Annual Return will continue to be Scottish Water's main information submission. This information will be supported by two changes to our monitoring regime:

- the appointment of a Reporter for the water industry in Scotland; and
- the introduction of regulatory accounts.

In December 2003, we appointed a Reporter to audit the information provided to us by Scottish Water, and to highlight any issues or inaccuracies. The Annual Return is subject to detailed review by the Reporter. Experience south of the border demonstrates that the introduction of a Reporter results in improved quality of information, increased regulatory transparency and more effective performance monitoring.

Regulatory accounts

The introduction of regulatory accounts is intended to provide separate reporting frameworks for the retail and wholesale elements of the current core business of Scottish Water. Regulatory accounts will reduce the number and scale of adjustments that we currently need to make to reported operating expenditure in order to ensure like-for-like comparisons with targets. This is because regulatory accounts impose accounting definitions that are fully consistent with the regulatory settlement. This should also ensure that stakeholders can have increased confidence in our reports on Scottish Water's performance.

16.4 Monitoring levels of service

In the previous two chapters we explained our proposals to monitor an allowed level of operating costs that would take full account of the scope for efficiency (ie it would also adjust for differences in the level of service and the scope of activities). We explained that we would accept claims for new operating cost from Scottish Water that were tied to an improvement in the level of service. We would scrutinise such claims to ensure that they were efficient and reasonable.

The baseline allowed level of operating cost should be sufficient to maintain the current level of service. New

operating costs would be expected to improve the overall level of service.

At the current time, we monitor the level of Scottish Water's customer service performance by using the overall performance assessment (OPA) that was developed by Ofwat. We would propose to monitor improvements in customer service (financed by new operating cost) relative to the OPA or, if this is not appropriate, to some other clearly defined benchmark.

The OPA combines results for customer service measures with other information about performance in drinking water quality and environmental compliance to derive an overall score for the level of service. Indicators include:

- water supply – pressure, supply interruptions and drinking water quality;
- sewerage service – sewer flooding incidents and risk of flooding;
- environmental impact – sewage treatment works compliance and pollution incidents; and
- customer service – speed of handling complaints, billing enquiries and telephone contacts.

Our framework for monitoring performance will focus primarily on the levels of service measures that comprise the OPA. However, the OPA does not cover all aspects of customer service. We will also monitor performance against Scottish Water's Guaranteed Minimum Standards (GMS). These were introduced in December 2000. They are minimum standards of service that Scottish Water must meet and which customers have a right to expect. Failure to comply with GMS entitles the customer to financial compensation. The GMS relate to:

- planned and unplanned interruptions;
- internal sewer flooding;
- payment enquiries; and
- complaints.

Table 16.2 sets out our framework for monitoring levels of service performance.

Table 16.2: Framework for monitoring levels of service performance

Sources of information	Guaranteed Minimum Standards	Overall performance assessment
<i>Scottish Water</i>		
Annual Return	✓	✓
Customer Service Performance Return	✓	✓
Quality Performance Assessments	✓	
Independent comments by Scottish Water's Reporter	✓	✓
<i>England and Wales</i>		
Companies' annual returns		✓
Independent comments by Reporters in England and Wales		✓
Reporting progress	↓	
	Customer service reports	

We currently use three different information submissions to monitor the service Scottish Water provides to its customers. These are the Annual Return, the Customer Service Performance Return and Quality Performance Assessments.

The Annual Return includes:

- information on the customer base;
- a description of the service delivered to customers (for example: water pressure and sewer flooding events);
- compliance with customer care indicators; and
- compliance with quality and environmental requirements.

This information allows us to assess the level of service to customers and compliance with environmental and drinking water standards. It also allows us to calculate the OPA score.

The Customer Service Performance Return is submitted quarterly and includes:

- the number and nature of complaints, and the speed of response;
- the number of planned and unplanned interruptions to supply;
- the number of sewer flooding incidents; and
- the number of Guaranteed Minimum Payments made.

The Customer Service Performance Return supports the information that is submitted in the Annual Return, and allows us to examine trends and any seasonal variations.

The Quality Performance Assessments are regular audits of the way in which Scottish Water handled complaints. We identify how the complaint was handled using a set of standard criteria including:

- Did the right person at Scottish Water deal with the complaint?
- Did the response address the substance of the complaint?
- Was the response written in plain English?
- Did the handling of the complaint comply with Scottish Water's Guaranteed Minimum Standards?

We score each complaint in the audit sample based on these criteria in order to make a balanced assessment of Scottish Water's complaints handling procedure.

We propose to continue to use these tools to monitor Scottish Water's levels of service to its customers during 2006-10.

16.5 Conclusion

We believe that our framework for monitoring Scottish Water's performance is robust. The introduction of regulatory accounts in 2005 will further strengthen this framework.

We will continue to publish reports on progress made by Scottish Water, in order to inform stakeholders and encourage discussion and debate. These reports will pay particular attention to changes in the level of service provided to customers and will check whether such changes are consistent with any new operating costs claimed by Scottish Water.

16.6 Question for consultation

1. What are respondents' views on our proposed approach to monitoring Scottish Water's performance?

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Our work in regulating the Scottish water industry:
The scope for capital investment efficiency

volume **5**

**WATER INDUSTRY
COMMISSIONER
FOR SCOTLAND**

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Foreword

Unfortunately, it has been necessary for me to delay until now the publication of this volume of my proposed methodology for the *Strategic Review of Charges 2006-10*. This was because no baseline had been defined for the capital programme that was funded in the last Strategic Review.

I now have such a defined programme. There are still some important issues outstanding; these relate to the extent of this programme that will remain undelivered at the start of the next regulatory control period. However, I am hopeful that these issues can be resolved in the next few weeks.

In this volume I explain in detail my proposed approach to assessing the scope for capital expenditure efficiency. I propose to draw largely on the approach used by Ofwat. Importantly, I have provided Scottish Water with detailed guidance for its second draft business plan on the information that I will require on the proposed capital programme. I plan to publish this capital programme so that customers and other stakeholders can understand the investment that is planned for their area. This is in line with our commitment to the Better Regulation Task Force principles of transparency, accountability, consistency, proportionality and targeting.

I have now had the opportunity to consider Scottish Water's first draft business plan in some detail. This plan suggests that a price increase of 5% in excess of inflation over the four-year regulatory control period is required. The plan also forecasts a total capital programme of over £2.4 billion. My review of the plan suggests that prices do not need to increase in real terms in the foreseeable future. There are two principal reasons why I believe that price increases can be held below the rate of inflation. The first is that Scottish Water's first draft business plan understates the scope for improvement in efficiency.

The second is the level of proposed capital expenditure. I have analysed the capital programmes of the companies south of the border and it is clear that the current *Quality and Standards II* investment programme is very large (larger indeed than that delivered by any similar sized company south of the border). Although Scottish Water has taken important steps to improve its understanding of its assets, such a significant increase in the capital programme for the next regulatory control period is likely to represent a major challenge.

Paradoxically, increasing the size of the capital programme may actually result in fewer outputs being delivered. This would not benefit customers, the environment or public health. My analysis shows that the companies south of the border have improved their efficiency considerably at a time when they have been required to deliver slightly smaller capital programmes.

I expect to receive Guidance from the Scottish Ministers in January 2005. This Guidance will outline their investment priorities after considering the response to the *Quality and Standards III* consultation. This Guidance will underpin my draft determination of the price caps that should apply to Scottish Water for the next regulatory control period.

My focus at this Strategic Review of Charges is to ensure that I establish a robust and transparent process and set prices that are no higher than necessary.

I appreciate the need to explain what my Office is doing, and that is why I am keen to facilitate debate about the challenges facing the water industry in Scotland and my proposals for the coming Review. It is important that this debate reflects the facts; it is also important for stakeholders to acknowledge that improvements can only come when we recognise the

challenges we face. I have arranged a number of stakeholder information days and would encourage all interested parties to use these opportunities to ask questions and to have their say. Their views will help to inform the *Strategic Review of Charges 2006-10* and we will take full account of representations that are made to us in setting an efficiency target for capital expenditure for Scottish Water.

A handwritten signature in black ink, appearing to read 'Alan D A Sutherland'.

Alan D A Sutherland

Water Industry Commissioner for Scotland

December 2004

Executive summary

Introduction

This volume describes how we propose to set the level of expenditure that should be allowed to Scottish Water to meet the investment priorities outlined in the Minister's Guidance at the *Strategic Review of Charges 2006-10*.

Unfortunately we have had to delay publication of this volume from September 2004 until now. We considered that it was not in customers' interests to publish our approach to assessing capital efficiency for the next regulatory control period until outstanding issues relating to the capital expenditure programme from the current regulatory control period had been resolved.

We welcome responses from stakeholders to the specific consultation questions that are set out at the end of each chapter, as well as any other comments they might wish to make. Responses should be sent to:

Katherine Russell
Water Industry Commissioner for Scotland
Ochil House
Springkerse Business Park
Stirling FK7 7XE

or by email to :
SRCmethodology@watercommissioner.co.uk

Responses should arrive by 17 January 2005. We recognise that the period for consultation is short. This is, however, a direct result of the difficulty that we have had, and continue to have, in defining the baseline investment programme for the current regulatory control period. We apologise for any inconvenience which the shorter consultation period may cause.

Capital expenditure in the Scottish water and wastewater industry

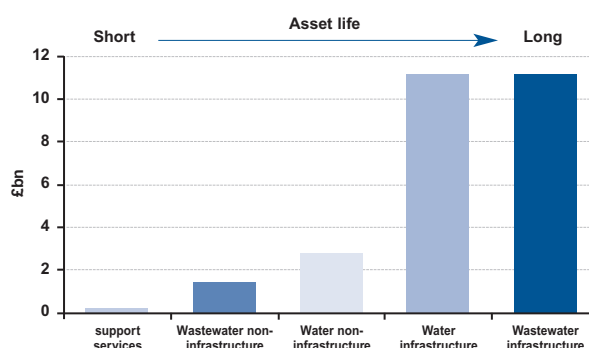
The assets required to deliver a water and wastewater service can be divided into five broad types:

- water infrastructure;
- water non-infrastructure;

- wastewater infrastructure;
- wastewater non-infrastructure; and
- support services.

Figure 1 illustrates the replacement cost and expected life of Scottish Water's assets.

Figure 1: Replacement cost and asset life by type of asset



Scottish Water is responsible for a larger geographic area than any of the water and wastewater companies in England and Wales. However, the asset bases either side of the border appear to have many similarities. This is illustrated in Table 1. The high proportion of the Scottish population that lives in the Central Belt and coastal communities may explain the possibly unexpected result.

Table 1: Comparison of the asset base

	Scottish Water	Ranking	Water and wastewater companies in England and Wales		
			Smallest	Mean	Largest
Length of water mains (km)	46,508	1st	11,226	27,706	45,674
Length of main per property (m)	18.74	5th	9.07	15.94	21.10
Length of sewers (km)	44,854	3rd	8,820	30,573	67,151
Length of sewer per property (m)*	13.34	7th	11.93	13.68	14.85
Number of water treatment works	371	1st	33	102	154
Number of wastewater treatment works**	616	4th	349	630	1,071

* Excludes lateral sewers as they are not part of the sewer network in England and Wales.

**Excludes 1,220 very small public septic tanks installations, which are uncommon in England and Wales.

Historic investment in Scotland

Investment in the water industry in Scotland began to increase significantly after the three former water authorities were established in 1996. This was delivered both by conventional procurement and by PFI.

The level of investment in England and Wales increased significantly after privatisation in 1989. By 1996-97, the privatised companies were investing some £3.5 billion per year.

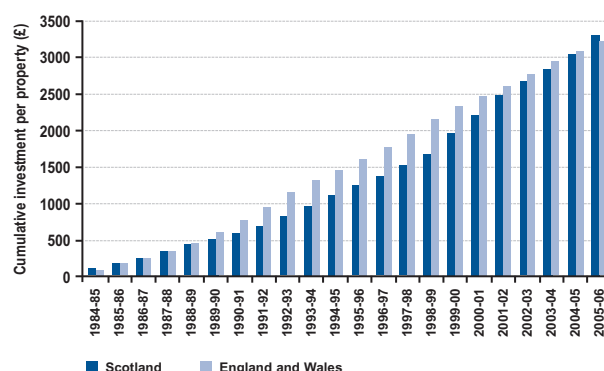
Investment in England and Wales has recently stabilised at around £3 billion a year. The *Strategic Review of Charges 2002-06* foresaw investment in Scotland stabilising at an average level of around £450 million each year.

We can compare the level of investment in Scotland with that in England and Wales using the measure of investment per property. Information about investment in Scotland is available for the years before 1996 from the capital account of local authority returns. This may actually understate the level of investment in Scotland as it will exclude any spending on assets from the revenue account.

Our analysis shows that investment per connected property in Scotland will have matched that in England and Wales over the period 1985-2006. Although investment in England and Wales was higher immediately after privatisation, the situation has reversed in recent years.

By the end of *Quality and Standards II*, the Scottish water industry is set to have invested more in cash terms for each connected property than was invested in England and Wales over a 10-year and a 20-year period.

Figure 2: Cumulative investment per property in Scotland and in England and Wales 1984 -2006¹



The conclusion from this analysis, therefore, is that if there is a significant backlog of investment in Scotland relative to that in England and Wales, it can only be a result of historical inefficiency, not a lack of investment funds. Customers in Scotland have paid for, and so deserve, an equivalent standard of service to that which customers in England and Wales receive.

Potential overhang from Quality and Standards II

It appears increasingly likely that the *Quality and Standards II* investment programme will not have been delivered in full by April 2006. The post-efficiency value of the programme is £1,808 million. Capital investment inflation is likely to increase the efficient cost of delivering this investment programme to approximately £1,930 million. Scottish Water has also been tasked with delivering a further £110 million of new outputs. This brings the total efficient cost of the investment programme for the current regulatory control period to around £2,040 million.

We have reviewed the quarterly Capital Investment Return that covers the period up to 30 September 2004. This review identified that a proportion of investment spending did not appear to relate to projects from the WIC18² baseline. To the end of September, Scottish Water had invested £961 million, of which £693 million related to projects identified as *Quality and Standards II*. There was no identified expenditure relating to the agreed new outputs.

¹ Adjusted for inflation and for the effect of PFI investment. Efficiency adjustment is not included. The forecast expenditure in Scotland for 2004-05 and 2005-06 is based on figures supplied by Scottish Water.

² WIC18 is a regulatory letter that was sent to the three authorities in May 2001. It asked for a detailed baseline for the *Quality and Standards II* investment programme of each authority.

In our agreement with Scottish Water, which determined how much spend-to-save should be included in the original investment programme, we agreed that £47 million of *Quality and Standards I* overhang inherited by Scottish Water could be included. This increased the identifiable baseline investment spending to £740 million.

The current regulatory control period ends in March 2006. This leaves 18 months before *Quality and Standards III* is due to start. If Scottish Water were able efficiently to spend £344 million in the remainder of the current financial year and £590 million in 2005-06, this would imply a total *Quality and Standards II* investment spending of £1,674 million.

We have analysed the small proportion of the programme that has been completed to beneficial use³ to date, and concluded that Scottish Water has delivered this element of the investment programme inefficiently. This inefficiency amounts to £10 million.

Our analysis suggests that a total of £1,664 million of *Quality and Standards II* outputs will have been delivered by the end of March 2006. This compares with a revised total investment programme of £2,040 million. Table 2 summarises the analysis.

Table 2: Analysis of likely *Quality and Standards II* overhang

Item	Quarterly Capital Investment Return analysis (£m)
<i>Quality and Standards II</i> spent to date (30/09/04)	693
Non-Quality and Standards II spent to date (30/09/04)	268
Total spending on investment	961
Check of Non-Quality and Standards II:	
Notified new outputs agreed (30/09/04)	0
Agreed <i>Quality and Standards I</i> carry-over into <i>Quality and Standards II</i> period (post-efficiency)	47
Total	47
Revised <i>Quality and Standards II</i> investment spending	740
Revised Non-Quality and Standards II	221
Total spending	961
Estimated maximum efficient investment spending for remainder of 2004-05	344
First half of 2004-05 investment spending	216
Total maximum estimated investment spending	560
Estimated maximum 2005-06 investment spending	590
Total expected <i>Quality and Standards II</i> investment spending (including new outputs)	1,674
Estimated inefficiency on completed projects	(10)
TOTAL EXPECTED QUALITY AND STANDARDS II OUTPUTS DELIVERED (INCLUDING NEW OUTPUTS) (a)	1,664
Baseline <i>Quality and Standards II</i> investment programme	1,810
Notified new outputs (WIC47)	110
Capital inflation above assumptions at Strategic Review of Charges	120
TOTAL REQUIRED INVESTMENT TO DELIVER OUTPUTS (b)	2,040
UNDELIVERED PORTION (b)-(a)	376

We outlined this analysis in our WIC51 letter to Scottish Water. Scottish Water has since substantially revised its regulatory return. Our review of the new information has not materially changed our view on the likely overhang. The revised information would imply that more of the money has been spent on *Quality and Standards II* projects. However, it appears likely that inefficiency or overhang from *Quality and Standards I* will have more than compensated for the extra money invested on *Quality and Standards II* projects.

We will continue to work with Scottish Water to understand the overhang from *Quality and Standards II* that will impact on the next regulatory control period. The output from this work will be a defined list of projects and status codes for the remainder of *Quality and Standards II*. This will need to be reconciled with the quarterly investment return for the period up to September 2004.

³ Beneficial use is the final stage of investment when outputs begin to be delivered.

If we are unable to agree the overhang with Scottish Water, we will use the information available from regulatory returns to set a baseline for the remainder of the current regulatory control period. We will only recognise spending as efficient if it appears on our baseline of projects.

The Minister's Guidance for the next regulatory control period is due at the end of January 2005. We will need to establish our baseline of the remaining *Quality and Standards II* projects if we have not been able to reach agreement with Scottish Water by 28 January 2005.

Investment programme deliverability

Our analysis suggests that there is a limit to the size of a capital programme that can be delivered efficiently. We have examined the capital programmes delivered south of the border and the improvement in capital efficiency that has been achieved in the past few years. We believe that there is a risk that having a capital programme that is too large could adversely impact on efficiency.

The *Quality and Standards II* investment programme was approximately £1.9⁴ billion over four years. This total investment is equivalent to £833 per household in Scotland.

Five water and sewerage companies in England and Wales are either broadly the same size as Scottish Water or larger. Thames Water, Severn Trent Water and United Utilities are larger; Anglian Water and Yorkshire Water are similar in size to Scottish Water.

The following table compares the size of programmes delivered or defined by the companies with the *Quality and Standards II* programme.

Table 3: Summary of relative size of Quality and Standards II

	Largest four-year programme	Median four-year programme	Largest four-year programme per connected property
Thames	£2,200m	£1,992m	£540
Severn Trent	£2,773m	£2,078m	£782
United Utilities	£2,509m	£2,174m	£849
Anglian	£1,856m	£1,315m	£841
Yorkshire	£1,727m	£1,236m	£838
<i>Quality and Standards II</i>	£1,930m ⁵		£833

This shows that *Quality and Standards II* was a very large investment programme. It was larger than the largest programme ever delivered by Anglian Water and Yorkshire Water (the two companies of similar size to Scottish Water). It is also very large in terms of investment per connected property.

In its first draft business plan, Scottish Water proposed that it should deliver a *Quality and Standards III* investment programme of approximately £2.2 billion during the next regulatory control period. This was in addition to approximately £260 million of *Quality and Standards II* that would not have been spent. This would equate to a total investment programme of some £615 million per year, or £2.46 billion over the four-year regulatory control period. This is equivalent to more than £1,000 per connected property.

The extent of the challenge that Scottish Water sets itself in its first draft business plan is demonstrated in Table 4. This shows the frequency with which the five largest companies south of the border have delivered four-year investment programmes of more than £1.6 billion.

⁴ The original £1.81 billion investment programme included in the *Strategic Review of Charges 2002-06* increases to £1.93 billion as a result of higher than expected capital outputs inflation.

⁵ See footnote 1.

Table 4: Delivery of programmes of more than £1.6 billion

Size of four-year investment programme	Size of programme per year	Number of occasions	Cumulative %
Over £2.6 billion	£650m	2	2.4
Over £2.5 billion	£625m	4	4.7
Over £2.4 billion	£600m	6	7.1
Over £2.3 billion	£575m	11	12.9
Over £2.2 billion	£550m	15	17.6
Over £2.1 billion	£525m	23	27.1
Over £2.0 billion	£500m	29	34.1
Over £1.9 billion	£475m	41	48.2
Over £1.8 billion	£450m	44	51.8
Over £1.7 billion	£425m	48	56.5
Over £1.6 billion	£400m	54	63.5
Under £1.6 billion	£400m	31	100.0

This reveals that Scottish Water's proposed investment programme is almost without precedent in the recent history of the water and sewerage industry in the UK. The privatised companies have delivered programmes of more than £2.4 billion on only six occasions, or 7.1% of all of the possible four-year periods. None of these larger investment programmes has been delivered recently, nor was it as large as the proposed programme of Scottish Water on a per connected property basis.

How Ofwat assesses capital expenditure efficiency

The methods that Ofwat uses to assess capital expenditure efficiency for the companies south of the border have been developed over a number of years. Ofwat uses these methods as part of its price setting process. We have used Ofwat's methods to monitor Scottish Water's progress towards achieving the efficiency targets set in the *Strategic Review of Charges 2002-06*.

Capital maintenance econometrics

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

The cost drivers that are included within the econometric models are known as 'explanatory factors'. There are nine models and they take different forms. These are summarised in Table 5.

Table 5: Summary of econometric models and explanatory factors

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

We will use these models to assess the predicted level of capital maintenance for Scottish Water. This is an important benchmark and will ensure that customers receive value for money both in the short and in the longer term.

Capital works unit costs

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

The cost base is a database of costs, termed 'standard costs', for a wide range of standardised projects, or units of work. We can compare the standard costs submitted by Scottish Water and the companies south of the border to assess relative procurement efficiency.

The cost base approach to assessing relative efficiency has been subject to detailed scrutiny by the Monopolies and Mergers Commission and by the Competition Commission. Both found the approach to be fit for purpose.

Ofwat reviews the submissions received from the companies in order to:

- ensure that the standard costs which are submitted comply with the specifications and guidance;
- ensure that the engineering judgement grades (EJG)⁶ have been correctly applied and interpreted;
- confirm that companies have derived their standard cost estimates independently;
- subject all submissions to an independent audit; and
- ensure comparability between companies.

In its 2004 price determination, Ofwat allowed only one company-specific factor – an adjustment for regional variations in construction, labour and tender costs. Ofwat has based its assessment of these adjustments on a study of the building and construction cost indices that was published by the Building Cost Information Service and the Department of Trade and Industry.

Ofwat uses the lowest reported cost as the benchmark standard cost, provided it complies with the following criteria:

- the standard cost used to derive the benchmark closely complied with the standard cost specification;
- at least 3% of the industry (measured in terms of turnover) reported unit costs at or below the benchmark standard cost;
- the standard cost was sufficiently robust to warrant an EJG of B3 or better;
- single company standard costs were generally used to derive the benchmark for items commonly procured from a single source over a range of sizes;
- the relevant benchmark is independently endorsed by consultants to Ofwat, Babbie Group.

Adjusting the Ofwat approach for Scotland

There may be factors that influence investment costs which are not adequately reflected in the analysis techniques that we have described above. Our assessment needs to take account of any relevant factors that are beyond management control but influence costs. We therefore ask Scottish Water, as part of its business plan submissions, to draw to our attention all factors that influence cost. This should include factors that both increase or decrease cost.

We want to ensure that our efficiency targets neither unduly penalise nor reward Scottish Water. Some commentators have argued that it is unfair to draw comparisons between Scottish Water's performance and that of the privatised water and sewerage companies in England and Wales. They cite the following factors:

- Scotland's geography (size, remote islands, long coastline, topography.)
- Its population settlement patterns (remote communities and concentrated, dense urban areas);
- The extent of the assets required to serve customers in Scotland (long mains, small isolated treatment works);
- The quality of the assets inherited by Scottish Water (condition and performance of the mains, sewers, treatment works, pumps etc);
- The nature of the customer base.;
- The fact that Scottish Water is in public ownership (political interest, Scottish Water's duty to Scotland, remit and freedom of management); and
- The short time that Scottish Water has had to mature and improve.

We propose to assess special factors for capital expenditure in the same way as we assess special

⁶ Engineering Judgement Grades - these are 'confidence' scores that are assigned to the information contained in the submission.

factors for operating expenditure. We will consider these and other factors carefully before determining the scope for capital efficiency.

In summary, Scottish Water has to provide evidence in the following areas to justify an adjustment to a special factor:

- What is the justification for the special factor? Scottish Water will need to set out whether the factors are the result of special obligations, the character of all or part of its customer base, or the result of historical development of the water and wastewater systems in its area of supply.
- How do the special factors impact on Scottish Water's costs?
- How has Scottish Water sought to manage the additional costs arising from the special factors and limit their impact?
- Are there other special factors that reduce costs? If so, have these been quantified and offset against the upward cost pressures?

The Scottish Executive's consultation: 'Investing in water services 2006-14'

Scottish Ministers will define the investment priorities for the water industry in Scotland. The Quality and Standards process identifies the priorities of customers, the quality regulators⁷ and other stakeholders. Ministers sought views on these issues in its consultation, 'Investing in water services 2006-14'.

Quality and Standards III will determine the investment priorities for the period 2006 to 2014. Our *Strategic Review of Charges 2006-10* will only cover the first half of this period.

Total investment is limited by the following factors:

- **Customers' bills:** customers ultimately pay for investment and higher investment will result in higher bills.

- **Ability to deliver the programme efficiently:**

Scottish Water has a very large number of assets and individual investment projects tend to be relatively small. There is a limit to the size of investment programme that can be managed effectively by Scottish Water.

- **Capacity of the civil engineering market:** The civil engineering market in Scotland was recently estimated at £1.4 billion per year, with Scottish Water currently accounting for around one-third of this total.

It is important to be able to prioritise competing demands for investment. There will be demands to improve the levels of service to customers, to improve compliance with public health and environmental standards and to connect more properties to the water and sewerage network.

'Investing in water services 2006-14' sets out the Scottish Executive's views on the likely costs [based on Scottish Water's costing of the required investment] of different levels and types of investment. The consultation sought views on investment priorities and on whether or not bills should rise to pay for each type of investment.

The consultation proposed the following principles:

- cost-effectiveness;
- affordability;
- deliverability; and
- sustainability;

Capital maintenance

Capital maintenance is important to the on-going effective management of the assets. Replacing assets in a timely way is essential to maximising the cost effectiveness of the network's performance and maintaining the level of service to customers.

⁷ The Scottish Environment Protection Agency (SEPA) and the Drinking Water Quality Regulator (DWQR).

The 'Investing in water services' consultation outlined a number of different approaches to assessing the appropriate level of investment in capital maintenance and suggested that a 'serviceability' approach should be used. This involves identifying levels of service to customers then costing how much it would cost to maintain this level of service over the period.

Scottish Water estimated that maintaining current levels of service would cost around £275 million a year. Improving serviceability would cost around £340 million a year.

Growth investment

The consultation also sought views on investment in new development and first-time connections.

Estimates for business and housing developments vary. For example, it is estimated that between 120,000 and 230,000 houses will be built in the period 2006 to 2014. Scottish Water has estimated that the cost of connecting 230,000 houses to the public water and sewerage network is around £1 billion over the eight-year period. This cost will to some extent be met by a new charging regime for connections to the network⁸.

Improving the environment and public health

In recent years we have begun to invest significantly in improving the water environment. The consultation identifies that much remains to be done. There are more than 30 separate legal drivers for investment. Many of these drivers relate to European Union Directives.

Scottish Water has estimated that it will cost around £2.5 billion to meet mandatory standards. A further £500 million would be required to demonstrate progress towards the guideline standards.

It was also identified that significant investment was required to remove harmful substances, such as trihalomethanes and lead, from the water supply. Scottish Water has estimated that it needs to invest around £1.65 billion to reach the regulatory minimum position by 2010.

Improving customer service

The consultation identified three high priority customer issues. These are:

- odour from wastewater treatment works;
- water pressure; and
- sewer flooding.

No estimates of the cost of dealing with odour are included in the consultation. Scottish Water estimated that it could substantially reduce the number of properties at risk of low pressure with an investment of £40 million. Scottish Water also suggested investment in reducing sewer flooding of £240 million.

The investments identified in the 'Investing in water services' consultation are summarised in Table 6.

Table 6: Summary of costs in 'Investing in water services' consultation

Description	Cost (£ million)
Maintenance	
Water	925
Waste water	1,300
'Higher standards'	500
Extending public networks	
Deep connections in new developments	500
First time water	200
First time waste water	600
Environmental improvements	
Legal minimum	2,500
Progress towards guideline	500
Drinking water and water resources	
Regulatory minimum	1,650
'Reasonable aspirations'	1,750
Other priorities for customers	
Odour	Unknown
Pressure	40
Sewer flooding	240
Total	10,705
Amount per annum (total divided by 8)	1,338

⁸ See Volume 3 of our methodology.

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

One of the disappointments of *Quality and Standards II* has been the difficulties faced by both stakeholders and customers in monitoring Scottish Water's delivery of the investment programme. This has resulted from the lack of clearly defined projects and associated outputs that comprised the baseline programme.

Quality and Standards II defined the investment programme for the period April 2002 to March 2006. In May 2001 we wrote our WIC18 letter to the three authorities. This letter sought to establish a baseline for the investment programme of each authority.

We did not envisage that the authorities would find it difficult to provide the information we required, as they had already provided detailed costs for *Quality and Standards II*. North of Scotland Water Authority and West of Scotland Water Authority were able to provide a relatively detailed investment programme. East of Scotland Water Authority, however, failed to provide the required level of detail. When Scottish Water was created in April 2002, this problem had still not been properly addressed.

A number of workshops were held in March 2003 where the key stakeholders examined the WIC18 programme lists, line by line, and allocated projects into two distinct categories. The 'red' category meant that the project was no longer required and was hence a candidate for replacement with an alternative project; while the 'green' category was for WIC18 projects that were still required.

The WIC18 experience has taught us that a fully defined capital investment programme must be in place at the outset of the next regulatory control period. Our discussions with the Scottish Environment Protection Agency (SEPA) and the Drinking Water Quality Regulator (DWQR) also lead us to conclude that the outputs to be delivered by each project must be clearly defined and quantified at the same time.

We propose that the baseline investment programme for *Quality and Standards III* should be published in full. This would help ensure transparency and accountability in the delivery of agreed benefits to customers and to the environment.

Defining the investment programme

Our requirement for a clear and detailed baseline for the *Quality and Standards III* investment plan is broadly consistent with those that are required by Ofwat for the companies south of the border.

The baseline is a key part of the regulatory contract between Scottish Water and its customers. The investment plan must be consistent with Ministerial Guidance⁹. This Guidance will set out the Scottish Executive's detailed investment priorities.

Scottish Water's proposed investment plan can be split into three main elements:

- capital maintenance;
- quality; and
- supply/demand.

The level of definition that is possible for each of these three elements varies. Some projects can be specified in advance, while others may be more reactive¹⁰. Capital maintenance projects tend to be more difficult to define than quality investment projects.

We will require a detailed list of all of the quality projects and supply/demand projects. The detailed list should also include all capital maintenance projects that have a value of more than £250,000.

Each investment project should have:

- a unique code;
- a unique name; and

⁹ Initial guidance was provided by the Minister for Environment and Rural Development, Ross Finnie MSP, in a letter to the Chairman of Scottish Water and the Water Industry Commissioner dated 26 May 2004. Further guidance is expected in January 2005.

¹⁰ Reactive projects are those associated with operational needs which arise at short notice; for example, replacing a piece of plant or section of pipe which has failed unexpectedly or where operational performance has declined over a short period of time.

- a geographical reference (place name and water supply zone/drainage area);
- a defined output.

All capital maintenance projects should identify clearly:

- the work proposed (its size, quantity and type);
- whether the project is planned or reactive;
- the cost; and
- an appropriate output measure.

The timetable for the delivery of projects should include:

- annual projected investment spend for each project – this should include any expenditure either before or after the regulatory control period;
- identification of key project milestones (for example when planning consent is granted); and
- the project's expected completion date.

We will require identical information for any overhang from *Quality and Standards II*.

Investment programme review

All regulators review the draft investment programmes that regulated companies provide. We propose to work closely with the Reporter, SEPA and the DWQR to review the investment programme proposed by Scottish Water. This is a first important step in ensuring that the proposed programme will meet the requirements of stakeholders and provide value for money for customers. It ensures that the scope of the proposals is appropriate to achieve the objectives set out by Ministers, and that the proposed expenditure is being effectively targeted.

It is important that we establish that the proposed programme will deliver the agreed outputs effectively. We need to be sure that our efficiency analysis is appropriate and consistent with our goal of improving value for money to customers. There is obviously no

point in delivering an ineffective investment plan efficiently.

We propose to use the following criteria in our review of the investment programme:

- Is the programme sufficiently defined to allow customers and stakeholders to monitor delivery? In particular, does it meet the level of definition set out in our guidelines?
- If delivered in full, does the proposed programme meet the objectives set out in Ministerial Guidance? If not, what are the omissions? If so, does it exceed the requirements? In particular, do the quality regulators, SEPA and DWQR, agree that the relevant quality objectives will be met by the proposed investment?
- Are there projects in the programme which do not contribute to the required objectives?
- Are there errors in the programme; for example, in the identification of projects and the associated outputs?
- Is the programme properly costed?
- Are the solutions proposed by Scottish Water appropriate?
- Do they represent best practice?
- Are the proposed solutions supported by the DWQR and SEPA?
- Have the projects in the programme been allocated measurable, defined outputs?
- Do the projects have clearly defined delivery dates?
- Are the delivery dates realistic, both in terms of individual project construction times and the overall capacity of the industry to deliver the programme efficiently?

The process of reviewing the investment programme will provide us with an indication of areas where there is

scope to reduce or increase the outputs required from Scottish Water.

The output from the review should be a properly costed, fully defined list of capital investment projects, which, if delivered in full, will meet the objectives set out by Ministers for the regulatory control period.

How we propose to handle capital maintenance investment

It can be difficult to determine the correct level of expenditure on capital maintenance. Too much investment is likely to result in assets being replaced unnecessarily, leading to higher prices and little benefit for customers. Too little investment is likely to mean a gradual decline in performance and customer service.

Approach to capital maintenance in Quality and Standards II

During the *Quality and Standards II* process, an 'asset stewardship' approach was used to define the appropriate level of capital maintenance. This approach uses three key parameters to identify the required level of capital maintenance:

- condition;
- performance; and
- age.

Although the asset stewardship approach provides a reasonably sound engineering assessment of the state of the asset base, the approach has a number of weaknesses. Most notably:

- the gradings assigned for condition and performance are subjective and the approach to grading may vary between companies;
- the information which underpins the gradings and the assessment of remaining life may be of varying age and quality;
- there is no assessment of the level of service that the asset provides to customers; and

- there is no assessment of the risks associated with failure of the asset.

In addition, the approach tends to overestimate the requirement for capital maintenance. This is because it overlooks the operator's capacity to:

- rationalise the assets (by assessing whether or not it is still required);
- adopt strategic solutions, by reorganising the network in order to reduce or remove the asset;
- use new technology; and
- implement cost-effective operational solutions to defer replacement.

At the last Strategic Review of Charges, we accepted the capital maintenance requirement identified in *Quality and Standards II* but we applied an efficiency target to reflect the scope for strategic asset management efficiency.

The serviceability approach

In its 1994 and 1999 price reviews, Ofwat used a serviceability approach when assessing whether the level of capital maintenance investment by the companies was appropriate. This involved monitoring a set of defined asset and customer service performance indicators for each company. If these indicators were broadly constant, or marginally improving, then it was assumed that the historic level of capital maintenance spend was about right. If the indicators showed a decline in performance, this indicated that the company had historically been investing too little in capital maintenance.

At the last Strategic Review of Charges we were not able to use the serviceability approach because at that time we did not have sufficiently good quality information about asset performance and customer service levels.

The companies in England and Wales felt that the serviceability approach did not take sufficient account of the risk of asset failure in the future. Ofwat proposed a

collaborative approach to addressing these concerns. The industry commissioned UK Water Industry Research (UKWIR) to devise a more strategic, 'top-down' approach to assessing capital maintenance. The result was the 'Common framework for capital maintenance planning'.

Ofwat set out a four-stage approach – consistent with the UKWIR Common Framework Approach – to assess the companies' capital maintenance requirements in the 2005-10 regulatory control period. The four stages are as follows:

Stage A Maintaining serviceability to customers to date

This involves understanding past performance, trends from the serviceability indicators, and company actions necessary to address serviceability issues. This 'backward looking' assessment is mainly informed by the serviceability indicators.

Stage B Is the future period different?

This involves understanding what would be different about the next regulatory control period that would necessitate changes in the typical levels of activity that have been sufficient in the past. This element is informed by the company's assessment of its economic level of capital maintenance. This should be based on the UKWIR approach and should be both forward-looking and risk-based.

Stage C Scope for improvements in efficiency

This involves assessing the relative efficiency of each company in terms of its approach to capital maintenance and capital works, its capital/operating expenditure balance and the potential for each company to improve its efficiency over the next price review period. This uses Ofwat's established approaches for determining relative efficiency and assessing each company's scope for further efficiency improvements.

Stage D Impact of the enhancement programmes

This requires an understanding of the implications of each company's quality investment programme on the base capital maintenance programme. This is informed by an assessment of whether the quality programme defers or removes the requirement for capital maintenance expenditure.

Our proposed approach to capital maintenance in the Strategic Review of Charges 2006-10

In assessing Scottish Water's capital maintenance requirements in the *Strategic Review of Charges 2006-10*, we will take account of:

- Ministerial Guidance on the overall objectives of the investment programme;
- the capital maintenance requirement identified in the *Quality and Standards III* process;
- the capital maintenance requirement identified in Scottish Water's first and second draft business plans; and
- the Reporter's assessment of Scottish Water's capital maintenance proposals.

We will also review Ofwat's comments on the companies' plans for capital maintenance in its final determinations¹¹.

Our approach to assessing the requirement for capital maintenance can be divided into three stages:

Stage 1 Review capital maintenance spending and the condition and performance of the asset base

We will update our analysis of the historic levels of funding for the industry in Scotland and draw comparisons with England and Wales.

¹¹ *Future water and sewerage charges 2005-10* – Final determinations – December 2004.

Stage 2 Assess Scottish Water's capital maintenance proposals contained in its first and second draft business plans

We will analyse Scottish Water's capital maintenance proposals to establish:

- whether the proposals match the Ministerial Guidance;
- whether Scottish Water has followed best practice – we will analyse whether it has adopted techniques consistent with the UKWIR common framework approach and best practice asset management;
- the validity of assumptions underpinning Scottish Water's proposals;
- the accuracy of Scottish Water's costing process; and
- the extent of overlap between the capital maintenance proposals and other elements of the investment programme.

Stage 3 The scope for efficiency in delivering the capital maintenance programme

Our proposed methodology for determining the scope for efficiency in the delivery of capital maintenance will include the following stages:

- an assessment of the level of capital maintenance expenditure required by Scottish Water, given its current asset base. This assessment will be carried out using Ofwat's capital maintenance econometric models;
- an adjustment to the required level of capital maintenance expenditure to take account of any circumstances specific to Scotland that could affect Scottish Water's costs; and
- an assessment of the scope for efficiency. We propose to use the cost base approach to determine the scope for efficiency and draw on the evidence gathered by Ofwat on the scope for continuing improvement. We propose to use the scope for

efficiency either to adjust upwards the results of the econometric models or to reduce the cost of the capital maintenance programme proposed by Scottish Water in its second draft business plan.

How we propose to handle investment in improving the level of service

Investment in improving the water quality and environment has, in recent years, been the largest driver of capital investment in the water industry in Britain. This is likely to continue for the foreseeable future. Quality investment is usually targeted at one or more of the following:

- environmental improvements, such as additional treatment of wastewater;
- improved drinking water quality, such as a reduction in the number of samples contains harmful bacteria; and
- increased levels of service for customers, such as reduced levels of sewer flooding.

If customers are to receive value for money it is vital that this large quality investment programme is:

- properly defined;
- accurately costed; and
- effectively and efficiently delivered.

Our approach to Scottish Water's quality investment programme

In assessing Scottish Water's quality investment proposals in the *Strategic Review of Charges 2006-10* we will take account of:

- Ministerial Guidance on the overall objectives of the investment programme, with particular reference to quality objectives;
- the quality investment requirements identified in the *Quality and Standards III* process;

- the quality investment requirements identified in Scottish Water's initial and final business plan submissions; and
- the Reporter's assessment of Scottish Water's quality investment programme.
- whether the additional operating costs identified from the quality programme are additional, reasonable and have been applied consistently; and
- whether Scottish Water has costed the quality programme in an incremental way, taking full account of any optimisation and synergy benefits;

We will require a detailed investment plan which defines:

- the projects that comprise the programme, by asset;
- the outputs that each project will deliver;
- the expected costs for each project; and
- expected delivery dates.

Our business plan guidance specifies the format of this investment plan.

The Reporter's assessment of Scottish Water's quality investment proposals will form a key part of our analysis. We have provided detailed guidance to the Reporter on the particular areas we wish his audit of the quality programme to address. These include an assessment of:

- whether Scottish Water has provided a consistent interpretation of legal obligations and the Ministerial Guidance;
- whether Scottish Water has included all of the agreed requirements of the quality regulators – we have also asked the Reporter to comment on Scottish Water's challenge of quality obligations placed on it by the quality regulators as part of *Quality and Standards III*;
- how Scottish Water has interpreted the Water Framework Directive and other key legislation which impact significantly on costs;
- the design criteria used by Scottish Water and whether these are consistent with the criteria used to develop the standards;
- Scottish Water's costing process;

- cost estimates for defined projects.

We will also assess the scope for efficiency in delivering the quality programme. This assessment of the scope for efficiency will take place in two parts:

- an assessment of the current capital expenditure efficiency gap; and
- an assessment of the on-going scope for improvement in capital expenditure efficiency.

We will use the Ofwat cost base approach to determine the current gap in efficiency and will draw on the work undertaken by Ofwat to assess the scope for on-going improvement.

An overview of how we propose to set the appropriate level of capital expenditure to deliver the priorities outlined in the Minister's Guidance

We need to take account of a range of issues that will affect Scottish Water's ability to deliver its capital investment programme efficiently. These 'critical factors' are:

- the proportion of *Quality and Standards II* that will not have been delivered by March 2006;
- historical evidence on the size of investment programmes that are deliverable; and
- the incentive for Scottish Water to improve its performance.

Our overall approach is set out in Figure 3. This figure also highlights the appropriate chapter references in this volume.

Figure 3: Framework for capital investment targets

Establish investment programme	Chapters 1 to 8	Ministerial Guidance on the size of the overall investment programme and the outputs required to be delivered	
		Scottish Water Investment Plan submission with initial costs, project by project, and detailed information on outputs	
		Establish impact of <i>Quality and Standards II</i> overhang and build into baseline investment	
Review programme and establish a baseline	Chapters 9 and 10	Reporter & Regulator challenge: audit of scope of project solutions and costs	
		SEPA and DWQR scrutiny: ensure that required outputs are in the investment baseline	
		Capital maintenance baseline investment programme	Capital enhancement baseline investment programme
Assess relative efficiency	Chapters 11 to 13	Ofwat capital maintenance econometrics and cost base	Ofwat cost base
Assess scope to improve	Chapter 14	Ofwat targets for capital maintenance and scope for outperformance by companies	Ofwat targets for capital enhancement and scope for outperformance by companies
	Chapter 8	Assess degree to which scope for improvement is limited by size of investment programme	Assess degree to which scope for improvement is limited by size of investment programme
Target expenditure and outputs	Chapter 15	Determine the required level of capital expenditure and the maximum outputs that can be delivered in accordance with Ministerial Guidance and within an overall level of investment spend that is consistent with efficient delivery	
Monitor progress	Chapter 16	Monitor the defined Project list: a baseline investment programme for 2006-07 to 2009-10, for capital maintenance and enhancements, including costs and outputs	
		Delivery monitored by stakeholders	

We propose to adopt a different approach to setting targets for capital efficiency in capital maintenance and in quality enhancement expenditure. However, in both cases, outperformance of targets will increase the resources that are available to add outputs to the baseline investment programme for the regulatory control period.

We set out our step-by-step process for each investment category below:

For both capital maintenance and capital enhancement

1. Establish a fully defined investment programme

Following Ministerial Guidance, Scottish Water will submit its investment plan in the agreed format for the second draft business plan. This format provides for a detailed list of projects and their associated outputs. It will also include a separate list that outlines in similar detail the proportion associated with *Quality and Standards II* projects that will not have been delivered by the end of March 2006. If we have been unable to reach agreement on the potential overhang by 28 January 2005 we will set an appropriate baseline.

2. Review the programme and establish a baseline

Scottish Water's investment plan will be scrutinised in detail by the Reporter, the quality regulators¹² and this office. We will determine whether the programme meets the objectives set out by Ministers. The output from this process will be a detailed baseline programme, which will list the projects required to deliver the investment requirements for capital maintenance and quality enhancement priorities.

For capital enhancement

3. Assess current efficiency gap

We will use Ofwat's cost base approach to determine the size of the procurement efficiency gap between Scottish Water and the companies in England and Wales.

4. Assess scope for further improvement

We will consider the scope for further improvement based on the targets set by Ofwat.

5. Establish the total allowable expenditure for capital enhancement

We will use the results of Steps 4 and 5 to establish the total allowable expenditure for quality

¹² SEPA and DWQR.

enhancement for each year of the next regulatory period.

For capital maintenance

3. Estimate the annual efficient level of expenditure for Scottish Water, consistent with the companies' recent performance

We will use the capital maintenance econometric models developed by Ofwat to estimate the cost of maintaining serviceability of the current asset base at average levels of efficiency.

4. Adjust the results to take account of special factors

We will consider any representations from Scottish Water that would justify additional funding for specific capital maintenance objectives.

5. Check the adjusted results of the econometric models

We will carry out a series of high-level comparisons to check that the adjusted results of the models do not underestimate Scottish Water's capital maintenance requirements.

6. Use the cost base approach to assess the current gap in capital expenditure efficiency

We will use the cost base approach described in Chapter 11 to determine Scottish Water's current capital efficiency position.

7. Assess the scope for further improvement

We propose to take account of Ofwat's expectations for improvement in capital efficiency when we set targets. Ofwat's has recently published its final determinations¹³ and we will draw on the evidence accepted by Ofwat to inform our analysis of the further scope for improvement. This will inform the targets that we set for each year.

8. Use the cost base results to set an appropriate level of capital maintenance spending

There are two ways in which we can use the results of the cost base analysis. Our approach will depend on the level of detail that Scottish Water is able to provide on its proposed capital maintenance investment programme.

If we consider that the programme is sufficiently detailed, we would propose to apply an efficiency target (calculated by analysis of the cost base) to the capital maintenance programme planned by Scottish Water.

If we conclude that the programme is insufficiently detailed, we would use the results of the cost base to increase the adjusted allowance for capital maintenance that is suggested by Ofwat's econometric models.

9. Set total level of capital expenditure and final baseline of projects with associated outputs

We will set a total allowance for capital expenditure and a detailed list of projects with associated outputs. This will be the baseline against which we would expect stakeholders and customers to monitor and judge Scottish Water's performance.

Questions for consultation

Chapter 2: The Scottish Executive's consultation: Investing in water services 2006-14

1. Do respondents agree that the final investment programme should be defined in detail at an asset level?
2. Do respondents agree that this investment programme should be placed in the public domain?

Chapter 3: Capital maintenance

3. Do respondents agree that the UKWIR common

¹³ *Future water and sewerage charges 2005-10* – Final determinations.

framework approach for capital maintenance provides a suitable mechanism for establishing Scottish Water's capital maintenance requirements.

4. Do respondents agree that our three-stage approach will allow us to establish whether Scottish Water's capital maintenance proposals are justified, well costed and meet best practice.

Chapter 4: Implications of the quality programme

5. Do respondents agree with our proposed approach to assessing Scottish Water's quality investment proposals?
6. Are there other factors that we should take into account to ensure customers receive value for money?

Chapter 5: Investment to balance supply/demand

7. Do respondents agree with our proposed framework for assessing Scottish Water's water resource and sewerage and sewage treatment planning?
8. Are there other factors that we should take into account to ensure customers receive value for money?

Chapter 6: Capital expenditure in the Scottish water and wastewater industry

9. Do respondents think that the scope for improvement is different between capital maintenance and capital enhancement and between water and sewerage?

Chapter 7: Lessons learned from establishing the baseline investment programme for Quality and Standards II

10. Do respondents agree that, based on experience from *Quality and Standards II*, a baseline investment programme detailing, at a project level, the deliverables from Scottish Water's capital expenditure is an essential pre-requisite for the *Strategic Review of Charges 2006-10*?

11. Do respondents think the investment programme should be published? If so, should it be published in full or should regional lists be provided?

12. Do respondents agree that an 'early start' programme for *Quality and Standards III* is not appropriate unless appropriate definition of the *Quality and Standards II* and *III* programmes is available?

Chapter 8: Investment programme deliverability

13. How do respondents believe we should treat the potential overhang from *Quality and Standards II*?
14. Should we learn from this experience in setting the investment programme for the next regulatory control period?
15. What factors should we take into account in establishing the deliverability of the investment programme?
16. Should we adjust the efficiency target if the proposed investment programme is very large?

Chapter 9: Defining the investment programme

17. Is the proposed degree of definition for the baseline investment programme sufficient?
18. If not, what other information should be captured, and why?
19. Would respondents agree with the rationale given in this chapter for the extent of definition of the baseline investment programme? In particular, is the reporting burden on Scottish Water appropriate?

Chapter 10: Investment programme review

20. Do respondents agree with our proposed use of the Reporter to carry out the process of verifying Scottish Water's capital investment proposals? If not, which other party do you think should be used for this exercise and why?

21. Do respondents have comments on our proposed verification process?
22. Does it meet the needs of customers and stakeholders?
23. Are the proposed areas of assessment sufficient to ensure that the programme is deliverable, takes full account of potential synergies and will meet the objectives set out by Ministers?

Chapter 11: How Ofwat assesses capital expenditure efficiency

24. What are respondents' views on Ofwat's methods for assessing capital expenditure efficiency?
25. What other approaches to the assessment of the scope for capital efficiency would respondents suggest? How would these work?

Chapter 12: Other ways to assess capital expenditure efficiency

26. Are there any lessons that we should learn from the experience of other regulators?

Chapter 13: Our proposed approach to assessing capital investment efficiency

27. Do respondents agree that there are benefits in using Ofwat's benchmarking techniques to assess the scope for Scottish Water to improve its capital efficiency?
28. What are respondents views on our proposed use of Ofwat's econometric models and cost base technique as the basis for establishing an efficient level of capital maintenance spend for Scottish Water? In particular, do our proposed adjustments to the econometric models appear appropriate? Are there other factors we should take into account?
29. What are respondents views on our proposed of Cost Base as the basis for establishing an efficient level of capital enhancement spend?

30. Are our proposed mechanisms for taking account of 'special factors' appropriate?

Chapter 14: Scope for and pace for improvement

31. Do respondents agree with our proposed approach to establishing the scope for improvement in capital efficiency?
32. Do respondents consider that we should treat capital maintenance and capital enhancement expenditure separately?
33. Do respondents agree that our proposals for introducing an incentive mechanism for outperformance will be in the interests of customers and stakeholders? Does the proposed mechanism provide appropriate incentives for outperformance, and does it share the benefits fairly between Scottish Water and customers? If not, which other mechanism would be preferable?
34. Do respondents agree that any future failure to meet efficiency targets should be funded by grant-in-aid from the Scottish Executive?

Chapter 15: Setting targets for efficiency in capital expenditure

35. Do respondents think that our proposed methodology for setting targets is robust?
36. Do respondents agree that we should take account of the 'critical factors' we have listed (*Quality and Standards II* overhang, limitations on the size of the programme and incentives to outperform) in setting investment targets for Scottish Water? Are there are other factors that we should take into account?

Chapter 16: Monitoring capital delivery

37. Do respondents think that the scope for improvement is different between capital maintenance and capital enhancement and between water and sewerage?

Section 1: Chapter 1

Introduction

We are committed to the principles of the Better Regulation Task Force: transparency, accountability, proportionality, consistency and targeting. Our approach to the second full *Strategic Review of Charges*, which covers the period 2006-10, takes full account of these principles. It also responds to some of the concerns raised by stakeholders in the past four years.

Our programme of work was described in, *Our work in regulating the Scottish water industry: Setting out a clear framework for the Strategic Review of Charges* which was published in July. In that document we explained that we intended to publish a detailed description of our approach to the next *Strategic Review of Charges* in a number of volumes:

- Volume 1 (published on 21 July 2004) outlined our detailed workplan;
- Volume 2 (published on 16 August 2004) described the background and outlined some of the changes in the institutional framework that will impact on the next Review;
- Volume 3 (published on 22 September 2004) explained how we propose to calculate the prices that customers will pay during the next regulatory control period. In particular, it explained our proposal to switch to the regulatory capital value (RCV) method of price setting; and
- Volume 4 (published on 7 October 2004) explained our proposals for assessing the scope for improvement in operating expenditure efficiency and for setting targets in allowable operating expenditure. It also examined the role of incentives in the regulation of a public sector corporation.

We are keen to understand stakeholders' views about our proposals, and in Volumes 3 and 4 we set out a number of questions for consultation.

This current volume, Volume 5, describes our proposed method for assessing the scope of capital expenditure efficiency.

We had originally intended to include this subject as part of Volume 4. Unfortunately, there were a number of issues that were outstanding in defining the current *Quality and Standards II* capital programme. We therefore delayed publishing this part of our methodology until now. We considered that it was not in customers' interests to publish our approach to assessing capital efficiency for the next regulatory control period until outstanding issues relating to the capital expenditure programme from the current regulatory period had been resolved.

We welcome responses to the consultation questions that are set out at the end of each chapter. Responses should be sent to:

Katherine Russell
Water Industry Commissioner for Scotland
Ochil House
Springkerse Business Park
Stirling FK7 7XE

or by email to :

srcmethodology@watercommissioner.co.uk

Responses should arrive by 17 January 2005.

We recognise that the period for consultation is short. This is, however, a direct result of the difficulty that we have had, and continue to have in defining the baseline investment programme for the current regulatory period. We apologise for any inconvenience which the shorter consultation period may cause.

Volume 5 considers issues relating to capital expenditure. Significant concerns have been expressed by stakeholders about both the progress and the scope of the current investment programme. We share some of these concerns, but believe that improved definition of the capital programme before the next regulatory control period begins will reduce many of these concerns.

Structure of this volume

Volume 5 is presented in four sections.

Section 1 is an introduction to capital investment. It comprises five chapters. Chapter 2 outlines the *Quality and Standards III* process and our response to the

Scottish Executive's consultation '*Investing in water services 2006-14*'. Chapter 3 discusses capital maintenance. Capital maintenance is the investment that is required to maintain the current level of service. It reflects the normal wear and tear on assets. Chapter 4 discusses the implications of the quality programme. The quality programme covers investment in assets designed to improve public health or environmental compliance. Investment in such assets may have operating cost implications. Chapter 5 outlines issues arising from the supply and demand for water and sewerage services.

Section 2 reviews the issues that need to be addressed if we are to establish a robust baseline for the investment programme in Scotland. It also describes how we propose to draw lessons from *Quality and Standards II* in establishing a clear baseline for *Quality and Standards III*. This section contains five chapters. Chapter 6 outlines the history of capital investment in Scotland and draws comparisons with investment south of the border. Chapter 7 describes the lessons that should be learned from our monitoring of *Quality and Standards II*. Chapter 8 highlights that increasing the size of the capital programme may not lead to more outputs and may make the management of public expenditure more problematic. Chapter 9 describes how we propose to set a baseline against which we will monitor progress. Finally Chapter 10 discusses how we will review the capital programme to identify opportunities for synergy.

Section 3 describes in detail the process by which we compare the relative efficiency of Scottish Water in capital expenditure with that of the companies south of the border. There are three chapters in this section. Chapter 11 discusses the approach that the Office of Water Services (Ofwat) uses in assessing the scope for capital efficiency for the companies in England and Wales. In Chapter 12 we outline alternative approaches to the assessment of the scope for capital expenditure efficiency. Chapter 13 outlines our proposed approach.

Section 4 looks forward to the end of the next regulatory period. It considers what the relative performance of Scottish Water and of the companies south of the border is likely to be in 2010. The difference in relative performance will inform the efficiency targets that we set. There are three chapters in this section. In Chapter 14

we assess the scope for improvement in Scottish Water's capital expenditure efficiency. Chapter 15 explains how we will set targets. The final chapter, Chapter 16, discusses how we propose to monitor and report on Scottish Water's capital investment performance during the next regulatory control period.

Section 1: Chapter 2

The Scottish Executive's consultation: *Investing in water services 2006-14*

2.1 Introduction

This chapter explains the Quality and Standards process and our response to the Scottish Executive's consultation document about this process, *Investing in water services 2006-14*. The Quality and Standards process determines the type and level of investment in the Scottish water industry.

We begin by providing a short overview of the significant investment that is required to maintain the level of service provided to customers. We then briefly discuss the first two Quality and Standards processes and their outcomes. We go on to outline the Scottish Executive's current Quality and Standards consultation and our response to it. The chapter ends with a review of the potential implications of *Quality and Standards III* for customers' bills.

2.2 Why does Scottish Water need to invest?

Rain water may fall from the sky but its collection, treatment and transportation to customers incurs costs. The Scottish water industry has some 46,500 kilometres of water mains and 370 water treatment works.

Waste water must be collected and transported to a treatment works, where it can be treated such that it may be discharged back to the environment. This requires some 44,900 kilometres of sewers and 616 sewage treatment works.

Scottish Water must invest in its assets in order to maintain a water and waste water service. Such investment can be divided into three broad categories:

- maintenance,
- quality, and
- growth.

2.2.1 Maintenance

In its *2003-04 Annual Return*, Scottish Water stated that it would cost more than £27 billion to replace all of the public water and sewerage assets in Scotland. It is important that we maintain these assets appropriately. This will require considerable on-going investment. Maintenance investment includes all spending on assets that is required to maintain the current level of service. Accountants measure the rate at which assets wear out using depreciation. In Volume 3, Chapter 3, we explained that, in the water industry, depreciation is recognised in two ways:

- Non-infrastructure assets (normally those above ground); these assets are depreciated using standard accounting methods; and
- Infrastructure assets (generally those below ground); these assets are assumed to be required in perpetuity and an annual charge (calculated as the average expected spend over the next 15-20 years) is made to the income and expenditure account to recognise the costs of maintaining the serviceability of the infrastructure.

Maintenance investment is split into 'base' investment and 'infrastructure renewals'. We use the term base to describe the maintenance of non-infrastructure assets. The term infrastructure renewals refers to investment in the infrastructure.

Base investment is necessary to maintain defined levels of service to customers. The ongoing replacement of assets at the end of their useful lives is termed base investment. Base investment does not produce any improvement in the underlying average level of service.

Infrastructure renewals expenditure is investment required to maintain the infrastructure network in the same condition and at the same performance level. As with base investment, no improvement in the underlying average service results from infrastructure renewals.

Maintenance investment is also referred to as capital maintenance. We discuss capital maintenance further in Chapter 3.

2.2.2 Quality investment

We use the term 'quality' to describe any investment that improves the average standard of the existing asset base. Quality investment is usually required for one (or more) of the following reasons:

- to improve the environment;
- to increase the quality of drinking water, thereby improving public health; and
- to increase the level of service to customers.

An example of quality investment would be the addition of secondary treatment at a waste water treatment works that currently has only primary treatment. This will result in an improved quality of treated effluent for discharge to the environment.

We discuss quality investment more fully in Chapter 4.

2.2.3 Growth investment

Investment categorised as growth is required to meet an increased demand for services from new and/or existing customers. This can mean increasing the capacity of existing assets or constructing new assets. An example of growth investment would be connecting a rural area to the water or sewerage network for the first time.

2.3 How the Quality and Standards process has developed

It is important to be able to prioritise competing demands for investment. There will be demands to improve compliance with public health and environmental standards and to connect more properties to the water and sewerage network.

Total investment is limited by the following factors:

- **Customers' bills:** customers ultimately pay for investment and higher investment will result in higher bills;
- **Ability to deliver the programme efficiently:** Scottish Water has a very large number of assets and individual investment projects tend to be quite small. There is a limit to the size of investment programme that can be managed effectively by Scottish Water; and
- **Capacity of the civil engineering market:** The civil engineering market in Scotland was recently estimated at £1.4 billion per year, with Scottish Water currently accounting for around one-third of this total.

Quality and Standards II targeted record levels of investment in the Scottish water industry. Despite some £132 million being made available to meet development constraints, there have been claims that there was insufficient investment in growth.

2.3.1 2000-01: Quality and Standards I

The water authorities' investment priorities for 2000 and 2001 were contained in a Scottish Executive publication *Water Quality and Standards*, which was published in November 1999. This was the first time that the investment programme in the Scottish water industry had been formalised.

Quality and Standards I focused on the amount of money that needed to be spent in order to attain certain standards. There was less focus on the customer outputs that would be delivered by this investment programme. *Quality and Standards I* identified the following investment priorities.

Table 2.1 Quality and Standards I investment

	2000-01	2001-02	Total
Investment in drinking water	£185m	£235m	£420m
Investment in sewerage	£165m	£155m	£320m
Total	£350m	£390m	£740m

In our interim *Strategic Review of Charges*, we recommended an increase in the level of investment in capital maintenance. We advised Ministers that higher revenue caps would be required to allow a sustainable level of investment in ongoing maintenance of the water authorities' assets. Our analysis had suggested that *Quality and Standards I* did not fully recognise the extent of investment required simply to maintain the current level of service to customers.

Sarah Boyack, MSP, the then Minister for Transport and the Environment, modified our advice in order to limit increases in prices to customers. The revised revenue caps did, however, make an extra £150 million available for investment. This revised the total level of investment included in *Quality and Standards I* to £890 million.

In our *Investment and Asset Management Report 2002-03* we highlighted that the water authorities had invested £888 million between April 2000 and March 2002. It therefore appeared reasonable that all of the *Quality and Standards I* objectives should have been delivered in full. We also reported that, since *Quality and Standards I* targets had been set at a very high level, it was not possible to monitor the delivery of those targets.

The information provided by the *Quality and Standards I* process without doubt provided greater clarity than had been available previously. However, customers would have benefited further if clearer and more detailed information about specific investment projects, and their expected outcomes, had been available.

2.3.2 2002-06: Quality and Standards II

In January 2001, the Scottish Executive published a consultation document¹ setting out clear options for the water authorities' investment programmes during the *Quality and Standards II* period.

In the document, customers were asked for their views on the future investment priorities of the water authorities. In particular, the consultation raised the issue of the balance that should be taken between

meeting standards by adopting long-term measures (such as building new and improved plants) or by adopting more temporary measures (such as increasing operating costs and/or further 'patching up' existing treatment plants). The consultation clearly highlighted that the quick-fix method was cheaper in the short term but more costly in the long run. Customers' views were also sought about the speed with which underground assets should be replaced.

The consultation document presented three options:

- Minimum option: This met the legal standards set by regulations on water and sewage treatment. This option had low-cost solutions and did not tackle the state of fast deteriorating existing assets, such as treatment plants, water mains and sewers;
- Central option: This met the legal standards and allowed for some improvements to the assets, although only investing enough in the underground infrastructure to prevent further deterioration; or
- Enhanced option: This allowed substantial progress towards modernising all of the assets. It was also the only option that included significant separate resources for removing development constraints and first time water and sewerage connections.

There were 40 responses to the consultation paper. These were mainly from local authorities and environmental organisations. Despite the potential for lower charge levels under the minimum option, only 5% of respondents supported this option. Some 42% of respondents (including the Scottish Environment Protection Agency, SEPA) supported the enhanced option. These respondents argued that there was a clear opportunity to invest properly in Scotland's water services, and to deal with the backlog of underinvestment in the underground network of pipes. They argued that this would improve the level of service to customers by reducing the risk of burst water mains and flooding from sewers. Some 53% (including the three water authorities and the Water Industry

¹ Scottish Executive, *Water Quality and Standards 2002-06*, 2001.

Commissioner for Scotland) supported the central option.

The Scottish Executive concluded that the central option should be chosen. It recognised that there was a difficult balance to be struck between the impact on customer charges and the undoubted benefits of the enhanced option. The Scottish Executive therefore included in the central option additional investment to help ease constraints on new developments, and to allow first time sewerage provision in rural areas.

The investment programme was summarised in *Water Quality and Standards: Investment priorities for Scotland's water authorities 2002-06*, which was published in August 2001. This indicated that the cost of the investment programme would be £2.34 billion.

In the *Strategic Review of Charges 2002-06* we examined the scope for capital efficiency in the *Quality and Standards II* investment programme. We advised Ministers that all of the outputs, originally costed at £2.34 billion, could be delivered by Scottish Water for £1.81 billion. Ministers accepted our advice. Scottish Water is therefore required to deliver the full scope of *Quality and Standards II* for £1.81 billion.

The summary document provided a greater amount of information about expected outputs than had been outlined for *Quality and Standards I*. The outputs included:

- relining or replacing 3,506 km of water mains across Scotland;
- reducing to 3,300 the number of properties suffering from poor pressure in the former East of Scotland Water Authority's area; and
- providing secondary treatment of waste water for 85% of properties in the former North of Scotland Water Authority area.

The document also contained general information about other expected outputs from the investment, including:

- a reduction in the number of properties affected by low pressure, a decrease in the number of bursts and an improvement in water quality; and
- a reduction in the number of properties liable to sewer flooding, a reduction in the number of sewer blockages and an improvement in the environment.

However, there was insufficient detail about these outputs, or the inputs, to allow us to monitor progress in their delivery as part of the *Quality and Standards II* investment programme.

In May 2001², we asked the former authorities to provide a project-level breakdown of their *Quality and Standards II* investment plans. Substantially complete lists were provided by the former North of Scotland Water Authority and West of Scotland Water Authority.

The former East of Scotland Water Authority provided a summary list. We asked for more detailed information about the specific projects which the authority intended to undertake. We also asked the authority to substantiate its claim of capital efficiency included in its costing of *Quality and Standards II*³.

The process of trying to clarify a full and detailed inventory of outputs, which became known as WIC18, has taken far longer than it should have done. Despite our working closely with the Drinking Water Quality Regulator (DWQR) and SEPA, Scottish Water appears to have been reluctant to provide a final version of the capital programme to be delivered during *Quality and Standards II*.

We believe that we now have a complete list of all of the projects to be delivered in *Quality and Standards II*. However, we are concerned about the length of time that this process took. It would have been much better for

² WIC18 *Quality and Standards Final Output*, issued by the Water Industry Commissioner for Scotland in May 2001 to the Chief Executives of the three former water authorities. It is reprinted in *Our work in regulating the Scottish water industry: Setting out a clear framework for the Strategic Review of Charges 2006-10*, Appendix 2, page 142.

³ *Quality and Standards II* is the investment programme for the period April 2002 to March 2006.

customers, and for the wider group of stakeholders, if greater clarity had been provided in advance of the start of *Quality and Standards II*. This would help ensure that stakeholders' expectations are met and that the delivery of the programme is monitored effectively.

We believe that the need for detailed definition of the baseline capital programme is a lesson that must be learned from both *Quality and Standards I* and *II*. We will return to this issue in Chapters 7 and 9.

2.4 Quality and Standards III

Quality and Standards III will determine the investment priorities for the period 2006 to 2014. Our *Strategic Review of Charges 2006-10* will only cover the first half of this period.

Scottish Ministers will issue detailed guidance to this Office and to Scottish Water in January 2005 on the issues to be taken into account in the development of the *Strategic Review of Charges 2006-10*. This guidance will determine the investment priorities for 2006-10. Ministers' decisions are being supported by a wide-ranging public consultation and independent research. *Investing in Water Services 2006-10 – The Quality and Standards III project: A consultation paper* was published in July 2004.

2.4.1 Stakeholder process for developing the Quality and Standards III consultation and investment programme

At the start of the *Quality and Standards III* process, the Scottish Executive established a project board comprising a number of stakeholders. The board has had overall responsibility for developing the options to be included in the *Quality and Standards III* consultation.

Stakeholders represented on the board were:

- Communities Scotland;
- Confederation of British Industry (Scotland);

- Convention of Scottish Local Authorities and local authorities;
- Drinking Water Quality Regulator;
- Historic Scotland;
- Homes for Scotland;
- Scottish Environment Protection Agency;
- Scottish Executive Departments;
- Scottish Federation of Housing Associations;
- Scottish National Heritage;
- Scottish Water;
- Water Customer Consultation Panels; and
- Water Industry Commissioner for Scotland.

Detailed definition of the required investment was delegated to a number of specialist groups, each of which was responsible for a work package. These work packages included:

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

Each work package identified investment 'drivers'. In most cases, the driver of a need for investment was legislation. A number of scenarios ranging from 'do nothing' to 'aspirational' improvement were designed. The performance of Scottish Water's assets relative to the identified investment drivers at the end of the *Quality and Standards II* investment programme was assessed.

Scottish Water was then asked to cost the gap between the expected position at the end of *Quality and Standards II* and each of the identified scenarios. The specialist groups responsible for work packages each submitted an interim report to the project board in April and May of 2004. These interim reports have been used by the Scottish Executive to inform the *Quality and Standards III* consultation. It is important to highlight that only Scottish Water was involved in costing the required outputs.

2.4.2 Content of the Investing in Water Services consultation

Investing in Water Services 2006-14 sets out the Scottish Executive's views on the likely costs [based on Scottish Water's costing of the required investment] of different levels and types of investment. The consultation seeks views on investment priorities and on whether or not bills should rise to pay for each type of investment. The Scottish Executive will use responses to the consultation to determine Scottish Water's investment programme for the period from 2006 to 2014.

Principles

The consultation begins by identifying the following principles that should be applied when the Scottish Executive determines the investment programme that Scottish Water is required to deliver:

- **Cost-effective** – an investment programme that is founded on a proper assessment of investment needs for the industry and one that addresses these requirements in the most cost-effective way;
- **Affordable** – the Executive recognises that there is a need to limit the scale of increases in charges to a level that customers think is fair;
- **Deliverable** – this means limiting the size of the investment programme to ensure that it is possible to deliver it. Constraints on the size of the programme include civil engineering capacity, Scottish Water's ability to deliver investment efficiently and the level of disruption that communities can tolerate, for example, from roads being dug up; and

- **Sustainable** – by this the Executive means a programme that delivers environmental improvements at a cost and pace that is fair and equitable for current and future generations.

The Executive invites stakeholders to comment on these principles.

Establishing future investment needs

The consultation document is based on the interim reports from each of the work package groups. The Executive recognises that further detailed work is required to refine costs, assess risks and benefits, and pull investment requirements into an overall investment programme.

The Executive lists the following questions which it expected the work package groups to address in order to ensure that investment is carried out at minimum cost to customers:

- Is it legitimate for customers alone to pay for the investment under consideration?
- Is the proposed investment option the most cost-effective available?
- Are the planning assumptions that lie behind the requirement reasonable?
- Is there any flexibility built into the requirement (either to meet a lower standard of compliance in the regulatory period or invest over a longer period), and, if not, should there be?
- What level of priority should be attached to the individual investment requirements?

The Executive then asks if these are the correct questions that each work package group should use to assess each individual investment option.

Maintaining the current level of service to customers

We described the importance of proper maintenance of the asset base earlier in this chapter. The *Investing in*

Water Services consultation outlines the different approaches to assessing the appropriate level of investment in maintenance and suggests that a 'serviceability' approach should be used.

The serviceability approach involves identifying levels of service to customers then costing how much it would cost to maintain this level of service over the period. We discuss this approach further in Chapter 3.

The measures used by the Scottish Executive in the *Investing in Water Services* consultation are shown in Tables 2.2 and 2.3.

Table 2.2: Waste water serviceability standards and costs

Waste water serviceability indicator	Description	Number as at 31/03/04
Number of properties flooded due to other causes	Flooding that is caused by a means other than overloaded sewers. Such 'other causes' are blockages, collapse or operational failures that prevent the sewer system from carrying sewage, and subsequently the sewage discharges to the surface uncontrolled.	366
Number of pollution incidents	Pollution incidents resulting from uncontrolled sewage discharges (flooding and overflows) from the sewer network to a watercourse or area that harm the environment, habitat or population.	555
Number of collapses per 1,000km	Structural collapse of a sewer that prevents it from carrying sewage. Partial collapses also occur which do not completely prevent the sewer from carrying sewage but may decrease performance.	56
Number of failing waste water treatment works (capital maintenance)	A waste water treatment works is deemed to be 'failing' if its discharge does not comply with the sanitary requirements (numerical limits for a number of biological and chemical parameters) set out in the discharge consent, according to a permitted number of exceedences for each parameter.	45
Total estimated maintenance costs (over the eight-year period)		£1,300 million

Table 2.3: Water serviceability standards and costs

Water serviceability indicator	Description	Number as at 31/03/04
Number of bursts per unit length	Structural failure of a water main that prevents it from carrying water or results in loss of pressure in the main. Quoted as the number of bursts per 1,000km of mains.	198.3
Number of unplanned interruptions exceeding 12 hours	Loss of supply to customers for greater than 12 hours, either as the result of a burst or through a failure of another infrastructure asset.	3,000
Number of properties on the low pressure register	The number of properties receiving pressure below the reference level.	14,942
Water Quality 1,000 Index	The Water Quality 1,000 index covers regulatory compliance at customers' taps with 10 drinking water parameters. These are total coliforms, faecal coliforms, colour, turbidity, pH, aluminium, iron, manganese, lead and trihalomethanes. The 1,000 Index is subject to refinement as an indicator because not all of these 10 parameters are related to capital maintenance.	985
Number of microbiological (coliform) failures at water treatment works	The coliform group of organisms is present in the gut of all warm-blooded animals and also widely distributed in the environment. Their presence in water that is leaving a water treatment works indicates a failure of the disinfection system.	85
Total estimated maintenance costs (over the eight-year period)		£920 million

The Executive cites cost estimates from Scottish Water, which suggest that maintaining these current standards will cost around £2.2 billion, or around £275 million per year. The Executive also includes an estimate that a further £500 million over eight years would result in improvements in these outputs.

The *Investing in Water Services* consultation invites stakeholders' views on the importance of maintaining serviceability levels during *Quality and Standards III*. The Executive also seeks views on which serviceability measures are most important; and, if it is appropriate to invest further in improving these measures, whether this should be funded from higher charges or by reduced investment in other areas.

Growth in the public water and sewerage networks

The *Investing in Water Services* consultation splits investment in growth into two categories: new development and first-time connection.

New business and housing developments create a demand for investment to connect to the public water and sewerage network. During the development of *Quality and Standards III*, Scottish Water asked local authorities to project the level of new housing development between 2006 and 2014. The 32 local authorities estimated that some 230,000 new houses would be built.

The Scottish Executive's estimate is much lower. It estimates that housing numbers may grow by around 15,000 per year or a total of 120,000 over the 2006-14 period.

Scottish Water has estimated the cost of connecting 230,000 houses to the public water and sewerage network at about £1 billion over the eight years. This cost will to some extent be met by a new charging regime for connections to the network. A new regime of connection charging is also being consulted upon separately in the *Paying for Water Services* consultation document. We discussed this consultation in Volume 3, Chapter 2 of our methodology.

The Scottish Executive indicates that it intends to include a provision within the investment programme to fund deep connection costs. It asks stakeholders to consider whether this should be paid for by higher charges or lower investment in other areas.

First-time connections occur when customers who previously had private water and/or sewerage services are connected to the public network. Scottish Water is only required to do this when the costs are deemed 'reasonable'.

Three of the work package groups (environmental, drinking water, and extending public water and sewerage networks) have examined this issue. They have identified that first-time water provision could cost some £200 million over the eight-year period and first-time waste water provision could cost around £600 million over the eight years. None of these properties could be connected at reasonable cost. The work package group that examines environmental issues has identified £260 million of priority first-time provision that they believe would deliver important environmental benefits.

The Executive seeks views on whether or not properties should be connected at beyond reasonable cost. It also asks whether, if an amount for first-time provision is included within the investment programme, it should be paid for by higher charges or lower investment elsewhere.

Environmental improvements

Investing in Water Services recognises that there will need to be significant investment in Scotland's aquatic environment well beyond 2014. The work package group identified more than 30 separate legal drivers for investment. Many of these drivers relate to European Union Directives.

The consultation identifies that around £2.5 billion is required to ensure that Scottish Water meets mandatory standards. A further £500 million is required to demonstrate progress towards the guideline standards.

The Scottish Executive asks stakeholders what they believe the top environmental priorities should be. It additionally asks whether stakeholders believe additional environmental investment should be paid for through higher charges or through lower investment in other areas.

Drinking water quality and water resources

The water quality work package group identified that significant investment was required to remove harmful substances, such as trihalomethanes and lead, from the water supply. In practice there can be a difference between regulatory standards (required by the Drinking Water Quality Regulator) and legal standards (required by law).

Investing in Water Services suggests that around £1.65 billion would allow Scottish Water to reach the regulatory minimum position by 2010. Around £30 million of this is due to regulatory standards being higher than legal standards.

The Scottish Executive seeks views on the priorities for investment in drinking water and water resources. It also

asks whether stakeholders believe that additional investment in drinking water should be paid for through higher charges or through lower investment in other areas.

Other priorities for customers

The consultation identifies three high priority customer issues. These are:

- odour from waste water treatment works;
- water pressure; and
- sewer flooding.

Odour from waste water treatment works is becoming a higher profile issue for customers. This could either be because of a growing intolerance of odour or because housing is encroaching upon waste water treatment works. Current legislation⁴ prevents waste water treatment works emitting an odour that could be considered a 'statutory nuisance'. Additionally, a few waste water treatment works are issued with odour consents by SEPA as part of the Integrated Pollution Prevention and Control regime⁵.

The costs of reducing odour problems are not included within the consultation. The Scottish Executive has only recently issued a draft Code of Practice relating to odour. Nonetheless, the Executive seeks views on whether investment to reduce odour should form part of the investment programme. It also asks customers to consider whether this should be paid for through higher charges or lower investment elsewhere.

Low water pressure can mean that some household appliances cannot be used. Scottish Water expects there to be 14,942 properties on its low water pressure register at the end of *Quality and Standards II*. Scottish Water estimates that it could remove 13,365 properties

from this register at a cost of £40 million. The consultation seeks views on whether poor pressure should be included in the investment programme and, if so, whether this should be paid for from higher charges or lower investment elsewhere.

Sewer flooding is a relatively rare occurrence. However, when it does happen it is distressing and unpleasant for those customers affected. The consultation estimates that an extra £240 million would remove around 2,301 properties from the 'at risk' register⁶.

Summary

The costs contained in the *Investing in Water Services* consultation are summarised in Table 2.4.

Table 2.4: Summary of costs in Investing in Water Services consultation

Description	Cost (£ million)
Maintenance	
Water	925
Waste water	1,300
'Higher standards'	500
Extending public networks	
Deep connections in new developments	500
First time water	200
First time waste water	600
Environmental improvements	
Legal minimum	2,500
Progress towards guideline	500
Drinking water and water resources	
Regulatory minimum	1,650
'Reasonable aspirations'	1,750
Other priorities for customers	
Odour	Unknown
Pressure	40
Sewer flooding	240
Total	10,705
Amount per annum (total divided by 8)	1,338

⁴ The Environment Protection Act 1990.

⁵ The Integrated Pollution Prevention and Control is European Directive 96/61/EC that was enacted into UK law with the Pollution Prevention and Control Act 1999.

⁶ Register kept by Scottish Water of those properties that are deemed to be at risk of suffering a sewer flooding incident with a defined frequency.

2.4.3 Our response to the Investing in Water Services consultation

This section outlines our response to the *Investing in Water Services* consultation. Our response recognises that customers are not likely to agree fully on priorities and that our principal role is to ensure that customers receive the best sustainable value for money.

Principles

We agree with the four guiding principles outlined by the Scottish Executive for *Quality and Standards III*. Our main concern is that the investment programme is properly defined, the inputs and the outputs are measurable, and that the investment programme is placed in the public domain. We believe that this is important to ensure that:

- stakeholders have a common understanding of what is included within the investment programme;
- customers' expectations can be met; and
- delivery of the *Quality and Standards III* investment programme can be monitored effectively.

Establishing future investment needs

We are pleased that the Executive has identified important questions for further work to understand investment needs. Our view is that two further questions should be added:

- Is the investment defined at an asset level?
- Is all of the investment at each asset level understood so that the risk of overlap is minimised?

These questions are important as it may be necessary to prioritise projects in order to ensure that the programme is deliverable. Clear definition of the programme should reduce discussions about the content of the programme at a later date.

Maintaining service standards

We believe that maintenance of assets should be the highest investment priority for Scottish Water. The sustainability of the water industry in Scotland and its ability to deliver environmental, public health and customer service improvements depends on adequate maintenance on an ongoing basis.

Maintaining the current level of serviceability would be appropriate.

It is important that the outputs of capital maintenance are specified clearly and in detail. Wherever possible this should be at an asset level.

Growth in the public water and sewerage networks

In our response to the *Paying for Water Services* consultation we welcomed the proposal to charge developers for connections to the public water and sewerage network. We believe that this should ensure that the highest priority development constraints are identified and resolved.

We also believe that a well-managed water and sewerage company with good knowledge about its assets should be able to provide clear and detailed information about areas that are open for development to local authorities. We suggest that a map should be made available, highlighting those areas where development can be accommodated.

Investing in the environment, drinking water quality and water resources

It is possible that we may not be able to afford or deliver all of the desired investment requirements. In this case, we believe that Ministers will have to balance:

- what customers say they want; and
- what customers 'ought to want'.

Customer preferences can be gleaned from market research and from responses to this consultation. It is important that Ministers listen carefully to these preferences. However, it is also important to recognise the expertise of the Drinking Water Quality Regulator and SEPA and their understanding of important public health and environmental compliance issues

It is not our role to comment on the level and type of quality investment. It is important that any such investment is clearly defined at an asset level and takes account of the capital maintenance investment.

Other priorities for customers

We believe that market research and the responses to the consultation should allow Ministers to take decisions about the appropriate level of investment in these areas. From a regulatory standpoint, the most important issue is that investment inputs and outputs are properly defined so that we can monitor the delivery of benefits to customers.

2.5 Comparison with England and Wales

In England and Wales there are similar investment needs. However, the process for identifying investment priorities is somewhat different.

2.5.1 Business plans

In England and Wales the onus is on the company to develop its investment programme. A company is expected to consult with both the Environment Agency and the Drinking Water Inspectorate. A company's investment plan should also be supported by customer research which shows that customers both demand the investment and are willing to pay for it.

Each company's initial proposals are contained in draft business plans which are submitted to Ofwat. These plans then form the basis of discussions between the companies, Ofwat, the Environment Agency and the Drinking Water Inspectorate about appropriate types

and levels of investment. Ministers then issue advice to companies and Ofwat about the investment that will be required. This advice allows the companies to submit final business plans to Ofwat that contain detailed investment plans.

2.5.2 Ofwat's role

Having scrutinised the business plans very carefully, Ofwat will:

- decide whether the proposed investment is justified; and
- determine the scope for efficiency in the delivery of the outputs.

Ofwat use several processes to remove investment which it believes is not justified⁷. These processes involve removing projects and schemes that:

- do not constitute value for money;
- do not have specific outputs;
- can be deferred to a later period;
- do not have the support of the quality regulators; or
- are particularly expensive.

Once Ofwat has reduced the number and scope of projects to be delivered it assesses the scope for efficiency in the delivery of the capital investment. The efficient delivery of investment is included in price limits. It is important that *Quality and Standards III* delivers an output that is as robust as the business plans in England and Wales deliver. In particular, investment priorities included in *Quality and Standards III* must be:

- specific;
- sustainable;

⁷ Ofwat, *Future water and sewerage charges 2005-10: Final determinations*, page 192.

- cost-effective; and
- based on customer preferences and willingness to pay.

Even with a specific investment programme there will be a need to ensure that it is relevant and current throughout the eight year period. A transparent and accountable process for substituting projects must therefore be developed.

2.6 Questions for consultation

1. Do respondents agree that the final investment programme should be defined in detail at an asset level?
2. Do respondents agree that this investment programme should be placed in the public domain?

Section 1: Chapter 3

Capital maintenance

3.1 Introduction

In Chapter 2 we examined the three major components of an investment programme, namely: capital maintenance, quality enhancement and investment to meet future supply/demand requirements.

Investment in capital maintenance is a major element of Scottish Water's capital programme; replacing assets at the end of their lives is essential to maintaining performance of the network, and hence to maintaining levels of service to customers.

In the current four-year *Quality and Standards II* period, investment in capital maintenance represents more than 40% of the £1.8 billion total expenditure. It is essential that customers can be assured that this investment is being spent effectively.

In this chapter we outline various approaches to assessing capital maintenance requirements for the water and wastewater industries. We also examine the approaches taken in England and Wales, and our proposed approach at the *Strategic Review of Charges 2006-10*.

It can be difficult to determine the correct level of expenditure on capital maintenance. Too much investment is likely to result in assets being replaced unnecessarily, leading to higher prices and little benefit for customers. Too little investment is likely to mean a gradual decline in performance and customer service.

Even a relatively high level of spending on capital maintenance may not bring the desired benefits if the operator lacks sufficient asset information or management capability. Without these, it may be difficult to target and prioritise capital maintenance investment in an efficient way.

3.2 Assets lives and replacement costs

The assets required to deliver water and wastewater services can be divided into five broad types:

- Water infrastructure – the underground network of pipes, pumps and valves through which water is supplied to customers. Water infrastructure also includes dams, reservoirs and raw water aqueducts.
- Water non-infrastructure – water treatment works, pumping stations, service reservoirs and water towers.
- Wastewater infrastructure – mainly comprises sewers that collect sewage and storm water and transport it to where it can be treated. This category also includes sea outfalls.
- Wastewater non-infrastructure – wastewater treatment works, pumping stations and sludge treatment facilities.
- Support services – operational assets that are essential to effective management of the business, including vehicles, information systems, offices, depots and stores¹.

Table 3.1 shows the average operational lives of assets in each of these categories.

Table 3.1: Average operational asset lives

Categories	Assets	Life (years)
Water infrastructure	Water mains, dams and reservoirs	60-100
Water non-infrastructure	Water treatment works, service reservoirs	30-50
	Other facilities, including valves, pumping stations	<15
Wastewater infrastructure	Sewers	80-120
Wastewater non-infrastructure	Water treatment works	30-50
	Other facilities, including valves, sewage pumping stations	<15
Support services	Offices, depots and stores	5-10
	Vehicles, IT	3-7

Clearly, infrastructure assets have significantly longer lives than non-infrastructure and support service assets. This has an impact on the capital maintenance requirements in these areas.

Although the table shows the average asset life within each category, it is important to note that asset lives vary

¹ *Investment and asset management report 2002-03*, page 12, Water Industry Commissioner for Scotland.

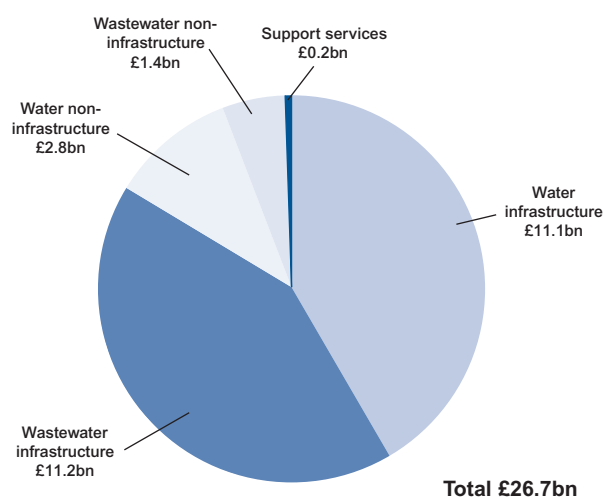
significantly within these categories. For example, many sewers that were installed during Victorian times still operate satisfactorily, while some that were laid more recently do not operate satisfactorily because of factors such as ground conditions or the use of sub-standard materials.

Scottish Water's assets currently include:²

- 371 water treatment works;
- 824 wastewater treatment works;
- 46,508 km of water mains; and
- 44,854 km of sewers.

It is estimated³ that it would cost approximately £27 billion for Scottish Water to replace its entire asset base. The replacement cost of different asset types is summarised in Figure 3.1.

Figure 3.1: Asset replacement cost



All assets have a finite life. Consequently an investment programme has to be of such a size that it will be able to replace, as required, all the assets that support the service to customers. The asset replacement cost is an indication of the investment that will be required over the very long term.

3.3 Defining capital maintenance

Capital maintenance is the replacement of an asset that is at the end of its useful life. It relates solely to replacing assets to maintain the existing standard of customer service and/or environmental performance. As such, it is distinct from both investment in 'quality'⁴, which results in an increased level of service to customers or the environment, and expenditure on maintaining a balance between supply and demand⁵.

Capital maintenance that is undertaken on the below-ground infrastructure is termed 'infrastructure renewal' while that which is carried out on above-ground assets is 'base maintenance'.

Infrastructure renewal investment

Different parts of the network of water pipes and sewers wear out at different times and at different rates. The rate at which they deteriorate depends on factors such as age, soil type, construction and usage. The network is never replaced in its entirety; sections are renewed when their condition and performance deteriorates to a point where it is cost-effective to replace them (reducing repair costs, for example) or it is necessary to replace them in order to maintain customer service levels.

Infrastructure renewals investment maintains the underground infrastructure in the same condition and/or at the same overall performance level that exists today, on average. Performance of the network in different areas of the country may therefore improve or deteriorate.

Base maintenance

Above-ground assets, such as treatment works and pumping stations, are replaced when they reach the end of their lives. Base maintenance is defined as the investment required to replace these assets in such a way that the overall performance of the asset base remains constant.

² Scottish Water Annual Return, June 2004, Table E.

³ Scottish Water Annual Return, June 2004, Table H.

⁴ See Chapter 4.

⁵ See Chapter 5.

When we use the term capital maintenance we mean the sum of infrastructure renewal and base maintenance expenditure.

Managing capital maintenance investment

As a water and sewerage company's asset base is large and diverse, it is able to adopt an ordered approach to replacing assets. Investment can be prioritised so that service is delivered to customers as effectively and efficiently as possible.

A useful example of capital maintenance funding is that of a typical water main. The average expected life of a water main is around 70-80 years, which is in line with average life expectancy. If an individual lived in the same house for the whole of their life, it would be reasonable to expect the water main supplying the property to be replaced once during that person's lifetime.

Customers contribute to charges during each year of their adult life. Some customers will pay in advance of receiving a new water main, others will receive the new water main earlier and will pay for it over the remainder of their life. In effect, the whole customer base jointly purchases each year a quantity of refurbished main that will keep the system in a fully serviceable order. Although as individuals they will benefit only once during their lifetime from the mains replacement, during all other years they will each have access to a safe water supply.

Although above-ground assets typically have shorter asset lives, the same logic applies. For example, if a water treatment works has an expected life of 40 years, a customer living in the same property for the whole of their life will see the water treatment works serving the property replaced twice during that time. Again, the average level of service received by the customer will not be affected by the actual timing of replacement.

The portfolio of Scottish Water's assets can be properly maintained by an annual sum of money, which, if consistently invested, will ensure that serviceability of the overall network is maintained.

3.4 Approach to capital maintenance in Quality and Standards II

Investment priorities for the Scottish water industry are established through the Quality and Standards process. In Chapter 2 we examined the Quality and Standards process. We also explained that we had worked hard to achieve great clarity concerning outputs for *Quality and Standards II* than there had been for *Quality and Standards I*.

In spite of our efforts, however, the outputs from capital maintenance expenditure were still not particularly well defined in *Quality and Standards II*. The outputs were limited to targets for water mains renewal and sewer refurbishment and to a statement that "the level of capital maintenance should meet the legal standards and make some improvement to the assets, although only investing enough in the underground infrastructure to prevent further deterioration"⁶.

In our 'WIC18' letter⁷, we outlined our requirement for a fully defined investment programme. Over the last several years we identified the list of projects that comprise the *Quality and Standards II* investment programme. This included more than 2,000 capital maintenance projects, representing investment of around £800 million. It will be important to build on this experience in the next regulatory control period.

Defining Quality and Standards II investment in capital maintenance

During the *Quality and Standards II* process, an 'asset stewardship' approach was used to define the appropriate level of capital maintenance. This approach uses three key parameters to identify the required level of capital maintenance:

- condition;
- performance; and
- age.

⁶ Scottish Executive, 'Water Quality & Standards – Investment Priorities for Scotland's Water Authorities 2002-2006', page 5.

⁷ WIC18 – *Quality and Standards Final Output* – 30 May 2001

In regulatory information returns, Scottish Water supplies us with information about each of these parameters for its asset base. Condition and performance grades are allocated on a scale of 1 to 5, using a clearly defined scoring system.

3.5 Our approach to assessing Scottish Water's capital maintenance requirements in the last Strategic Review of Charges

We developed 'renewal timing matrices' in order to reach conclusions about the assets' remaining lives and, hence, to determine the scope and phasing of the capital maintenance programme.

An example matrix is shown below. Both condition and performance are assessed on a scale of 1 to 5, with 1 being 'good' and 5 'failing'. The matrix indicates the asset's remaining life in years. As an example, an asset with a condition grade of 3 and a performance grade of 4 is estimated to have a remaining life of 4 years.

Table 3.3: Example renewal timing matrix

Example renewal timing matrix						
Performance grade	Condition grade					
		1	2	3	4	5
	1	60	50	40	30	7
	2	43	40	37	24	6
	3	22	19	14	9	2
	4	9	7	4	3	1
	5	4	3	2	1	0.5

Although the asset stewardship approach provides a reasonably sound engineering assessment of the state of the asset base, the approach has a number of weaknesses. Most notably:

- the gradings assigned for condition and performance are subjective and the approach to grading may vary between companies;
- the information which underpins the gradings and the assessment of remaining life may be of varying age and quality;
- there is no assessment of the level of service that the asset provides to customers; and

- there is no assessment of the risks associated with failure of the asset.

In addition, the approach tends to overestimate the requirement for capital maintenance. This is because it overlooks the operator's capacity to manage the assets in a strategic way.

Strategic asset management involves taking opportunities to:

- rationalise the assets (by assessing whether or not it is still required);
- adopt strategic solutions, by reorganising the network in order to reduce or remove the asset;
- use new technology; and
- implement cost-effective operational solutions to defer replacement.

Using strategic asset management when assessing the capital maintenance requirement will lead to a lower capital maintenance requirement than that which would be predicted using asset condition and performance grade analysis.

At the last Strategic Review of Charges, we accepted the capital maintenance requirement identified in *Quality and Standards II*. However, we also applied an efficiency target to it; this target included assessments of the scope for strategic asset management efficiency, and of opportunities for efficiency from improved procurement and innovation.

This approach was designed to allow the investment priorities established in *Quality and Standards II* to be delivered. We also highlighted the importance of improving Scottish Water's asset and customer service information.

3.6 Capital maintenance investment in England and Wales

In England and Wales, the reported level of capital maintenance expenditure in the period after privatisation

has remained relatively constant, at between 40% and 50% of total investment. Much of the investment in this period has been targeted at meeting EU directives on drinking water quality and environmental compliance.

Table 3.4: Capital investment in England and Wales

(2003-04 prices)	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04
Total investment (£ million)	3,073	3,752	4,154	4,031	3,958	2,897	3,077	3,508	3,662
Capital maintenance investment (£ million)	1,251	1,604	1,787	1,686	1,682	1,357	1,474	1,653	1,652
Percentage of total	40.7%	42.8%	43.0%	41.8%	42.5%	46.8%	47.9%	47.1%	45.1%

In the early years following privatisation, the companies' capital maintenance programmes were generally based on an asset stewardship approach.

The serviceability approach

In its 1994 and 1999 price reviews, Ofwat used a serviceability approach when assessing whether the level of capital maintenance investment by the companies was appropriate. This involved monitoring a set of defined asset and customer service performance indicators for each company. If these indicators were broadly constant, or marginally improving, then it was assumed that the historic level of capital maintenance spend was about right. If the indicators showed a decline in performance, this indicated that the company had historically been investing too little in capital maintenance.

Ofwat used serviceability as a measure of the asset performance of individual companies over time; not to compare one company with another.

The serviceability model monitors the following indicators.

Water infrastructure:

- the extent of low pressure problems;
- the number of mains bursts;

- the frequency and duration of interruptions to supplies; and
- quality compliance.

Water non-infrastructure:

- the number of water treatment works where enforcement action was considered because of contraventions of the coliforms standards; and
- the percentage of the total number of water samples containing coliforms taken at water treatment works.

Wastewater infrastructure:

- properties flooded because of insufficient sewer capacity;
- number of sewer collapses; and
- number of pollution incidents occurring at combined sewer overflows and sewers.

Wastewater non-infrastructure:

- number of sewage treatment works failing numeric consents; and
- the percentage of equivalent population served by non-compliant works failing look-up table consents.

At the last Strategic Review of Charges we were not able to use the serviceability approach because we did not have sufficiently good quality information about the assets. In particular, we did not have reliable information about asset performance and customer service levels. In their annual returns, the three former water authorities provided only limited information about the condition and performance grades of the assets.

Challenges to the serviceability approach

At the 1999 price review, a number of the companies in England and Wales asked for significant increases in the level of capital maintenance allowed. Ofwat determined that the level of capital maintenance did not need to increase because the serviceability indicators showed no material deterioration in levels of service to customers in the preceding five years.

Ofwat argued that the companies had not justified either the need for increases over the existing levels of expenditure or the economic rationale for increases. Ofwat commented further that “Age, condition and performance of individual assets are matters for the management of companies to consider in prioritising their capital maintenance programmes.”⁸

Two of the smaller water only companies, Sutton & East Surrey Water and Mid Kent Water, challenged Ofwat’s 1999 price determinations. Both argued that Ofwat had not allowed sufficient funding for capital maintenance. The cases were referred to the Competition Commission. It broadly supported Ofwat’s determinations for both companies. However, the Commission did criticise the serviceability approach. The Competition Commission’s final reports on the two referrals said:

- Whilst there is a logic to the Ofwat approach, it does not give the water companies confidence that serviceability to customers can be maintained without a risk of a significant backlog of expenditure occurring.
- Ofwat’s own surveys have shown that security of essential supply is one of customers’ main concerns. Although customers also want reduced prices, they do not want them at the risk of deteriorating security of supply.
- In this case, it is possible that the present Ofwat approach may risk reduced reliability of supply.⁹

Prior to the Competition Commission’s decision, Ofwat issued a letter, MD161¹⁰, to all of the water and sewerage companies and water only companies in England and Wales. The letter set out the information that Ofwat considered would need to be included in any case for increased capital maintenance. This information included:

- the cost of any potential loss of serviceability to customers, including consideration of risk scenarios

and their probabilities, as well as illustrations of how serviceability to customers would decline, if the activity was not undertaken;

- the impact of operating cost of capital maintenance activity, before and after assets are renewed;
- the circumstances surrounding the timing of asset replacement;
- the impact of obsolescence and new lower cost technology; and
- the underlying financial assumptions.

In MD161 Ofwat stated that there would need to be a greater understanding of the economic case for the levels of capital maintenance expenditure and that for the 2004 review it would need systematic information on all of the issues set out above.

The Competition Commission agreed with Ofwat’s view, as outlined in MD161, that there was a need for greater understanding about the relationship between serviceability and asset condition. It also stated that Ofwat should give more support to the companies’ efforts to research, develop, test and implement appropriate asset management systems.

Ofwat proposed a collaborative approach to addressing the concerns of the industry about capital maintenance. The industry commissioned UK Water Industry Research (UKWIR) to devise a more strategic, ‘top-down’ approach to assessing capital maintenance. The result was the ‘Common framework for capital maintenance planning’, which is discussed in more detail in section 3.8.

3.7 Ofwat’s approach to capital maintenance at the 2004 price review

Ofwat set out a four-stage approach to assess the companies’ capital maintenance requirements in the 2005-10 regulatory control period. The approach is

⁸ Ofwat, ‘Draft determinations: Future water and sewerage charges 2000-05’, page 98.

⁹ Competition Commission, ‘Mid Kent Water plc; A report under sections 12 and 14 of the Water Industry Act 1991 – Appendix 6.2 Historical capital maintenance and serviceability’, page 5.

¹⁰ Ofwat, MD161, ‘Maintaining serviceability to customers’, 12 April 2000.

broadly similar to that used in the 1999 review, but includes a forward-looking, risk-based methodology, consistent with the UKWIR common framework approach. The four stages are:

Stage A Maintaining serviceability to customers to date

This involves understanding past performance, trends from the serviceability indicators, and company actions necessary to address serviceability issues. This 'backward looking' assessment is mainly informed by the serviceability indicators.

Stage B Is the future period different?

This involves understanding what would be different about the next regulatory control period that would necessitate changes in the typical levels of activity that have been sufficient in the past. This element is informed by the company's assessment of its economic level of capital maintenance. This should be based on the UKWIR approach and should be both forward-looking and risk-based.

Stage C Scope for improvements in efficiency

This involves assessing the relative efficiency of each company in terms of its approach to capital maintenance and capital works, its capital/operating expenditure balance and the potential for each company to improve its efficiency over the next price review period. This uses Ofwat's established approaches for determining relative efficiency and assessing each company's scope for further efficiency improvements.

Stage D Impact of the enhancement programmes

This requires an understanding of the implications of each company's quality investment programme on the base capital maintenance programme. This is informed by an assessment of whether the quality programme defers or removes the requirement for capital maintenance expenditure.

While Ofwat recognises the potential difficulties that the companies might have in implementing the common framework approach fully, it believes that the approach will bring benefits in the long term.

In the next section we review the UKWIR approach in more detail before discussing the methodology we propose to employ in the *Strategic Review of Charges 2006-10*.

3.8 UKWIR common framework for capital maintenance planning

The UKWIR common framework for capital maintenance was developed with support from Ofwat, the Drinking Water Inspectorate, the Environment Agency, the Water Industry Commissioner for Scotland and the Department for Environment, Food and Rural Affairs. The UKWIR member Water Service Providers also participated actively¹¹.

Its aim is to provide a standard methodology for estimating the future requirement for capital maintenance. The framework provides a consistent approach to the assessment of the investment required to provide defined levels of service to customers and the environment. It is not a prescriptive methodology but a framework within which water and sewerage providers can develop their own approach to defining and prioritising capital maintenance investment.

The common framework represents a move away from the previous practice of using condition and performance grades to estimate remaining asset lives. It is based upon the principle of 'serviceability'. The overview to the common framework defines serviceability as the asset's "capability to provide service, which may not be the same as the actual service delivered. For example, a new treatment works which is being operated incorrectly may be 'serviceable', but is not providing 'service'."¹²

The common framework emphasises the importance of using both levels of service indicators (such as drinking water quality) and asset performance indicators (such

¹¹ UKWIR, 'Capital maintenance planning – A common framework, Volume 1: Overview', page (i).

¹² UKWIR, 'Capital maintenance planning – A common framework, Volume 1: Overview', page (iii).

as the number of sewer collapses) to understand the overall serviceability of the assets.

It also equates the risk of failure of an asset (via a risk index) with a corresponding level of capital maintenance expenditure. This allows the cost of ensuring that an asset can deliver a predetermined level of service to customers to be quantified.

The probability, consequence and cost of failure is quantified for each asset (using a combination of historical data and expert judgement). This analysis enables the impact on cost and levels of service of not undertaking proactive capital maintenance to be estimated. The consequence of failure is quantified in terms of its impact on the serviceability indicators.

The cost and impact of intervention (ie capital maintenance and/or operational changes) is also identified. The common framework approach therefore enables the costs of asset failure to be compared with the cost of the intervention. The impact of proactive capital maintenance expenditure can also be quantified in terms of the beneficial impact on levels of service to customers and the environment.

It is important to note that the common framework is specifically designed to provide sufficient flexibility to companies to allow for individual factors to be taken into account. It can also be implemented even if there are issues about the quantity and quality of asset and levels of service information.

We support the use of the common framework approach to capital maintenance. Throughout the *Quality and Standards III* process, we have encouraged Scottish Water to adopt the principles of the framework in developing its capital maintenance proposals. In the *Strategic Review of Charges 2006-10*, we will review Scottish Water's use of the common framework approach to establish its requirement for capital maintenance.

3.9 Our proposed approach to capital maintenance in the Strategic Review of Charges 2006-10

In assessing Scottish Water's capital maintenance requirements in the *Strategic Review of Charges 2006-10*, we will take account of:

- ministerial guidance on the overall objectives of the investment programme;
- the capital maintenance requirement identified in the *Quality and Standards III* process;
- the capital maintenance requirement identified in Scottish Water's first and second draft business plans; and
- the Reporter's assessment of Scottish Water's capital maintenance proposals.

We will also review Ofwat's comments on the companies' plans for capital maintenance in its final determination.

We will not be able to use Ofwat's serviceability approach because of the limited information available on assets and customer service. We will seek to ensure that regulatory returns are adapted to capture the information required for a serviceability model. This work will be completed in time for the *Strategic Review of Charges 2010-14*.

Our approach to assessing the requirement for capital maintenance can be divided into three stages:

Stage 1 Review of capital maintenance spending and the condition and performance of the asset base

We will update our analysis of the historic levels of funding for the industry in Scotland and draw comparisons with England and Wales. We will seek to establish whether funding levels in Scotland have historically been lower than south of the border.

We will also review our analysis of the condition and performance grades of the assets in Scotland. This will allow us to assess the level of capital maintenance that is required in Scotland.

Stage 2 An assessment of Scottish Water’s capital maintenance proposals contained in its first and second draft business plans

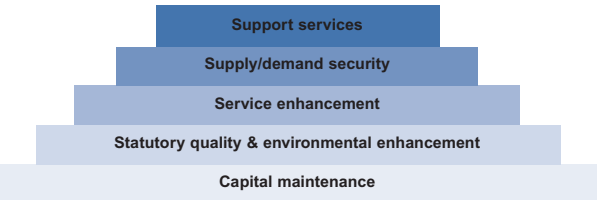
We will analyse Scottish Water’s capital maintenance proposals to establish:

- whether the proposals match the ministerial guidance;
- whether Scottish Water has followed best practice – we will analyse whether Scottish Water has adopted techniques consistent with the UKWIR common framework approach and best practice asset management;
- the validity of assumptions underpinning Scottish Water’s proposals;
- the accuracy of Scottish Water’s costing process; and
- the extent of overlap between the capital maintenance proposals and other elements of the investment programme.

We have provided the Reporter with detailed guidance covering the key issues on which we believe he should focus during his audit of Scottish Water’s first and second draft business plans.

We will scrutinise the investment programme carefully to ensure that the investment in drinking water quality, environmental improvement and improved customer service has been costed on an incremental basis. This approach is illustrated in Figure 3.2.

Figure 3.2: Incremental approach to investment costing



Capital maintenance is essential to maintaining the existing level of service to customers. It should therefore be the foundation of any investment programme. Statutory improvements to water quality and environmental performance should then be costed on an incremental basis. Such costing should take full account of any opportunity for optimisation and/or synergy with the capital maintenance programme.

This incremental approach will ensure that customers do not pay twice for the same output.

Stage 3 The scope for efficiency in delivery of the capital maintenance programme

Our proposed methodology for determining the scope for capital maintenance is discussed in detail in Chapter 13. In brief, it will include the following stages:

- an assessment of the level of capital maintenance expenditure required by Scottish Water, given its current asset base. This assessment will be carried out using Ofwat’s capital maintenance econometric models;
- an adjustment to the required level of capital maintenance expenditure to take account of any circumstances specific to Scotland that could affect Scottish Water’s costs; and
- an assessment of the scope for efficiency.

Our assessment of Scottish Water’s capital maintenance programme will seek to establish whether the proposals are based on robust information and best practice techniques.

If Scottish Water’s proposals are not based on robust information we would propose to limit capital maintenance expenditure to maintaining asset performance and customer service. Scottish Water would have to justify any additional capital maintenance expenditure on the basis of defined asset performance or customer service improvement.

3.10 Summary

Capital maintenance expenditure is a major component of Scottish Water's capital programme. This expenditure is essential to maintaining the performance of the network, through replacing assets at the end of their lives.

A range of techniques exist for establishing the appropriate level of capital maintenance expenditure. Best practice is defined in the UKWIR common framework for capital maintenance. An efficient and effective capital maintenance programme also relies on robust asset information and good asset management techniques.

In the *Strategic Review of Charges 2006-10*, we propose to allow a level of capital maintenance expenditure that provides sufficient investment to maintain the asset base in the long term and so ensure that present and future customers receive an acceptable level of service.

It is our belief that any capital investment above and beyond investment to maintain the asset base in the long term should be tied to measurable improvements in the service that is provided to customers or to other Quality and Standard priorities.

3.11 Questions for consultation

1. Do respondents agree that the UKWIR common framework approach for capital maintenance provides a suitable mechanism for establishing Scottish Water's capital maintenance requirements?
2. Do respondents agree that our three stage approach will allow us to establish whether Scottish Water's capital maintenance proposals are justified, well costed and meet best practice?

Section 1: Chapter 4

Implications of the quality programme

4.1 Introduction

In Chapter 2 we introduced the three major components of Scottish Water's capital investment programme: capital maintenance, quality enhancement and investment to meet future supply/demand requirements. In this chapter we discuss investment in quality enhancement.

Investment in improving the water quality and environment has, in recent years, been the largest driver of capital investment in the water industry in Britain. This is likely to continue for the foreseeable future. It is therefore essential to ensure that customers receive the benefit of this investment and that it represents good value for money.

In this chapter we examine the proposed investment in improving water quality and the environment. We look at the drivers of quality investment and discuss the recent levels of investment in quality enhancement both in Scotland and in England and Wales. We continue with a review of the proposed investment during the *Strategic Review of Charges 2006-10*. Finally, we discuss our proposed approach to reviewing Scottish Water's quality programme for 2006-10.

4.2 Importance of the quality programme for customers

As Chapter 2 explained, quality investment provides enhanced levels of customer service and environmental performance. This investment builds on the levels of service and performance delivered by capital maintenance investment. Quality investment is usually targeted at one or more of the following:

- environmental improvements, such as additional treatment of wastewater;
- improved drinking water quality, such as a reduction in the number of samples containing harmful bacteria; and

- increased levels of service for customers, such as reduced levels of sewer flooding.

Customer research¹ has highlighted the importance customers place on improving the environment and water quality. Legislative drivers, particularly from Europe, have also required investment to improve water quality and the environment. Investment in this category accounts for around 50% to 55% of total water industry investment in Scotland.

If customers are to receive value for money it is vital that this large quality investment programme is:

- properly defined – customers need to know which projects are being delivered and the environmental benefits, water quality improvements and/or customer service improvements that will result;
- accurately costed – if costs and benefits are to be properly assessed, accurate design and costing information is essential;
- effectively and efficiently delivered – this requires an assessment of the scope for efficiency and a rigorous approach to monitoring, including:
 - physical delivery of projects in the programme,
 - achievement of the required project output, and
 - Scottish Water's financial performance in delivering the project.

Each of these areas will be important in our assessment of the quality investment programme in the *Strategic Review of Charges 2006-10*.

4.3 Drivers of quality investment

The *Quality and Standards III* project defined the drivers for quality investment in the 2006-14 period. These drivers are listed in Annex B of the Scottish Executive's consultation on *Quality and Standards III 'Investing in water services 2006-14'*, published in July 2004².

¹ See, for example, MORI, Research into customer views, available at [http://www.ofwat.gov.uk/aptrix/ofwat/publish.nsf/AttachmentsByTitle/mori_report_151102.pdf/\\$FILE/mori_report_151102.pdf](http://www.ofwat.gov.uk/aptrix/ofwat/publish.nsf/AttachmentsByTitle/mori_report_151102.pdf/$FILE/mori_report_151102.pdf) and Scottish Executive Summary.

² Annex B covers environmental and drinking water drivers, which are classed as quality investment, and also water resource drivers, which would be categorised as supply/demand investment (as discussed in Chapter 5).

The consultation notes that compliance with prescribed standards for drinking water quality varies across Scotland and that particular issues exist in relation to compliance with the standards set for Lead and Trihalomethanes (by-products of the disinfection process). The Cryptosporidium (Scottish Water) Directions are an additional important driver (Cryptosporidium is a microscopic organism that can be harmful to humans).

The consultation describes the major environmental drivers: improving standards of wastewater treatment; protecting and improving the quality of bathing and shellfish waters; and protecting freshwater fish.

Customer service improvements are targeted at minimising the incidence of sewer flooding, increasing control of odour from wastewater treatment plants and reducing the number of properties that have insufficient water pressure.

The *Quality and Standards III* consultation document reveals that the majority of quality investment is required in order to comply with European legislation and national government policy.

European legislation

European legislation takes the form of Directives, which must then be incorporated into UK and Scots law.

Many pieces of European legislation have had an impact on the water industry in Scotland. Legislation passed from the mid-1970s to early 1980s mainly concerned water quality standards for rivers and lakes used for drinking water abstraction. Binding standards were set in 1980 for drinking water quality. Legislation was also passed that covered fish waters, shellfish waters, bathing waters and groundwaters.

Emissions were controlled through the Dangerous Substances Directive (1976). This was followed by more stringent regulations in the 1990s. These include the Urban Waste Water Treatment Directive (1991), the Integrated Pollution Prevention and Control Directive (1996) and the Drinking Water Directive (1998).

More recently, the Water Framework Directive (2000) will lead to a further increase in standards. This Directive encourages a more holistic approach to water management. It brings together existing legislation and tightens standards in other areas. The aim is to encourage more integrated water resource management, with greater stakeholder involvement. The *Quality and Standards III* consultation notes that considerable investment will be required to meet the objectives of the Water Framework Directive.

Under the Directive, EU countries must develop river basin management plans, through a stakeholder consultation process. These plans should set out in detail how the country will meet the mandatory standard of 'good' status for all waters.

Countries can derogate from some standards in certain situations, for example:

- where there are overriding policy objectives (such as flood prevention);
- where there are no technical alternatives;
- where they are prohibitively expensive; and
- where they produce a worse overall environmental result.

National government legislation

Some compliance targets are set through national (UK and/or Scottish) legislation. This is generally associated with situations where national policy is more stringent than that specified by European Directives.

An example of this is the Cryptosporidium (Scottish Water) Directions (2003). These directions seek to reduce the incidence of Cryptosporidium in drinking water. There are no specific provisions in European Directives in relation to Cryptosporidium and it is for individual countries to assess the risks and to establish their own legislation.

National policy and regulatory guidance

Scottish Water may face requests from regulators to achieve higher standards than are strictly required by law. These requests may be the result of local conditions or local policy. Such policy is subject to ministerial guidance.

It is important for the delivery of an efficient water and wastewater service that Scottish Water agrees the scope and timing of these obligations with the relevant regulators and government bodies. Investment to improve standards beyond the mandatory minimum can be incorporated at relatively low cost if the investment is timed to coincide with other capital maintenance or quality investment.

Compliance with all legislation and government policy is monitored by:

- the Scottish Environment Protection Agency (SEPA) – for the protection of the environment and water resource management; and
- the Drinking Water Quality Regulator (DWQR) – for water quality and public health.

SEPA and DWQR were key to the development of the required outputs for the quality investment programme.

Customer service improvement

Quality investment may also be required to improve the level of service provided to customers. This is recognised within the Scottish Executive's *Quality and Standards III* consultation 'Investing in water services 2006-14'. It sets out 'other priorities for the customer' as including the following:

- Odour from wastewater treatment works

Traditionally, odour control has not represented a major driver for investment. However, in recent years, a variety of factors have led to increased customer concerns, including:

- increased awareness of public health issues;
- higher levels of wastewater treatment; and
- development of housing close to wastewater treatment works.

The measures required to reduce odour issues can vary from relatively simple operational measures, such as increased maintenance, to expensive investment in screening and air treatment.

- Sewer flooding

Although the incidence of sewer flooding is relatively rare, it is nonetheless unpleasant for those customers who have the misfortune to experience it. It can be caused by:

- lack of network capacity, particularly to cope with storm flows;
- blockages or collapses in the sewer; and
- local flooding.

Solving sewer flooding issues often requires an integrated approach to all drainage within catchments, be it rivers, culverts, road drainage or sewers. This can be technically complex and may require joint funding solutions from a range of parties, including local authorities, Scottish Water and local land owners.

- Water pressure

Low water pressure can cause particular issues with appliances such as boilers and electric showers, as well as causing general inconvenience to customers. The cost of solutions varies and increasing the pressure within the water network can bring other problems, such as higher levels of leakage and more bursts.

We would expect Scottish Water to include investment for improvements to customer service provided:

- there is a clear and measurable customer demand;
- the investment is properly targeted and is cost effective; and
- customers as a whole are willing to pay the incremental cost.

In the *Strategic Review of Charges 2006-10* we will examine Scottish Water's quality investment proposals to ensure that these criteria are met.

4.4 Funding the quality programme

We believe that it is important that each generation pays for the use they make of the asset base. In our recent publication '*Our work in regulating the Scottish water industry: The calculation of prices*³', we explained our proposals to move to a regulatory capital value (RCV) approach to assessing price caps. One of the advantages of this approach is that it is more transparent, because one generation does not subsidise another.

In calculating the required revenue for Scottish Water, we take account of the annual depreciation on non-infrastructure assets (for both existing and new assets). We explained that this depreciation will be calculated using standard asset life categories. These are illustrated in Table 4.1.

Table 4.1: Standard asset lives and depreciation

Asset life category	Expected life (years)	Annual depreciation rate (%)
Very short	5	20%
Short	10	10%
Medium	20	5%
Medium/long	40	2.5%
Long	60	1.7%

For example, if Scottish Water were to add £50 million of medium/long life assets through the quality investment programme, then for the following 40 years Scottish Water would be allowed to collect £1.25 million (in real terms) from customers. In this way customers pay for the assets while those assets provide a service.

Scottish Water will also be allowed to collect the financing costs of its investment through a cash return on the RCV. Customers therefore pay each year both for the use they make of the asset base and for the cost of financing the asset base.

4.5 Quality investment in the water industry in Scotland

In Chapter 2 we described the Quality and Standards process, which determines investment priorities for the water industry in Scotland. We explained that the first Quality and Standards process covered the period April 2000 to March 2002. This was the first time that an integrated investment programme had been developed for the Scottish water industry.

We noted, however, that there was a lack of definition of the outputs required from *Quality and Standards I*. In our '*Investment and asset management report 2000-02*' we explained that around 52% of the total of £976 million of *Quality and Standards I* investment related to quality investment (the remainder related to capital maintenance and supply and demand).

Quality and Standards II defined the quality investment programme in more detail. The 'WIC 18' project list⁴ indicates that quality investment accounts for around 50% of the total £1.8 billion spend, comprising around 1,200 projects.

The figures indicate that actual and forecast investment in improving the water quality and environmental performance of the water industry in Scotland is running at around £220 million per annum. Over the period of the Quality and Standards programme, it has consistently represented around half of total investment.

Quality and Standards III has confirmed that this level of investment in water quality and environmental performance is likely to continue for the foreseeable future. In its *Quality and Standards III* consultation, the Scottish Executive states⁵:

"What is certain, is that substantial expenditure on the improvement of the water environment will be required for very many years to come, for Quality and Standards III and beyond."

³ Volume 3 – *Our work in regulating the Scottish water industry: The calculation of prices*.

⁴ WIC18 : Quality and Standards Final Output – 30 May 2001.

⁵ Scottish Executive, *Investing in water services 2006-14*, page 31.

It is therefore important for customers that we seek to ensure that these quality improvements are delivered efficiently.

4.6 Quality investment in the water industry in England and Wales

In England and Wales the companies submit investment and asset management plans with their business plans. These are based on guidance from Ministers and the detailed requirements of the Environment Agency and Drinking Water Inspectorate.

Ofwat examines the total investment in England and Wales each year in its financial performance report⁶. It reports total investment split into categories of base, infrastructure renewals, quality⁷ and growth⁸. Table 4.2 sets out the quality investment in England and Wales since 1995-96.

Table 4.2: Quality investment in England and Wales

(2003-04 prices)	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04
Total investment (£ million)	3,073	3,752	4,154	4,031	3,958	2,897	3,077	3,508	3,662
Quality investment (£ million)	1,510	1,696	1,829	1,878	1,888	1,233	1,266	1,448	1,547
Percentage of total	49.1%	45.2%	44.0%	46.6%	47.7%	42.6%	41.1%	41.3%	42.2%

Quality investment in England and Wales in recent years has run at around 45% of total investment. This is slightly lower than the 50% of total investment that is reported in Scotland. There are a number of reasons why the reported quality spend in Scotland could be higher than that in England and Wales. These include:

- The increased spend on quality in England and Wales in the early 1990s, immediately following privatisation. This has left an element of 'catch-up' required in Scotland; and

- Differences in the way costs are allocated between 'capital maintenance' and 'quality expenditure'. For example, work associated with water mains renewal brings both capital maintenance and quality benefits.

Our assessment of Scottish Water's investment plan will include an analysis of its quality investment programme and a comparison with England and Wales.

As discussed in the previous chapter⁹, we believe that investment in capital maintenance should be the priority in any investment programme. Statutory improvements to water quality and environmental performance can then be costed on an incremental basis. This costing should take full account of any opportunities for optimisation and synergy with the capital maintenance programme.

4.7 Our approach to Scottish Water's quality investment programme

In assessing Scottish Water's quality investment proposals in the *Strategic Review of Charges 2006-10* we will take account of:

- ministerial guidance on the overall objectives of the investment programme, with particular reference to quality objectives;
- the quality investment requirements identified in the *Quality and Standards III* process;
- the quality investment requirements identified in Scottish Water's initial and final business plan submissions; and
- the Reporter's assessment of Scottish Water's quality investment programme.

We will require a detailed investment plan which defines:

⁶ Financial Performance and expenditure of the water companies in England and Wales

⁷ Quality is split into quality enhancement programmes and enhanced service levels.

⁸ Growth is called supply/demand.

⁹ Chapter 3, 'Capital maintenance', section 3.10.

- the projects that comprise the programme, by asset;
- the outputs that each project will deliver;
- the expected costs for each project; and
- expected delivery dates.

Our business plan guidance specifies the format of this investment plan. The format of the investment plan is included at Appendix 1.

The Reporter's assessment of Scottish Water's quality investment proposals will form a key part of our analysis. We have provided detailed guidance to the Reporter on the particular areas we wish his audit of the quality programme to address. These include an assessment of:

- whether Scottish Water has provided a consistent interpretation of legal obligations and the ministerial guidance;
- whether Scottish Water has included all of the agreed requirements of the quality regulators – we have also asked the Reporter to comment on Scottish Water's challenge of quality obligations placed on it by the quality regulators as part of *Quality and Standards III*; how Scottish Water has interpreted the Water Framework Directive and other key legislation which impact significantly on costs;
- the design criteria used by Scottish Water and whether these are consistent with the criteria used to develop the standards;
- Scottish Water's costing process;
- whether the additional operating costs identified from the quality programme are additional, reasonable and have been applied consistently;
- whether Scottish Water has costed the quality programme in an incremental way, taking full account of any optimisation and synergy benefits; and

- cost estimates for defined projects.

We will also assess the scope for efficiency in delivering the quality programme. This is discussed in greater detail in Chapter 14. We will also examine the phasing of the overall investment programme to ensure that it is deliverable.

4.8 Summary

In recent years, investment in the water industry in Scotland to improve water quality, the environment and customer service has accounted for around 50% of the capital investment. This equates to £220 million, or £95 per customer annually.

Much of this investment has been driven by EU legislation for improved water quality and environmental standards. Investment at this level will continue throughout *Quality and Standards III* and for the foreseeable future. This level of investment cannot be considered as a short-term 'peak'.

It is in the customer interest to ensure that Scottish Water's quality investment proposals are:

- properly defined;
- accurately costed; and
- effectively and efficiently delivered.

In the *Strategic Review of Charges 2006-10*, we will examine Scottish Water's quality investment proposals in detail to ensure that they are justifiable, accurately assessed and meet the requirements laid down by the Minister and the relevant regulators.

4.9 Questions for consultation

1. Do respondents agree with our proposed approach to assessing Scottish Water's quality investment programme?
2. Are there other factors that we should take into account to ensure customers receive value for money?

Section 1: Chapter 5

Investment to balance supply and demand

5.1 Introduction

Customers expect the water supply system to deliver clean water to their homes and places of work as and when they require it. They also expect the sewerage system to remove and treat their wastewater, to drain public areas, and to protect them from flooding by surface run off.

In order to meet these expectations, Scottish Water must invest in its water and wastewater capacity. It must also ensure that it is able to meet reasonable demand for those services.

The capital investment required to achieve these objectives places a significant upward pressure on prices. Customers, however, are concerned that water and sewerage services are provided to them at an affordable price. It is therefore essential that the investment that Scottish Water makes in the water and wastewater capacity is carried out in an efficient way. Investment planning is critical to the efficient delivery of Quality and Standards outputs.

During the current regulatory control period there have been increasing complaints from stakeholders about development constraints. Such development constraints may be controlled through better management of the supply and demand balance.

5.2 Investment in the water supply

5.2.1 The issues

The basic water resource problem that Scottish Water faces is to match the supply and the demand for clean water. This involves forecasting future demand for water, then comparing the forecast with the capacity of the existing water supply system. If the existing capacity is insufficient to meet forecast customer demand then the planner must find a solution that will close the gap. Forecasting demand is a complex process for a number of reasons:

- Demand can be highly variable:
 - Demand varies over time, in the short term as a result of changes in the seasons or changes in the weather, and in the long term as a result of trends (both growth and decline) in the population and the economy.
 - Demand also varies by location; demand in certain locations may be very high and in others it may be low. Over time, even if total demand stays constant, the pattern of demand may vary considerably, with demand rising in some areas and falling in others.
- Supply can also be highly variable:
 - The water supply capacity of existing assets can vary over time. Within a year, seasonal changes in the weather have an impact on how much water is available from a particular source. Variations in the weather between years also have an impact, and in the long term the climate itself may be changing.
- Forecasts of supply and demand are uncertain:
 - Demand may turn out to be higher, or supply may turn out to be lower, than forecast. Where this happens, it is important that customers receive the water they demand, as long as the situation is not extreme (for example, during a period of extended drought). In order to have spare capacity, planners allow for an additional supply or 'headroom'; this spare capacity is expensive to provide, so must be set at an appropriate level. Establishing an appropriate level requires detailed technical and economic analysis.

Scottish Water's approach to water resource planning

It is important that expenditure to address supply/demand issues is efficient. It is not efficient to invest in the water supply system simply to 'be on the safe side'; water resource planners must balance the requirement to maintain sufficient resources with the need to avoid unnecessary investment.

There is some evidence that the approach taken by the water industry to water resource planning may not have been economic in the past:

- Scottish Water's regulatory returns suggest that, given the volume of water that is supplied, asset replacement costs are very high for the water supply system in Scotland. Around £800 million was allowed in *Quality and Standards II* for asset replacement costs. Similarly, pumping costs in Scotland are very high in relation to the amount of water that customers demand.
- The water treatment capacity in Scotland is high relative to the volume of water that customers demand. Scottish Water has the capacity to treat 3500 Mld of water. Scottish Water estimate customer demand at 1360 Mld.
- The reported level of leakage in Scotland is also high. Although there is considerable uncertainty about the true level of leakage, best estimates suggest that nearly half (48%) of all treated water is lost through leakage. This is high relative to average levels in England and Wales (leakage levels for companies south of the border vary between 15% and 35%).

This evidence might suggest that customers in Scotland are paying for a water supply system that is expensive and inefficient. This is not to ignore other explanations for the relatively high cost of the water supply system in Scotland¹.

5.2.2 Why might costs of water supply be high in Scotland?

Several explanations could be put forward as to why water supply costs, and in particular asset replacement costs, are high in Scotland.

- Some might assert that Scottish Water's asset base contains a high proportion of ageing and worn out assets. However, our 'Investment and asset management' reports examine this issue and have

shown that the condition and age of the assets in Scotland are comparable with those south of the border (see Chapter 6 for further information).

- Scottish Water may be inefficient in carrying out its asset replacement programme (that is purchasing new assets and putting them in place). There is evidence of such inefficiency in Scotland².
- Finally, it could be that the Scottish water industry has not been efficient in its approach to the supply/demand balance. Although Scottish Water is constrained by the networks it inherited, the decisions it takes about replacing and refurbishing its assets have an impact on the economic efficiency of the network. For example, by reducing leakage it may be possible to reduce future expenditure on treatment and pumping capacity.

5.2.3 An economic approach to water resource planning

Water resource planning should be carried out on an economic basis. This means that the water resource planning process should be driven by the likely cost to customers and to the environment of different supply/demand planning solutions. An economic solution seeks to minimise these costs.

An economic approach should include the following elements:

- A detailed description of the planning problem. This should cover a sufficiently long planning period, typically a minimum of 20 years. It should also be sufficiently detailed to include any forecast shortages at particular times in particular locations;
- A comprehensive review of the options for balancing supply and demand. This includes possible resource options, pricing policies and leakage reduction schemes. The potential contribution of each of these options should be identified, along with a proper assessment of their costs, taking account of financial, environmental and social elements (such as

¹ See Volume 4, Chapter 5.

² See WIC 5.

the disruption caused to local people by building work for a new treatment works);

- An analysis of risks. The approach should show how risks have been taken into account; and
- A demonstration that the water resource planning solution minimises the overall cost of matching supply and demand.

In making decisions, both about existing and new demand, Scottish Water should adopt an economic approach, whereby choices are made with reference to the costs for customers and for the environment.

High levels of investment to replace the assets, or high levels of leakage, can only be justified by Scottish Water on the basis of detailed economic and cost benefit analysis.

5.2.4 Our proposed approach

We will assess Scottish Water's approach to water resource planning as part of the *Strategic Review of Charges 2006-10*. Our assessment will consider whether or not Scottish Water has adopted an economic approach. For example, we will require evidence that a comprehensive range of supply/demand balance options has been considered and that the costs of these have been properly estimated.

Our assessment will contribute to our understanding of the efficient level of capital and operating costs for Scottish Water.

Our analysis of water resource planning will at the same time influence our views about the role that might be played by the supply/demand policies that Ofwat adopts for the companies in England and Wales, including the use of targets to reduce leakage. If there is a case for setting such targets, we would propose to introduce these as part of this Strategic Review of Charges.

5.3 Investment in the wastewater system

5.3.1 The issue

The basic wastewater planning problem that Scottish Water faces is to match supply and demand for sewerage and sewage treatment services. This involves forecasting future needs for sewerage and sewage treatment, then comparing the forecast with the capacity of the existing sewerage and sewage treatment system. If the existing capacity is insufficient to meet the customers' forecast need (demand) then the planner must find a solution that will close the gap.

Balancing supply and demand for wastewater services is a complex process for the following reasons.

- Demand can be highly variable:
 - The wastewater produced by homes and businesses can vary, along with the demand from these customers for clean water. Of yet more significance is the impact on demand that the weather can have. Storm conditions produce run-off from hard surfaces that finds its way into the sewerage system. Sewage treatment facilities must be designed to cope with such additional flows.
- Supply can be highly variable:
 - In storm conditions, wastewater treatment works can become overwhelmed with wastewater flows. Wastewater will then spill through 'combined sewer overflows' or be discharged directly. As a result, the works will fail to meet their discharge standards.
- Forecasts of demand are uncertain:
 - The variation in volumes of wastewater that enter the sewerage system because of changes in weather conditions far outweighs any uncertainty about the volume of wastewater discharged by households and businesses. That said, there is scope for uncertainty in terms of the 'load', or content, of discharges by businesses. Different industries and different industrial processes produce different waste products. These have an impact on the type of wastewater treatment processes that are required at treatment works.

Scottish Water's approach to wastewater treatment planning

Scottish Water must take account of these factors in trying to ensure that reasonable customer demands are met. It cannot, however, invest in the capacity of its sewerage and sewage treatment system just to be on the safe side. Wastewater services must be supplied at as low a sustainable price as possible.

There is some evidence that the approach taken by the water industry in Scotland to wastewater supply-demand balance planning may not have been economic. Developers have argued that there are physical constraints at some points on the sewerage and sewage treatment network. These constraints include a lack of the following:

- availability of the physical connection from the development to the sewerage system;
- capacity on the existing local sewerage network; and
- capacity at the existing wastewater treatment works.

Developers argue that these constraints prevent them from developing new housing and commercial premises. *Quality and Standards II* earmarked funds to address some of these development constraints; it is likely that *Quality and Standards III* will earmark further funding to addressing these constraints.

5.3.2 Why might the cost of sewerage be too high?

There are two possible reasons why sewerage costs, and in particular the cost of new connections, are high in Scotland:

- It could be that Scottish Water has considered a full range of wastewater service options and selected an economic approach. If the level of demand for sewerage and sewage treatment services is very high relative to existing capacity, the efficient cost of providing these services is high and developers are receiving a valid price signal.

- Alternatively, it might be that Scottish Water has not considered a complete range of possible solutions to the problem of meeting demand for sewerage services. If the demand for wastewater services is being addressed with high-cost solutions, development constraints caused by a lack of wastewater capacity might be relieved by better planning.

An economic approach to wastewater service planning

Wastewater service planning should be carried out on an economic basis. The approach should include the following elements:

- A detailed description of the planning problem. The possibility that there are development constraints in Scotland suggests that this analysis should be detailed and should include the different elements of wastewater service provision, ie local networks, sewerage mains and wastewater treatment works;
- A comprehensive review of the possible options for balancing supply and demand. This includes identifying options that might relieve pressure on wastewater treatment works, such as alternative urban drainage systems and pricing policies. The potential contribution of each of these options should be identified, along with a proper assessment of their costs, taking account of financial, environmental and social elements;
- An analysis of risks associated with individual options and with the solution as a whole; and
- A demonstration that the waste water service planning solution minimises the overall cost of matching supply and demand.

Adopting an economic approach to wastewater supply/demand planning is important in the context of meeting both existing demand and new demand. This is because different approaches to providing wastewater solutions, whether for existing or new demand, will have different cost consequences.

5.3.3 The proposed approach to wastewater supply/demand planning

We will assess Scottish Water's approach to sewerage and sewage treatment planning as part of the *Strategic Review of Charges 2006-10*. This assessment will consider whether or not Scottish Water has adopted an economic approach. For example, we will require evidence from Scottish Water that a comprehensive range of wastewater supply-demand balance options has been considered and that the costs of these have been properly estimated.

If we identify weaknesses in the planning process, we will consider their impact on the capital replacement and refurbishment policies that have been adopted by Scottish Water. We will also consider their impact on the 'development constraint' problems that have been reported by developers. This assessment will contribute to our understanding of the efficient level of capital and operating costs for Scottish Water.

5.4 Questions for consultation

1. Do respondents agree with our proposed framework for assessing Scottish Water's water resource and sewerage and sewage treatment planning?
2. Are there other factors that we should take into account to ensure customers receive value for money?

Section 2: Chapter 6

Capital expenditure in the Scottish water and wastewater industry

This chapter starts by considering the nature of the assets in Scotland. It then examines historic levels of capital investment in the water industry in Scotland. We also consider progress to date in delivering the *Quality and Standards II* investment programme.

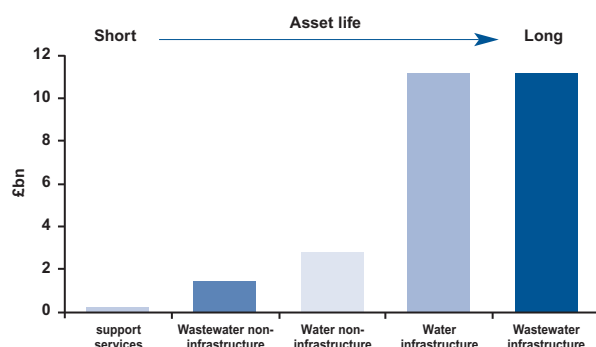
6.1 Water and wastewater assets in Scotland

In Chapter 3 we explained that the range of assets required to deliver a water and wastewater service can be divided into five broad types:

- water infrastructure;
- water non-infrastructure;
- wastewater infrastructure;
- wastewater non-infrastructure; and
- support services.

Scottish Water's assets are, in general, characterised by long life assets, as Figure 6.1 illustrates. This has an impact on decisions about the investment requirements for the business; long-term planning is required to ensure that the assets are maintained for future generations.

Figure 6.1: Replacement cost and asset life by type of asset



Comparison with England and Wales

It is useful to compare the physical size of Scottish Water's asset base with that of the ten water and wastewater companies in England and Wales. This provides an indication of the relative scale and complexity of the assets.

For ease of comparison, given some differences in reporting formats between Scotland and England and Wales, we have focused on the four main components of a water and wastewater company's asset base, namely water treatment works, water mains, wastewater treatment works, and sewers.

These comprise more than 80% of the replacement cost of the total asset base.

Table 6.1: Comparison of the asset base

	Scottish Water	Ranking	Water and wastewater companies in England and Wales		
			Smallest	Mean	Largest
Length of water mains (km)	46,508	1st	11,226	27,706	45,674
Length of main per property (m)	18.74	5th	9.07	15.94	21.10
Length of sewers (km)	44,854	3rd	8,820	30,573	67,151
Length of sewer per property (m)*	13.34	7th	11.93	13.68	14.85
Number of water treatment works	371	1st	33	102	154
Number of wastewater treatment works**	616	4th	349	630	1,071

* Excludes lateral sewers as they are not part of the sewer network in England and Wales.

**Excludes 1,220 very small public septic tanks installations, which are uncommon in England and Wales.

Scottish Water is responsible for a larger geographic area than any of the water and wastewater companies in England and Wales. However, the total length of water main is not materially greater than that of some of the companies in England and Wales. This no doubt reflects the fact that a high proportion of the Scottish population lives in the central belt and in coastal communities.

A similar picture emerges when comparing the length of sewer networks either side of the border. Of the UK water and wastewater companies, Scottish Water ranks third for the total length of its sewers¹. Clearly, a larger

¹ This is despite the fact that differences in legislation in Scotland mean that, unlike in England and Wales, Scottish Water has responsibility for the parts of the sewer network, termed 'laterals', which run between the main sewer and the edge of customers' properties. These laterals account for around 10,000km of the total sewer length.

geographic area does not mean that there is a larger sewer network.

There are significantly more water treatment works in Scotland than in England and Wales. This can in part be attributed to the large number of small rural communities, particularly around the coastline in the north. However, of the 371 works in Scotland, 240 fall into the smallest reported category, with a capacity of less than 1 megalitre per day. This may indicate that in Scotland a less proactive approach has been taken to rationalising works. This has a potential impact on customers by increasing costs and making water quality management more complex.

Of the 1,836 wastewater treatment works in Scotland, 1,220 are very small public septic tank installations. These are relatively uncommon in England and Wales. Excluding these septic tanks, the number of wastewater treatment works in Scotland is similar to the number for companies in England and Wales.

In summary, the asset base that Scottish Water operates is broadly similar in size and composition to that of the water and wastewater providers in England and Wales. The challenges that Scottish Water faces in managing this large portfolio of assets are significant, but are not materially different from those faced by companies south of the border.

In Chapter 3 we described our proposed, three-stage approach to assessing Scottish Water's capital investment requirement. This approach considers each of three investment drivers and ensures that investment in improving the quality of service to customers has already taken account of capital maintenance. Similarly, the response to customers' changing demand patterns should take account of both capital maintenance and quality investment².

6.2 Historic investment in Scotland

Investment in the water industry in Scotland began to increase significantly after the three former water authorities were established in 1996.

Considerable use was made of Private Finance Initiative (PFI) schemes in the late 1990s to deliver the investment required to comply with the Urban Waste Water Treatment and the Bathing Waters Directives.

PFI investment is repaid over a number of years through an annual charge, rather like a loan or mortgage. This means that effective investment in the water industry in Scotland in recent years is higher than might first appear when examining the figures for direct capital investment. We take account of this in our analysis of historic investment levels.

When comparing investment levels in Scotland with those in England and Wales, we also need to take account of the relatively poor capital efficiency of the industry in Scotland. By 'efficiency' we mean that the same, or a better, investment output is delivered for less money. Actual cash expenditure in Scotland needs to be adjusted for inefficiency³ so that a fair comparison can be made with investment by companies with higher efficiency.

Table 6.2 reconciles the actual direct investment in the water industry in Scotland with the effective efficient investment spending that has benefited customers.

Table 6.2: Total investment 1996-2004⁴

Year	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04
Direct capital investment	£252m	£277m	£346m	£397m	£428m	£460m	£353m	£389m
Investment delivered through PFI	£3m	£15m	£15m	£136m	£170m	£126m	£65m	-
Total investment	£255m	£292m	£361m	£533m	£598m	£586m	£418m	£389m
Assessed capital inefficiency	£60m	£78m	£107m	£139m	£163m	£175m	£128m	£141m
Total efficient effective investment	£195m	£214m	£254m	£394m	£435m	£411m	£290m	£248m

² See Chapter 5.

³ PFI investment is assumed to be carried out at benchmark efficiency and therefore is not adjusted for efficiency.

⁴ The capital inefficiency for 2003-04 is an estimate, based on the performance of past years.

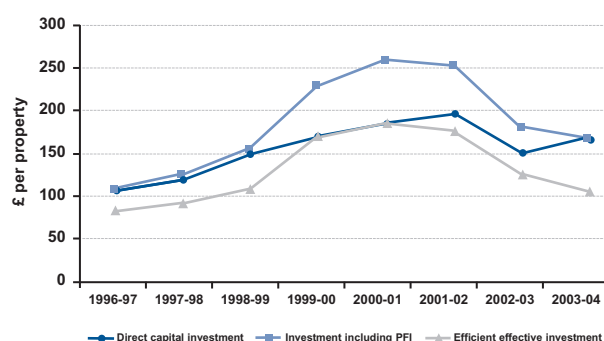
The figures indicate the growth in investment that has taken place in Scotland in the period since 1996-97. In the last two years, since Scottish Water was formed, there has been a decline in the level of investment. Scottish Water attributes the delay in delivering the *Quality and Standards II* investment programme to the time taken to establish Scottish Water Solutions⁵. We discuss the progress in delivering *Quality and Standards III* in more detail below.

Absolute levels of investment do not, in themselves, present a complete picture of investment. A more indicative measure may be the level of investment per property. Table 6.3 and Figure 6.2 show the level of capital investment per property in Scotland.

Table 6.3: Levels of capital investment in Scotland per property

Year	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04
Direct capital investment	£109	£119	£149	£171	£184	£198	£152	£168
Investment including PFI	£110	£126	£156	£230	£258	£253	£180	£168
Efficient effective investment	£84	£92	£109	£170	£188	£177	£125	£107

Figure 6.2: Levels of capital investment per property



It is clear that there has been a significant increase in investment per property since the three water authorities were formed. The relative inefficiency of capital expenditure planning and delivery in Scotland has, however, cost customers some £1,062 million since

1996 (in 2004 prices). This is equivalent to £458 for each property served by the industry in Scotland⁶.

We will continue to monitor and report on Scottish Water's performance in achieving the efficiency targets set out in the last *Strategic Review of Charges*. We will also set targets in the *Strategic Review of Charges 2006-10*; the targets will promote further efficiency improvements in delivering capital investment by Scottish Water.

Comparison with England and Wales

To make direct comparisons of levels of investment in Scotland with those in England and Wales is not a straightforward process. In addition to differences of geography and population density, adjustments also need to be made to reflect differences in the timing of investment and to reflect the significant use of PFI schemes in Scotland.

The level of investment in England and Wales increased significantly after privatisation in 1989. By 1996-97, the privatised companies were investing some £3.5 billion per year. A significant proportion of this investment was driven by the Urban Waste Water Treatment and the Bathing Waters Directives.

Investment in England and Wales has recently stabilised at around £3 billion a year. The *Strategic Review of Charges 2002-06* foresees investment in Scotland stabilising at an average level of around £450 million each year.

We can compare the levels of investment in Scotland with that in England and Wales using the measure of investment per property. As before, we adjust the investment in Scotland to take account of the impact of PFI and the different level of efficiency in Scotland.

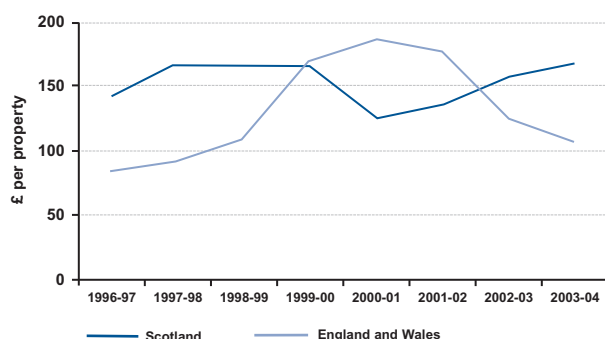
⁵ Scottish Water Solutions is a joint venture partnership formed by Scottish Water to deliver the *Quality and Standards II* investment programme.

⁶ In cash terms the total is £991 million, or £427 per property.

Table 6.4: Levels of effective efficient capital investment per property

Year	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04
Scotland	£84	£92	£109	£170	£188	£177	£125	£107
England and Wales	£144	£167	£167	£166	£125	£136	£157	£168

Figure 6.3: Levels of effective efficient capital investment per property



As Figure 6.3 indicates, investment per property in Scotland since 1996 is broadly on a par with that in England and Wales. In the period 1999 to 2002, the level of effective efficient investment in Scotland rose above that of England and Wales. This effectively reversed the difference that had existed when the three former water authorities were established in 1996. Although in 2003 and 2004 investment has fallen back below that of England and Wales, it is still higher than during the early years of the three authorities. This reduced level of investment may have been a necessary step in improving efficiency and therefore ensuring that future investment is affordable and delivers the required outputs.

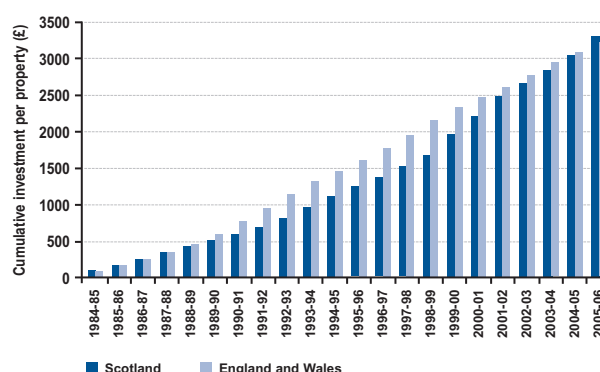
Longer term investment trends

This chapter has so far focused on the period since 1996 when the three former water authorities were established. We have relatively reliable and consistent information about investment levels in Scotland for that period.

Information about investment is available for the years before 1996 from the capital account of local authority returns. However, this may understate the true level of investment and maintenance expenditure as it is likely to exclude some asset costs that were charged to the revenue account. However, we can use the information on capital spending before 1996 to estimate the long-term profile of investment per property in Scotland over the period from 1984-85 to 2005-06. We do have reliable information on investment in England and Wales for this period.

This analysis shows that investment per connected property in Scotland will have matched that in England and Wales over the period 1985-2006. Although investment in England and Wales was higher immediately after privatisation, the situation has reversed in recent years. By the end of *Quality and Standards II*, Scotland will have invested more per property in cash terms than England and Wales over a 10-year and a 20-year period.

Figure 6.4: Cumulative investment per property in Scotland and in England and Wales 1984-2006⁷



If there is a significant backlog of investment in Scotland relative to that in England and Wales this can only be as a result of inefficiency, not a lack of investment funds. There is therefore no justification for poorer customer service or operational efficiency. Customers in Scotland have paid for, and so deserve, an equivalent standard of service.

⁷ Adjusted for inflation and for the effect of PFI investment. Efficiency adjustment is not included. The forecast expenditure in Scotland for 2004-05 and 2005-06 is based on figures supplied by Scottish Water.

6.4 Condition of Scotland's asset base

The regulatory return, provided to us each year by Scottish Water, contains information about both the physical state of the assets (condition) and their ability to carry out their function (performance). An asset's performance will depend on:

- its condition;
- how it is operated; and
- its capacity to carry out its required role.

It is possible for an asset in reasonable condition and of adequate capacity to perform badly through poor operating practice. Similarly, an asset which is not in the best condition can, through skilful management, be made to perform acceptably.

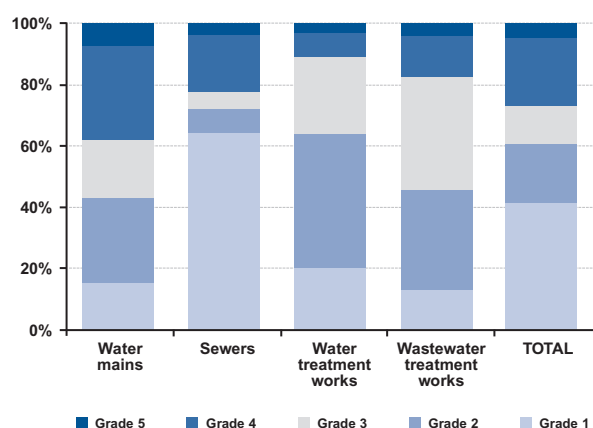
We believe that it is vital that Scottish Water continues to make progress in developing its understanding of both the condition and performance of its assets. This will significantly improve the efficiency and effectiveness of investment.

The four main components of a water and wastewater company's asset base are water treatment works, wastewater treatment works, water mains and sewers. Together, they comprise more than 80% of the replacement cost of the total asset base. We therefore focus our analysis on these four elements.

Asset condition

Asset condition is assessed on a scale of 1-5, with 1 representing 'very good' and 5 representing 'very poor'. Figure 6.5 shows the condition of the assets in Scotland, as submitted by Scottish Water in its Annual Return 2003-04.

Figure 6.5: Condition of Scotland's asset base⁸



The information highlights the relatively poor condition of water mains in Scotland, with nearly 40% categorised as 'poor' or 'very poor'.

In the *Quality and Standards II* investment programme, which runs from 2002 to 2006, Scottish Water is tasked with delivering 3,051km of water main replacement.

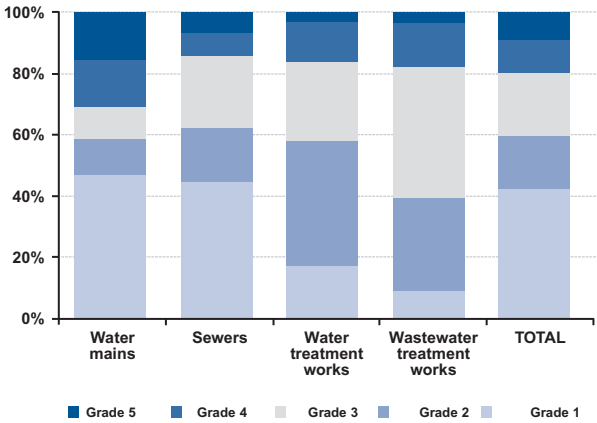
In other categories the condition profile of the assets appears more evenly spread. However, ongoing investment will be required if there is to be no overall reduction in the condition of the asset base.

Asset performance

The performance of an asset has a more direct impact on the service that customers receive. Analysis of asset performance is measured using a similar, five-point scale. Here, 1 denotes an 'excellent' asset, and 5 represents a 'failing' asset.

⁸ From Scottish Water's Annual Return 2003-04. Does not include redundant and decommissioned assets.

Figure 6.6: Performance of Scotland’s asset base⁹



Scottish Water’s asset performance grades are relatively evenly distributed. On average, around 20% of the assets are in categories four and five. The performance of water mains does appear to be poorer than those of other categories of assets: this is likely to be linked to the relatively poor water main condition grades noted above.

Condition and performance grades, when properly combined with assessments of risk, provide important evidence about where investment should be targeted to improve overall network performance.

Comparison with England and Wales

To compare the condition of assets in Scotland with those in England and Wales we have used the information from Scottish Water’s Annual Return 2003-04. We have compared this with 1997-98 Asset Inventories of the companies south of the border. Although information for the companies south of the border is six years older, this is a relatively short period for assets with long useful lives.

We show information about the distribution of assets by condition grade for ten English and Welsh water and wastewater companies¹⁰. We have calculated the mean for these ten companies. We have not identified the companies south of the border for reasons of commercial confidentiality.

We have focused on the percentage of each asset class in condition grades 4 (‘poor’) and 5 (‘very poor’), as these are the assets that are potentially more expensive to operate.

Table 6.5: Comparison of assets in condition grades 4 and 5¹¹

	Scottish Water	Ranking	Water and wastewater companies in England and Wales		
			Best	Mean	Worst
Water mains	38%	10th	2%	11%	54%
Sewers	22%	9th	4%	11%	32%
Water treatment works	9%	5th	2%	13%	39%
Wastewater treatment works	15%	6th	2%	15%	24%

This analysis shows that, with the possible exception of water mains, the condition of assets in Scotland is broadly similar to that in England and Wales. For all asset categories, the percentage of ‘poor’ and ‘very poor’ assets in Scotland lies within the range for companies in England and Wales.

As such, poor asset condition would not appear to justify either poorer customer service or a lack of progress towards benchmark efficiency.

We have analysed the percentage of each asset class in performance grades 4 (‘borderline’) and 5 (‘fail’) to compare the performance of assets in Scotland with those in England and Wales.

⁹ From Annual Return 2003-04. Does not include redundant and decommissioned assets.
¹⁰ This is the group of companies that provides both water and wastewater services. Other ‘single service’ companies operate in England and Wales.
¹¹ The mean shown for England and Wales is the weighted average.

Table 6.6: Comparison of assets in performance grades 4 and 5¹²

	Scottish Water	Ranking	Water and wastewater companies in England and Wales		
			Best	Mean	Worst
Water mains	31%	9th	11%	29%	61%
Sewers	14%	10th	1%	6%	18%
Water treatment works	13%	7th	2%	28%	97%
Wastewater treatment works	16%	7th	1%	19%	92%

This analysis indicates that Scottish Water's assets performance is poorer than might be expected from a comparison of condition. Performance grades, however, remain within the range of companies in each asset category.

Operational policies may be contributing to Scottish Water's poor performance relative to that in England and Wales. As noted earlier, asset condition and operating practices are the two factors that most influence how well an asset performs.

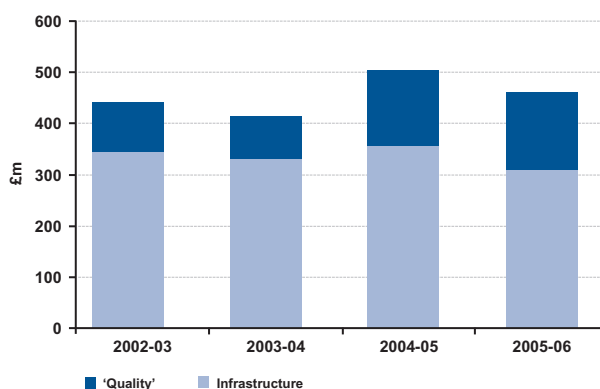
6.5 Progress with investment in the current regulatory period 2002-06

Quality and Standards II defined the planned investment in the water industry in Scotland for the period from April 2002 to March 2006. In the *Strategic Review of Charges 2002-06* we examined the scope for capital efficiency.

We advised that Scottish Water should be required to deliver the full scope of *Quality and Standards II* for £1.8 billion. Customers will wish to be assured that this significant investment in Scotland's water industry –which is vital to ensuring that public health, environmental and customer service benefits are delivered – is being effectively monitored.

Table 6.7: Capital investment set out in the Strategic Review of Charges¹³

Capital investment	2002-03	2003-04	2004-05	2005-06	Review Total
'Quality'	£352m	£331m	£360m	£315m	£1,359m
Infrastructure	£84m	£80m	£140m	£148m	£452m
Total	£436m	£411m	£501m	£463m	£1,810m

Figure 6.7: Capital investment set out in the Strategic Review of Charges

Scottish Water reports performance in delivering the investment programme in its annual June Return and its quarterly capital investment return. The capital investment return provides a breakdown of expenditure at a project level. This allows us to determine whether the expenditure relates to a *Quality and Standards II* project as defined by the WIC18¹⁴ baseline.

Expenditure to date

We can assess Scottish Water's performance in delivering investment by analysing total spending against the investment profile set out in the Strategic Review of Charges. Table 6.8 shows Scottish Water's actual investment expenditure and our first assessment in our annual investment and Asset Management Report 2003-04 published April 2004 of how much of this expenditure relates to *Quality and Standards II* investment.

¹² The mean shown for England and Wales is the weighted average.

¹³ Post efficiency.

¹⁴ WIC18 is the defined list of projects that comprise *Quality and Standards II*. A copy of this letter is reproduced in the *Strategic Review of Charges 2002-06*, page 589. The WIC 18 process is described in detail in Chapter 7 of this document.

Table 6.8: Scottish Water's capital expenditure and assessed extent of Quality and Standards II expenditure¹⁵

Capital investment	2002-03	2003-04	2004-05	2005-06
Strategic review profile	£436m	£411m	£501m	£463m
Cumulative total	£436m	£847m	£1,347m	£1,810m
Scottish Water's capital investment	£353m	£389m		
Cumulative total	£353m	£742m		
Assessed Q&S II investment	£295m	£305m		
Cumulative total	£295m	£600m		

Scottish Water invested £742 million over the first two years of the current review period. This is £105 million less than the investment profile set out in the *Strategic Review of Charges 2002-06*.

We estimated in our Investment and Asset Management Report that no more than £600 million of this investment relates to *Quality and Standards II* projects.

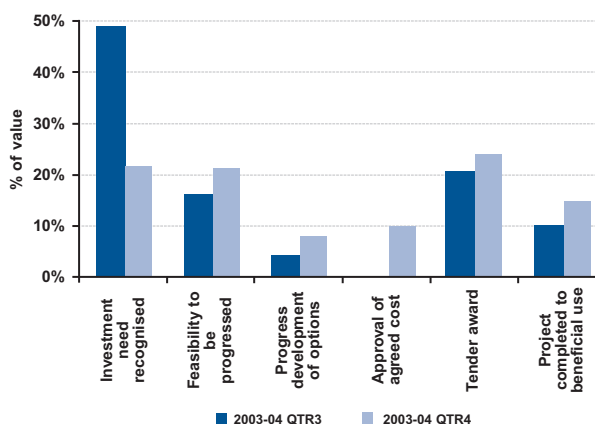
Scottish Water has indicated that much of the difference relates to *Quality and Standards I*. Our analysis¹⁶, however, indicates that investment in the *Quality and Standards I* period was consistent with forecast expenditure.

Progress with delivery

The capital investment return allows us to assess the rate of progress in delivering *Quality and Standards II*. Scottish Water reports progress with projects using a series of project milestones. These range from early recognition of the requirement for investment through to the project achieving 'beneficial use'. Beneficial use means that the output required in *Quality and Standards II* is being delivered.

The proportion of projects at each of the key milestones is shown in Figure 6.8. This reflects the position reported by Scottish Water in its capital investment returns, submitted in January 2004 and March 2004.

Figure 6.8: Quality and Standards II project progress



In our *Investment and Asset Management Report 2002-03* we commented on progress to Quarter 3, 2003-04. We noted our concern that only around 10% of the projects that comprise the *Quality and Standards II* programme had been completed to the beneficial use stage, and that only around 30% of the programme value had passed the financial authorisation stage. We also noted that half of the programme had not yet progressed beyond project feasibility.

The updated figures for the year-end position (Quarter 4, 2003-04) indicate some movement in the programme; however, at the half-way stage in the four-year programme, only around 15% of projects have reached beneficial use. Similarly, around half of the programme remains in the planning stages. Clearly, a considerable increase in activity is required in the last two years of the period. We discuss this in more detail in Chapter 8.

Delivery of the remainder of the Quality and Standards II programme

If Scottish Water phases its capital expenditure in a different way from the profile set out in the *Strategic Review of Charges*, this does not necessarily jeopardise the efficient delivery of this investment. However, Scottish Water faces a significant challenge in

¹⁵ Excludes PFI element.

¹⁶ Investment and Asset Management Report 2000-02

attempting to deliver efficiently the level of investment that is now required for the last two years of the period. Its ability to deliver the investment will also be constrained by other factors, such as the time it takes to consult with customers, achieve planning permission and purchase land.

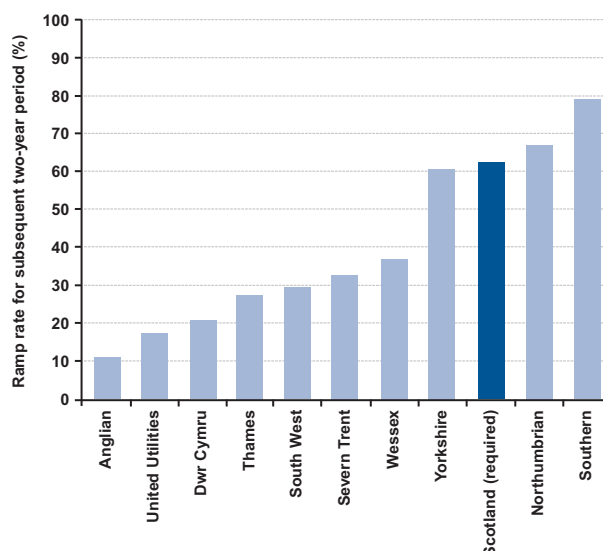
Scottish Water had delivered £742 million of expenditure, of which around £600 million is *Quality and Standards II* investment, by the end of the financial year 2003-04. This leaves more than £1,200 million of *Quality and Standards II* investment to deliver in the remaining two years of the period. This is a 63% increase on the level of expenditure that was delivered in the first two years¹⁷ and is significantly higher than the 14% increase that would have been required had the Strategic Review profile been followed.

Table 6.9: Remaining Quality and Standards II investment

	Total expenditure 2002-2004	Quality and Standards II expenditure 2002-2004	Remaining expenditure 2004-2006	Percentage increase required
Scottish Water	£742m	£600m	£1,210m	63%
Strategic Review profile	£847m	£847m	£963m	14%

To establish the feasibility of achieving the required increase in investment over the remainder of the *Quality and Standards II* period, we analysed the ten-year period from 1992-93 to 2001-02, when investment in England and Wales increased rapidly following privatisation. For each company, we established the maximum ramp rate achieved over any subsequent two-year period. Only two companies south of the border have ever increased investment at the rate required in Scotland to achieve the delivery of *Quality and Standards II*.

Figure 6.9: Maximum historical investment ramp rates



We also examined the increase in investment level required and compared this with the levels that have previously been achieved by the privatised companies in England and Wales.

Table 6.10: Maximum two-year increase in investment, by company

Company	Maximum historical investment ramp rate for subsequent two-year period	Initial two-year investment total (£m)	Attained two-year investment total (£m)	Change in investment (£m)
South West	29%	£251m	£324m	£73m
Wessex	37%	£213m	£292m	£80m
Anglian	11%	£724m	£806m	£82m
Dwr Cymru	21%	£486m	£590m	£104m
United Utilities	17%	£947m	£1,112m	£165m
Northumbrian	67%	£337m	£562m	£225m
Thames	27%	£831m	£1,058m	£227m
Yorkshire	61%	£486m	£784m	£298m
Southern	79%	£375m	£673m	£298m
Severn Trent	33%	£951m	£1,264m	£313m
Scotland (required)	63%	£742m	£1,210m	£468m

¹⁷ This figure assumes that the required increase is based on the total expenditure during the first two years. A more pessimistic assumption would be that the increase should be based on the extent of *Quality and Standards II* delivery during the first two years. This would give a required increase of 102%.

The increase in investment that is required in Scotland for the last two years of the period, at £468 million, is almost 50% greater than the highest level of investment achieved by any company south of the border (Severn Trent, at £313 million).

Scottish Water's first draft business plan

Earlier this year we received assurances from Scottish Water and Scottish Water Solutions that *Quality and Standards II* would be delivered efficiently and on time¹⁸.

Such assurances are inconsistent with the regulatory information that we are receiving from Scottish Water. In its first draft business plan¹⁹, Scottish Water suggests that it now expects that some £260 million of *Quality and Standards II* outputs will not have been paid for by the end of the current regulatory control period. It appears that some £217 million of outputs will not have been delivered. The balance appears to be investment creditors (ie work done but not paid for).

Our view is that speed of delivery is less important to customers than delivering investment efficiently²⁰. It is possible to accommodate delays in an investment programme, provided the money has not already been spent. If Scottish Water try to deliver too quickly the investment it is unlikely to be efficient.

6.6 Summary

This chapter has examined the nature, condition and performance of Scottish Water's assets. It has also considered historic levels of capital investment in the water industry in Scotland, and compared these with investment south of the border. Our analysis confirms that:

- the size and composition of asset base in Scotland is similar to that in England and Wales;
- the condition and performance of the assets in Scotland appears to be no worse than in England and

Wales, and cannot be used to justify poor customer service; and

- by the end of the current regulatory period, investment levels per property in Scotland will be equivalent to England and Wales over the previous 10 and 20-year periods.

This chapter has also discussed progress to date in delivering the *Quality and Standards II* investment programme.

- More than £1,200 million of *Quality and Standards II* investment remains to be delivered in the last two years of the Quality and Standards period; and
- Furthermore, Scottish Water's draft business plan indicates that some £217 million of outputs will not have been delivered by the end of the current regulatory period.

As a result, it may be necessary at the *Strategic Review of Charges 2006-10* to accommodate a significant hangover of *Quality and Standards II* outputs. Customers will therefore have to wait longer for the outputs defined in *Quality and Standards III*. This is discussed in more detail in Chapter 8.

6.7 Questions for consultation

1. Are there any factors we should take into account in the *Strategic Review of Charges 2006-10* with regard to historic level of capital expenditure in the Scottish water industry?

¹⁸ Meetings with Scottish Water and Scottish Water Solutions in January 2003.

¹⁹ Scottish Water's draft business plan – October 2004.

²⁰ Investment and Asset Management Report 2002-03.

Section 2: Chapter 7

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

7.1 Introduction

In the previous chapter we discussed how the significant *Quality and Standards II* investment programme would narrow the gap in water services investment between Scotland and England and Wales. One of the disappointments of *Quality and Standards II* has been the difficulties faced by both stakeholders¹ and customers in monitoring Scottish Water's delivery of this investment programme. This has resulted from the lack of clearly defined projects and associated outputs that comprised the baseline programme.

In this chapter we consider in detail the process by which stakeholders have attempted to establish² the baseline investment programme for *Quality and Standards II*. We believe that lessons must be learned from these difficulties, and procedures put in place to overcome them, for the *Strategic Review of Charges 2006-10*.

We also discuss the issues that could arise as a result of any 'overhang' of *Quality and Standards II* projects into the *Quality and Standards III* period. This overhang would inevitably have implications for customers and for the levels of capital investment going forward into *Quality and Standards III*. We will discuss this issue in the next chapter.

In Chapter 9 we describe our proposals for defining the investment programme in a very detailed way. We explain that this level of detail is necessary because of the difficulties we have experienced in attempting to establish the baseline investment programme for *Quality and Standards II*.

7.2 First steps in monitoring investment in Scotland

Quality and Standards II defined the investment programme for the period April 2002 to March 2006 at a

high level. We monitor and report on³ progress in delivering this investment programme. This monitoring has been more difficult because of the lack of clarity in the baseline programme.

In this section, we describe how we attempted to establish the baseline for *Quality and Standards II*. We then discuss the lessons learned from this process and how these inform our proposals for *Quality and Standards III*.

Our work with the water authorities

In order to establish the required baseline programme, we asked for a detailed list of projects from each of the three former water authorities in May 2001. This letter, which was termed WIC 18 '*Quality and Standards final output*'⁴ asked the three authorities to provide information for each project that they had included in their baselines, consistent with the outcome of the *Quality and Standards II* consultation.

The format in which we requested the information is set out in Table 7.1. As can be seen, the format comprises a relatively straightforward list of projects and their estimated costs, with a breakdown of project categories between base, quality and growth, water and wastewater and infrastructure and non-infrastructure.

¹ 'Stakeholders' in this chapter means the key players involved in setting the investment targets, including the Scottish Ministers, the Scottish Executive, the Scottish Environment Protection Agency, the Drinking Water Quality Regulator and this Office.

² Although the *Quality and Standards II* baseline investment programme is now substantially defined, elements remain that are yet to be clarified.

³ See Chapter 6 of this document and our publication '*Investment and Asset Management Report 2002-03*', April 2004.

⁴ The WIC 18 letter is published in Volume 1 of our methodology, '*Our work in regulating the Scottish water industry: Setting out a clear framework for the Strategic Review of Charges 2006-10*', Appendix 2, Page 142.

Table 7.1: Format of Quality and Standards II
baseline (June 2001)

Reference	Project title	2002-06 expenditure	Investment purpose			Water		Wastewater		Other	Rural/non-rural
		£000	Base (%)	Quality (%)	Growth (%)	Infra-structure (%)	Non infra-structure (%)	Infra-structure (%)	Non infra-structure (%)	%	%
<i>(for each project)</i>											
TOTAL											

We did not envisage that the authorities would find it difficult to provide the information we required, as they had already provided detailed costs for *Quality and Standards II*. North of Scotland Water Authority and West of Scotland Water Authority were able to provide a relatively detailed investment programme. The East of Scotland Water Authority, however, failed to provide the required level of detail. When Scottish Water was created in April 2002, this problem had still not been properly addressed.

Following its creation, Scottish Water began a process of reviewing the entire capital investment programme. This decision was understandable, but our concern was to ensure that customers received value for money, so we still wanted to achieve clarity on the baseline investment programme.

East of Scotland Water Authority's claimed efficiencies

Our initial concern was to gain better information about £114 million of efficiencies that the former East of Scotland Water Authority had claimed in its development of *Quality and Standards II*. During 2002, we had protracted discussions with Scottish Water about the claimed capital efficiencies; it became apparent that no definitive list of projects existed to substantiate East of Scotland Water's efficiency claim. Customers faced higher bills as a result of the claimed efficiencies, because the efficiency target applied to East of Scotland

Water in the *Strategic Review of Charges 2002-06* was less challenging than it would otherwise have been⁵.

In January 2003 we proposed a settlement. The proposal was that the £114 million, (which equated to £80.2 million post efficiency), should be amortised in five equal instalments of £16.04 million during the period from 2006-07 to 2010-11. This would add £16.04 million to the capital efficiency target applicable for each year. Scottish Water's Board notified us on 28 February 2003 that it accepted this proposal. This adjustment to the capital efficiency target will be made in the *Strategic Review of Charges 2006-10*.

Developing the baseline programme and substitution process

While these discussions were ongoing we continued to require Scottish Water to establish a baseline programme for sign off by all of the stakeholders that was consistent with the original responses to WIC 18. This proved to be a time consuming and complex task.

The initial stage was to disaggregate the information in the original WIC 18 submissions from the three authorities. In many cases, particularly for the former East of Scotland Water Authority investment programme, a wide range of individual projects had been amalgamated into a single overall description, such as 'East of Scotland Water reservoirs' and

⁵ The overall efficiency applied to East of Scotland Water Authority was 11%, compared with 26% for North of Scotland Water Authority and 27% for West of Scotland Water Authority. See *Strategic Review of Charges 2002-06*, Table 19.12, Page 207.

'corporate billing systems'. In order to be able to monitor and report on progress in achieving the programme, we needed these overall descriptions to be broken down into individual, named projects with specific outputs.

The next step in our analysis was to review the detailed project list and to establish whether each proposed project was necessary. A number of workshops were held in March 2003 where the key stakeholders examined the WIC 18 programme lists, line by line, and allocated projects into two distinct categories. The 'red' category meant that the project was no longer required and was hence a candidate for replacement with an alternative project; while the 'green' category was for WIC 18 projects that were still required and could proceed.

We set up a steering group to oversee this process and to develop a 'substitution process'. The substitution process allows the 'red' projects to be exchanged for alternative projects that provide an equivalent set of outputs.

The steering group also sought to resolve a number of other issues, relating to the baseline programme, which had emerged during the initial stages of analysis. These included the following:

- *Inclusion in the original WIC 18 submissions by the three authorities of £103 million of 'spend to save' projects.* Spend to save investment was funded separately and therefore should not have been included in the baseline programme. Our view was that replacement projects were required for this investment. However, Scottish Water asserted that removing these projects formed part of the required capital efficiency and that there was therefore no justification for replacement projects.
- *The requirement to specify the projects associated with the £50 million of 'high priority' spend allocated by the Minister for the Environment and Rural affairs in the Quality and Standards II programme.* We had originally asked for a list of these projects in a letter,

WIC 16⁶, which we issued in May 2001. The funding was intended to ease development constraints and help with first time sewerage provision in rural areas.

- *The treatment of expenditure associated with projects from the Quality and Standards I investment programme which had overrun into the Quality and Standards II period.* Scottish Water's initial estimate of the extent of these costs was as high as £157 million.

High level principles to underpin the substitution process were agreed in July 2003. These included stakeholder agreement to changes and a requirement that we should scrutinise the project costs associated with all changes to the WIC 18 list. The Reporter for Scottish Water helps with this process. There was also an agreement that any substitutions should not alter the stated objectives of *Quality and Standards II*.

Scottish Water has issued a series of WIC 18 baseline project lists in an agreed format. The stakeholder group examines the list of projects and brings errors and omissions to the attention of Scottish Water.

Each iteration of the WIC 18 list brings fewer changes. Many of the projects contained in the original WIC 18 submissions remain in the current version of the baseline programme.

Scottish Water cannot claim that non-delivery of *Quality and Standards II* results from delays in defining the project list. Most of the extra definition has related to capital maintenance investment. Customers will rightly expect Scottish Water to have taken all possible steps to ensure that the investment programme is delivered efficiently and effectively.

The stakeholders agreed a solution to the issue of the £103 million spend to save expenditure included in the original WIC 18 in September 2004. This agreement allowed £58.12 million of the £103 million to be allocated to projects where the scope of the project had changed

⁶ This letter is published in Volume 1 of our methodology, 'Our work in regulating the Scottish water industry: Setting out a clear framework for the Strategic Review of Charges 2006-10' Appendix 2, Page 139.

or problems had arisen. The remainder was allowed to offset any *Quality and Standards I* liabilities inherited by Scottish Water. Scottish Water has agreed to make no further claims for spending on *Quality and Standards I* projects.

Stakeholders have now identified potential projects to satisfy the WIC 16 criteria⁷.

We are concerned that a complete baseline investment programme for *Quality and Standards II* has only just been agreed. It is now over three and a half years since we originally asked for project-specific information (through the WIC 18 letter), and we are now more than halfway through the four-year investment period. We believe that a properly defined baseline programme must be in place before the start of the next regulatory control period.

An example of the importance of clearly defined projects

The lack of a clearly defined investment programme for *Quality and Standards II* has had a significant impact on customers. A typical example of this planned improvements is on the Isle of Arran. The former West of Scotland Water Authority made a number of statements about improvements to the wastewater network on Arran. These included the intention to provide 'secondary' (biological) wastewater treatment.

Scottish Water has subsequently concluded that the required environmental standards can be met more effectively and efficiently through primary treatment, with longer sea outfalls. This has left a number of the residents of Arran dissatisfied with the revised scheme, which they believe has also limited the potential for development. In the absence of a defined investment programme, it has not proved possible to determine

whether the original wastewater scheme for Arran in *Quality and Standards II* included funding for growth.

7.3 Lessons learned from Quality and Standards II

The WIC 18 experience has taught us that a fully defined capital investment programme must be in place at the outset of the *Quality and Standards III* process. Our discussions with the Scottish Environment Protection Agency (SEPA) and the Drinking Water Quality Regulator DWQR also lead us to conclude that the outputs to be delivered by each project must be clearly defined and quantified at the outset of the process.

At the start of *Quality and Standards III* we made it clear that we would require a transparent and auditable investment programme. It is important to emphasise that a detailed baseline programme brings benefits for customers. Capital projects such as treatment plant upgrades or pipe renewal can have a major impact on customers and local communities, and customers have a right to know about projects that will have an impact on them.

We propose that the baseline investment programme should be published in full. If customers have been given assurances by Scottish Water that levels of service will be improved, they should be able to check if and when the particular project will be delivered. This would help ensure transparency and accountability in the delivery of agreed benefits to customers and to the environment.

There is also a need for a process that allows projects to be substituted for others. We have seen how, in *Quality and Standards II*, changing priorities, revised policies and practices, new technologies and new information may mean that outputs need to be amended.

It is likely that the *Quality and Standards II* substitution process will need to be developed further for *Quality and Standards III*. We will also need to address issues such as how the baseline investment programme, and changes to it, are communicated to customers and developers.

⁷ WIC 16: Development constraints and rural sewerage connections – 28 May 2001

7.4 Potential non-delivery of Quality and Standards II

In Chapter 6 we highlighted the challenge that Scottish Water faced in completing the investment programme on time. We wrote to Scottish Water at the start of September 2004, making the following points:

- as work was already underway on the *Strategic Review of Charges 2006-10*, it was important that we should complete the audit trail of the process by which the baseline programme for *Quality and Standards II* is established; and
- we required Scottish Water's current best forecast for the extent of delivery of *Quality and Standards II* as at 1 April 2006. To establish the starting position for the next Strategic Review, and to finalise our methodology for assessing the required capital investment for the period, we required information on the likely extent of delivery of *Quality and Standards II*.

We wrote again on 10 September 2004 reiterating our request for this information. We did not receive a response from Scottish Water to either of these letters.

We wrote for a third time on 20 September 2004. This letter explained that we could not finalise our methodology for assessing capital efficiency in the *Strategic Review of Charges 2006-10* until we had received a definitive statement from Scottish Water on the *Quality and Standards II* projects that would not be delivered on time. We advised Scottish Water that we would delay the publication of our methodology for assessing capital efficiency until we received a proper and complete response. We received no response to this letter.

On 11 October 2004 we wrote a regulatory letter, WIC 47⁸, asking for a final version of the *Quality and Standards II* investment programme and a clear statement of the likely delivery position of the programme by the end of March 2006. We explained that specification of the baseline investment programme

for the second draft business plan would be difficult without this information.

Scottish Water responded to our WIC 47 letter on 14 October. Scottish Water provided three possible scenarios (low, high and best estimate) for the likely capital investment position at the end of the *Quality and Standards II* period. These provided estimates of between £99 million and £180 million of non-delivery of the *Quality and Standards II* baseline programme by 1 April 2006.

We responded on 15 October 2004 and explained that we required a detailed estimate of the *Quality and Standards II* projects that would not have been delivered by the end of March 2006. We reminded Scottish Water that this information was essential if we were to finalise our proposals for establishing a baseline for the *Strategic Review of Charges 2006-10*. We also informed Scottish Water that, in the absence of a final definition of the current baseline and the expected outcome, we would not be able to agree to any request for an 'early start' programme for *Quality and Standards III*.

In its first draft business plan (submitted on 29 October 2004), Scottish Water indicated that its latest projection of the *Quality and Standards II* non-delivery has risen to £260 million. We are concerned by the lack of consistency in Scottish Water's estimates.

7.5 'Early start' programme

Scottish Water has proposed an 'early start' programme for *Quality and Standards III* in its first draft business plan. It argues that this would allow a smooth transition from one regulatory control period to the next, by allowing preparatory work to begin on *Quality and Standards III*.

In England and Wales, Ofwat has introduced an 'early start' programme. This was designed to avoid cyclical declines in capital investment delivery between regulatory control periods.

⁸ This letter is available on our web-site www.watercommissioner.co.uk

In practice, Ofwat has found that companies have asked for very limited 'early start' project funding.

Normally we would view an 'early start' approach as sensible, provided it is carefully monitored and the projects which are 'brought forward' into the current period are clearly identified in reporting.

However, given the delay in delivery of *Quality and Standards II*, we are concerned that an 'early start' programme would only represent a distraction for Scottish Water.

We would also be concerned that there may be a tendency for Scottish Water to seek to begin the relatively straightforward elements of the *Quality and Standards III* programme, such as mains renewal, and focus less on delivery of the generally more complex water quality and environmental programmes in *Quality and Standards II* and *III*.

We would therefore be minded to accept any proposals for an early start programme for *Quality and Standards III* only in the context of a detailed list of projects for both *Quality and Standards III* and any overhang from *Quality and Standards II*.

7.6 Summary

The process of establishing a baseline for *Quality and Standards II* has demonstrated that this must be addressed before the start of *Quality and Standards III*.

As we predicted in our *Investment and Asset Management Report 2002-06*, it seems increasingly likely that a significant proportion of *Quality and Standards II* will not be delivered on time. The delay in delivery of *Quality and Standards II* suggests that an 'early start' programme for *Quality and Standards III* is inappropriate until a full definition of any potential overhang is agreed.

7.7 Questions for consultation

1. Do respondents agree that, based on experience from *Quality and Standards II*, a baseline investment programme detailing, at a project level, the

deliverables from Scottish Water's capital expenditure is an essential pre-requisite for the *Strategic Review of Charges 2006-10*?

2. Do respondents think the investment programme should be published? If so, should it be published in full or should regional lists be provided?
3. Do respondents agree that an 'early start' programme for *Quality and Standards III* is not appropriate unless appropriate definition of the *Quality and Standards II* and *III* programmes is available?

Section 2: Chapter 8

Investment programme deliverability

8.1 Introduction

This chapter examines how deliverable the investment programme is likely to be, and how we would propose to take account of the size of the investment programme in setting efficiency targets. The efficient delivery of the investment programme is critical to ensuring that customers receive value for money from Scottish Water. If Scottish Water is required to deliver a very large programme, then the scope for efficiency may be reduced. The size of the programme that Scottish Water has to deliver will depend on the extent of the overhang from *Quality and Standards II* and on the investment priorities for *Quality and Standards III* that is outlined in Ministerial Guidance.

The chapter first reviews the information that is currently available about the likely overhang from *Quality and Standards II*, then considers the water industry investment programmes that have been delivered south of the border in the past. The chapter concludes by setting out our views on the maximum size of the efficient capital programme. It is our belief that if a higher number of outputs are required we will need to reduce the efficiency targets we set for Scottish Water.

8.2 Deliverability of Quality and Standards II

It appears increasingly likely that the *Quality and Standards II* investment programme will not have been delivered in full by April 2006. At the time of writing we have not been able to quantify the extent of *Quality and Standards II* that will remain undelivered. Our analysis of the first *Quality and Standards II* projects to have been completed also suggests that the capital efficiency targets set in the *Strategic Review of Charges 2002-06* may not be met.

If *Quality and Standards II* has not been delivered in full (either because budgets have not been spent in full or because investment has been delivered less efficiently than the targets set in the 2002-06 Review), the remaining outputs from this investment programme will have to be delivered during the period of the *Strategic Review of Charges 2006-10*. This will inevitably mean that less of the proposed *Quality and Standards III* investment programme can be delivered before 2010.

Our analysis has focused on the regulatory return that Scottish Water provides us each quarter. This details spending on each investment project in the agreed WIC18 baseline and any other capital spending. Such other capital expenditure could include spending on the *Quality and Standards I* overhang and non-core capital investment.

Establishing the baseline to be delivered

The value of WIC18 is £1,808 million. In the *Strategic Review of Charges 2002-06*, we assumed a rate of capital expenditure inflation of 1.5% a year. However, capital investment inflation has run at a higher level and this is likely to increase the efficient cost of delivering the WIC18 list of projects to approximately £1,930 million. Scottish Water has also been tasked with delivering a further £110 million of new outputs. These relate to security, the removal of hazardous substances and contributions to developers. This brings the total efficient cost of the programme to £2,040 million.

We have reviewed the quarterly Capital Investment Return that covers the period up to 30 September 2004. This review identified that a proportion of investment spending did not relate to projects from the WIC18 baseline. To the end of September, Scottish Water had invested £961 million, of which £693 million related to projects identified as *Quality and Standards II*. There was no expenditure relating to the agreed new outputs.

In our agreement with Scottish Water on the resolution of the spend-to-save included in the WIC18 baseline, we agreed that £47 million of *Quality and Standards I* overhang inherited by Scottish Water could be included in the WIC18 baseline. This increased the identifiable WIC18 investment spending to £740 million.

The current regulatory period ends in March 2006. This leaves 18 months before *Quality and Standards III* is scheduled to start. If Scottish Water were able to spend £344 million in the remainder of the current financial year and £590 million in 2005-06, this would imply a total *Quality and Standards II* investment spending of £1,674 million.

We have analysed the small proportion of the programme that has been completed to beneficial use¹. We concluded that Scottish Water has delivered this

¹ Beneficial use is the final stage of investment where the outputs begin to be delivered.

element of the investment programme inefficiently. In our analysis, we adjusted the pre-efficiency allowance for the completed projects to take account of the higher level of capital inflation and compared the cost of the projects with the 2002-03 efficiency target (the lowest of the four annual targets). This inefficiency amounts to £10 million.

This analysis suggested that a total of £1,664 million of *Quality and Standards II* outputs will have been delivered by the end of March 2006. This compares with a revised total investment programme of £2,040 million. Table 8.1 summarises the analysis.

Table 8.1: Analysis of likely *Quality and Standards II* overhang

Item	Quarterly Capital Investment Return analysis (£m)
<i>Quality and Standards II</i> spent to date (30/09/04)	693
Non-Quality and Standards II spent to date (30/09/04)	268
Total spending on investment	961
Check of Non-Quality and Standards II:	
Notified new outputs agreed (30/09/04)	0
Agreed <i>Quality and Standards I</i> carry-over into <i>Quality and Standards II</i> period (post-efficiency)	47
Total	47
Revised <i>Quality and Standards II</i> investment spending	740
Revised Non-Quality and Standards II	221
Total spending	961
Estimated maximum efficient investment spending for remainder of 2004-05	344
First half of 2004-05 investment spending	216
Total maximum estimated investment spending	560
Estimated maximum 2005-06 investment spending	590
Total expected <i>Quality and Standards II</i> investment spending (including new outputs)	1,674
Estimated inefficiency on completed projects	(10)
TOTAL EXPECTED <i>QUALITY AND STANDARDS II</i> OUTPUTS DELIVERED (INCLUDING NEW OUTPUTS) (a)	1,664
Baseline <i>Quality and Standards II</i> investment programme	1,810
Notified new outputs (WIC47)	110
Capital inflation above assumptions at Strategic Review of Charges	120
TOTAL REQUIRED INVESTMENT TO DELIVER OUTPUTS (b)	2,040
UNDELIVERED PORTION (b)-(a)	376

We outlined this analysis in our WIC51 letter to Scottish Water. Scottish Water has since substantially revised its regulatory return; however, our review of the new information did not change our view on the likely overhang. The revised information would imply that more of the money has been spent on *Quality and Standards II* projects; however, it appears likely that inefficiency will more than compensate for the extra *Quality and Standards II* money invested.

Determining the size of the overhang

We will continue to work with Scottish Water to understand the overhang from *Quality and Standards II* that will impact on the next regulatory control period. The output from this work will be a defined list of projects and status codes for the remainder of *Quality and Standards II*. This will need to be reconciled with the quarterly investment return for the period up to September 2004.

If we are unable to agree the overhang with Scottish Water, we will use the information available from regulatory returns to set a baseline for the remainder of the current regulatory control period. We will only recognise spending as efficient if it appears on our baseline of projects.

The Minister's Guidance for the next regulatory control period is due at the end of January 2005. We will have to establish our baseline of the remaining *Quality and Standards II* projects if we have not been able to reach agreement with Scottish Water by 28 January 2005.

When we have determined the size of the overhang we will consider the list of projects carefully to identify any further opportunities for synergies or other efficiencies. If we establish that there are such opportunities, we would propose to reduce the cash resources allowed to Scottish Water to complete the delivery of its outputs.

8.3 Size of the investment programme

The *Quality and Standards II* investment programme was approximately £1.9² billion over four years. This total investment is equivalent to £833 per household in Scotland.

It is instructive to examine the investment programmes that the companies in England and Wales have delivered over consecutive four-year periods. There are 17 such four-year periods for which investment has been delivered (or defined) since privatisation of the industry in 1989. To ensure that comparisons are made on a like-for-like basis, we have adjusted the size of the programme to take account of inflation. The following tables show the investment levels of each of the water and sewerage companies since privatisation.

² The original £1.81 billion investment programme included in the *Strategic Review of Charges 2002-06* increases to £1.93 billion as a result of higher than expected capital outputs inflation

Table 8.2: Investment per four-year period (£m)

Four-year Consecutive Period (£m)	1990-94	1991-95	1992-96	1993-97	1994-98	1995-99	1996-00	1997-01	1998-02	1999-03	2000-04	2001-05	2002-06	2003-07	2004-08	2005-09	2006-10
Anglian	1,829.0	1,856.0	1,722.0	1,676.9	1,599.4	1,574.1	1,600.2	1,465.1	1,315.1	1,199.6	1,105.4	1,098.2	1,083.4	1,069.0	1,042.2	1,013.0	988.3
Dwr Cymru	981.0	998.9	1,009.4	1,043.9	1,129.2	1,197.3	1,205.8	1,126.4	1,021.7	984.7	977.8	973.3	961.7	884.6	809.0	780.3	761.3
Northumbrian	523.6	482.3	470.7	525.6	705.9	815.9	958.1	989.9	905.7	912.3	831.8	745.0	694.6	629.2	586.6	585.0	570.8
Severn Trent	2,773.1	2,751.5	2,336.0	2,131.1	2,174.8	2,324.1	2,515.4	2,313.3	2,077.8	1,853.3	1,668.9	1,699.0	1,690.9	1,619.1	1,546.7	1,534.9	1,497.4
South West	944.8	975.3	870.7	789.8	715.2	632.7	647.2	619.8	604.0	673.5	666.1	643.1	606.2	555.2	548.3	535.9	522.8
Southern	749.6	759.9	713.3	787.5	918.6	1,099.8	1,295.4	1,380.1	1,306.9	1,156.6	981.9	885.0	907.1	948.7	1,020.9	1,065.8	1,039.8
Thames	2,200.9	2,031.4	1,912.3	1,907.0	1,982.6	2,132.2	2,197.6	2,049.1	1,915.9	1,911.5	1,992.1	2,038.3	2,100.0	2,038.4	1,923.5	1,974.6	1,926.4
United Utilities	2,439.0	2,331.2	2,174.3	2,133.1	2,160.4	2,274.3	2,270.7	2,070.9	1,927.6	1,953.3	2,286.3	2,480.9	2,509.3	2,353.1	1,929.1	1,766.1	1,723.0
Wessex	645.7	623.6	543.5	487.0	484.8	530.2	575.4	595.0	594.9	608.5	627.3	640.2	631.7	593.3	554.4	533.6	520.6
Yorkshire	1,411.5	1,294.5	1,183.4	1,207.3	1,322.4	1,517.5	1,727.2	1,584.5	1,522.3	1,425.3	1,231.8	1,236.3	1,158.6	1,084.1	1,031.2	984.4	960.3

Table 8.3: Investment per connected property (£m)

Four-year Consecutive Period (£m)	1990-94	1991-95	1992-96	1993-97	1994-98	1995-99	1996-00	1997-01	1998-02	1999-03	2000-04	2001-05	2002-06	2003-07	2004-08	2005-09	2006-10
Anglian	745.2	756.2	701.6	683.2	651.6	641.3	651.9	596.9	535.8	488.7	450.3	447.4	441.4	435.5	424.6	412.7	402.6
Dwr Cymru	746.4	760.1	768.0	794.2	859.2	911.0	917.4	857.1	777.4	749.2	743.9	740.6	731.7	673.0	615.5	593.7	579.2
Northumbrian	280.5	258.4	252.2	281.6	378.2	437.1	513.3	530.3	485.2	488.7	445.6	399.1	372.1	337.1	314.2	313.4	305.8
Severn Trent	744.5	738.7	627.1	572.1	583.8	623.9	675.3	621.0	557.8	497.5	448.0	456.1	453.9	434.6	415.2	412.0	402.0
South West	1,274.6	1,315.8	1,174.6	1,065.5	964.8	853.5	873.1	836.1	814.8	908.5	898.6	867.6	817.8	749.0	739.6	722.9	705.3
Southern	411.9	417.6	391.9	432.7	504.8	604.3	711.8	758.3	718.1	635.5	539.5	486.3	498.5	521.3	561.0	585.7	571.4
Thames	407.9	376.5	354.4	353.5	367.5	395.2	407.3	379.8	355.1	354.3	369.2	377.8	389.2	377.8	356.5	366.0	357.1
United Utilities	816.3	780.2	727.7	713.9	723.0	761.2	760.0	693.1	645.1	653.7	765.2	830.3	839.8	787.6	645.6	591.1	576.7
Wessex	588.9	568.7	495.7	444.2	442.2	483.6	524.8	542.7	542.6	555.0	572.1	583.9	576.1	541.1	505.7	486.7	474.9
Yorkshire	683.0	626.4	572.6	584.2	639.9	734.3	835.7	766.7	736.6	689.7	596.0	598.2	560.6	524.6	499.0	476.3	464.7

By drawing comparisons with the programmes south of the border, it is clear that the *Quality and Standards II* investment programme represented a significant challenge for the three former authorities. This challenge was made more demanding by the merger of the three former authorities and the need to improve significantly the efficiency of capital investment delivery.

Five water and sewerage companies in England and Wales are either broadly the same size as Scottish Water or larger: Thames Water, Severn Trent Water and United Utilities are larger; Anglian Water and Yorkshire Water are similar in size to Scottish Water.

The following table compares the size of programmes delivered or defined by the companies with the *Quality and Standards II* programme.

Table 8.4: Summary of relative size of Quality and Standards II

	Largest four-year programme	Median four-year programme	Largest four-year programme per connected property
Thames	£2,200m	£1,992m	£540
Severn Trent	£2,773m	£2,078m	£782
United Utilities	£2,509m	£2,174m	£849
Anglian	£1,856m	£1,315m	£841
Yorkshire	£1,727m	£1,236m	£838
Quality and Standards II	£1,930m ³		£833

This shows that *Quality and Standards II* was a very large investment programme. It was larger than the largest programme ever delivered by Anglian Water and Yorkshire Water (the two companies of similar size to Scottish Water). It is also very large in terms of investment per connected property.

³ See footnote 1.

South West Water and Welsh Water have both delivered capital programmes that are very large relative to the areas they cover. This is summarised in Table 8.5.

Table 8.5: Comparison of relative size of Quality and Standards II on a per connected property basis

Company	Number of connected properties	Largest four-year programme	Median four-year programme	Largest four-year programme per connected property
South West Water	0.74 m	£975m	£673m	£1,316
Welsh Water	1.31 m	£1,206m	£1,022m	£917
Wessex Water	1.10 m	£646m	£595m	£589
Northumbrian Water	1.87 m	£990m	£816m	£530
Quality and Standards II	2.32 m	£1,930m ⁴		£833

Even though Scottish Water’s programme is much larger than the programmes of these other smaller companies, it is still significant on a per connected property basis. It does however seem more straightforward for a smaller organisation to deliver capital expenditure.

Scottish Water’s first draft business plan

In its first draft business plan, Scottish Water proposed that it should deliver a *Quality and Standards III* investment programme of approximately £2.2 billion during the next regulatory control period. This was in addition to approximately £260 million of *Quality and Standards II* that would not have been spent. This would equate to a total investment programme of some £615 million per year, or £2.46 billion over the four-year regulatory control period. This is equivalent to more than £1,000 per connected property.

Table 8.4 illustrated that only two of the largest companies south of the border have ever delivered more extensive investment programmes than that which is now proposed by Scottish Water. It is also useful to note that neither of these companies has ever delivered a four-year investment programme of more than £850 per connected property.

The extent of the challenge that Scottish Water sets itself in its first draft business plan is demonstrated in Table 8.6. This shows the frequency with which the five

largest companies south of the border have delivered four-year investment programmes of more than £1.6 billion.

Table 8.6: Delivery of programmes of more than £1.6 billion

Size of four-year investment programme	Size of programme per year	Number of occasions	Cumulative %
Over £2.6 billion	£650m	2	2.4
Over £2.5 billion	£625m	4	4.7
Over £2.4 billion	£600m	6	7.1
Over £2.3 billion	£575m	11	12.9
Over £2.2 billion	£550m	15	17.6
Over £2.1 billion	£525m	23	27.1
Over £2.0 billion	£500m	29	34.1
Over £1.9 billion	£475m	41	48.2
Over £1.8 billion	£450m	44	51.8
Over £1.7 billion	£425m	48	56.5
Over £1.6 billion	£400m	54	63.5
Under £1.6 billion	£400m	31	100.0

This reveals that Scottish Water’s proposed investment programme is almost without precedent in the recent history of the water and sewerage industry in the UK. The privatised companies have delivered programmes of more than £2.4 billion on only six occasions, or 7.1% of all of the possible four-year periods. None of these larger investment programmes has been delivered recently, nor was it as large as the proposed programme of Scottish Water on a per connected property basis.

8.4 Maximum efficient size of a capital investment programme in Scotland

If the investment programme is set at a level that is too ambitious, there is a significant risk that it will not be delivered in full or that it will be delivered inefficiently. In the first case, Scottish Water would not require the full public expenditure that Ministers make available. This is likely to have implications for the balance of Scottish Water’s funding that comes from debt and that which comes from customers’ charges. This would reduce the debt to RCV ratio. In the latter case, there is a chance either that some outputs are not delivered or that further public expenditure is required in order to ensure that the outputs required are delivered in full. We discussed RCV in Volume 3.

⁴ See footnote 1.

The analysis that we have presented concerning delivery of capital programmes south of the border suggests that any significant increase in the *Quality and Standards II* investment programme is likely to increase the risk that the desired investment programme will not be delivered.

The evidence from *Quality and Standards II* is not wholly encouraging. While there does appear to have been a marked acceleration of the capital programme after the appointment of Scottish Water Solutions, a capital programme in excess of £2.0 billion still seems ambitious. Such a programme has been delivered only relatively rarely.

Ofwat has reported that the companies south of the border have achieved significant improvements in their capital expenditure efficiency over the last ten years. It seems that these improvements have been achieved at a time when the companies were required to deliver slightly smaller, although still significant, investment programmes.

At this time we would suggest that £2.1 billion (including the *Quality and Standards II* overhang) would be a relatively optimistic maximum for the capital investment programme for the next regulatory control period. We believe that if Ministers tasked the industry with delivering a much higher level of investment (post-efficiency) than this, then we may have to reduce our efficiency targets. This would adversely impact on customers' bills and may actually lead to fewer outputs being delivered.

It may, however, be possible to reduce the potential organisational bottlenecks to investment delivery. This could mean that a larger programme was deliverable.

We propose to review the available evidence to establish whether there is any reliable correlation between the size of the programme and the efficiency of the companies south of the border. This analysis will inform our *Strategic Review of Charges 2006-10*.

8.5 Conclusion

The *Quality and Standards II* investment programme represented a considerable challenge. It was a larger investment programme than has ever been delivered by companies of a similar size to Scottish Water. Moreover, Scottish Water was tasked with a significant improvement in capital expenditure efficiency. It appears likely that there will be a substantial overhang from *Quality and Standards II* into the next regulatory control period. This overhang is likely to place a limit on the *Quality and Standards III* outputs that can be delivered during this time.

We believe that it is important that we learn from this experience by setting a capital programme that can be delivered efficiently. This is in the longer term interests of customers, the environment and public health.

8.6 Questions for consultation

1. How do respondents believe we should treat the potential overhang from *Quality and Standards II*?
2. Should we learn from this experience in setting the investment programme for the next regulatory control period?
3. What factors should we take into account in establishing the deliverability of the investment programme?
4. Should we adjust the efficiency target if the proposed investment programme is very large?

Section 2: Chapter 9

Defining the investment programme

9.1 Introduction

In Chapter 7 we described the progress we had made in establishing a baseline for the investment programme at the last Strategic Review of Charges. We also discussed the lessons that we have learned from that process. In this chapter we outline the process we propose to adopt in setting a capital investment baseline for the next regulatory control period 2006-10. This process takes full account of experience gained during the current regulatory control period.

This chapter sets out our requirements for the investment plan element of Scottish Water's second draft business plan. We explain that this level of detail is in the interests of all stakeholders, including Scottish Water. Our requirements for the investment plan are broadly consistent with those that are required by Ofwat for the companies south of the border.

The chapter closes by reviewing the timetable for the second draft business plan of Scottish Water and the role of the Reporter in auditing the investment plan.

9.2 Requirements for the baseline capital investment programme

We issued guidance to Scottish Water concerning its second draft business plan on 8 December 2004. Our information requirement for the capital investment programme for 2006-10 is central to that guidance.

A baseline for the capital investment programme is the agreed detailed list of capital projects that Scottish Water will deliver during the next regulatory control period. It is a key part of the regulatory contract between Scottish Water and its customers. The investment plan must be consistent with ministerial guidance¹. This guidance will set out the Scottish Executive's detailed investment priorities.

The baseline investment programme should be clear, comprehensive and accessible. This will allow

stakeholders to monitor Scottish Water's progress in delivering the investment programme. It will also ensure that stakeholders' expectations are met

In Chapter 2 we explained that the investment programme can be split into three main elements:

- capital maintenance;
- quality; and
- supply/demand.

Quality projects are agreed with the Scottish Environment Protection Agency (SEPA) and the Drinking Water Quality Regulator (DWQR). In Quality and Standards II there were around:

- 2,500 capital maintenance projects;
- 1,200 quality investment projects; and
- fewer than 100 supply/demand projects.

The level of definition that is possible for each of these three elements varies. Some projects can be specified in advance, while others may be more reactive². Capital maintenance projects tend to be more difficult to define than quality investment projects.

Our requirements for the investment programme baseline include the following elements:

A detailed list of projects

We require a detailed list of all of the quality projects and supply/demand projects. The detailed list should also include all capital maintenance projects that have a value of more than £250,000.

Each investment project should have:

- a unique code;

¹ Initial guidance was provided by the Minister for Environment and Rural Development, Ross Finnie MSP, in a letter to the Chairman of Scottish Water and the Water Industry Commissioner dated 26 May 2004. Further guidance is expected in January 2005.

² Reactive projects are those associated with operational needs which arise at short notice: for example, replacing a piece of plant or section of pipe which has failed unexpectedly or where operational performance has declined over a short period of time.

- unique name; and
- a geographical reference (place name and water supply zone/drainage area).

Capital maintenance expenditure of less than £250,000 does not need to be defined at a project level, but has to be grouped into broad output categories.

Such clear definition ensures that stakeholders can examine the status of a given project and track its progress.

Defined outputs for each individual project

All projects should have pre-agreed, defined and discrete outputs. This ensures that all planned investment outputs are covered within discrete, single projects.

Scottish Water's investment plan is likely to be complex and large. Stakeholders will want to ensure that projects to address a particular local need are clearly identifiable in the baseline. By requiring clear links between outputs and individual projects we should avoid overlap between projects in Scottish Water's baseline.

Clear definition of capital maintenance

All capital maintenance projects should identify clearly:

- the work proposed (its size, quantity and type); and
- whether the project is planned or reactive; and
- the cost.

We need to ensure that adequate funds are available for maintenance, and that we can monitor Scottish Water's progress in maintaining its assets. By asking for details of the proposed maintenance work and its cost, we expect to ensure that funding from customers is adequate and is used for the purpose intended.

Clear definition of the outputs of planned maintenance

This should include the following elements:

- an appropriate measure of the output (for example the length of main relined), and
- the number of units of that measure that the project delivers (for example five km).

We will monitor outputs and spending to ensure that Scottish Water uses capital maintenance investment appropriately and delivers anticipated benefits to customers.

Definition of quality and supply/demand drivers and costs

Quality and supply/demand activity should be clearly identified and costed.

This should include:

- information about which agreed 'drivers' are generating the project; and
- an allocation of costs to the main drivers.

Definition of quality and supply/demand outputs

This should include:

- an appropriate measure of the output (for example, the volume of water delivered to customers that will become compliant with the required standard as a result, or the population that will benefit from improvements at a sewage treatment works to meet environmental standards); and
- the number of units of that measure that the project delivers.

This information will provide stakeholders with a clear list of the benefits of the agreed investment programme. It also allows stakeholders to monitor progress towards delivery of those outputs.

Clear allocation of costs to drivers

Each specified project requires:

- a primary driver of a project;
- a clear statement of any secondary drivers that may influence the scale and nature of the project; and
- the allocation of project expenditure to the primary and secondary drivers.

This enables stakeholders to understand the costs of meeting different investment objectives.

Separation of capital maintenance and other investment drivers costs

We expect the costs of quality enhancements or supply/demand expenditure to be reflected only in the marginal extra cost after the cost of any maintenance activity that is already planned at the asset.

This will ensure that we can distinguish between maintenance and other costs.

Profile of project delivery

The timetable for the delivery of projects should include:

- annual projected investment spend for each project – this should include any expenditure either before or after the regulatory control period;
- identification of key project milestones (for example when planning consent is granted); and
- the expected completion date of the project.

This helps us to monitor progress in the delivery of projects, both in terms of time (ie, is the project delayed?) and spend (ie, is spending above or below the expected amount?).

Similar information for all projects included in overhang from Quality and Standards II

It appears likely that the *Quality and Standards II* investment programme will not have been delivered in full by April 2006. Our analysis of the first *Quality and*

Standards II projects that have been completed also suggests that the capital efficiency targets set in the *Strategic Review of Charges 2002-06* may not be met. Any remaining outputs from the *Quality and Standards II* programme will have to be delivered during the 2006-10 regulatory control period. This will mean that less of the proposed *Quality and Standards III* investment programme can be delivered before 2010. It is therefore critical that we have a complete and detailed list of those elements of *Quality and Standards II* that remain to be delivered.

The detailed format for the investment baseline is reproduced in Appendix 1.

9.3 The benefits of our proposed approach to establishing the baseline

We believe that, although detailed, the definition of the capital programme that we require is proportionate. It is in the interests of all stakeholders, including Scottish Water, that the investment programme is clearly defined. This definition must be sufficient to minimise future disagreements about the scope or scale of the agreed investment programme.

Meeting the needs of customers and stakeholders

We have discussed the information requirements of the baseline capital investment programme with SEPA and the DWQR. They have specific needs which we have incorporated into the baseline so that they can monitor the delivery of outputs expected by Ministers. Such project-specific information is required to ensure that the appropriate drinking water quality and environmental standards are met.

Customers will also expect to be able to assess whether projects are delivered on time. This is particularly important where projects have a direct impact on the local service that customers receive.

Both customers and stakeholders will expect investment to be delivered as efficiently as possible. This should increase the extent of improvements in levels of service to customers and the environment that Scottish Water can deliver.

The baseline must contain clear and detailed information about project outputs, timeframes for delivery, and costs if it is to meet the needs of stakeholders.

The requirement for inputs and outputs to be monitored

We are proposing to monitor both inputs and outputs. By inputs we mean the list of investment projects that Scottish Water plans to undertake. By outputs we mean desired outcomes such as cleaner beaches, better water quality and improved customer service.

Ideally, we would wish to restrict our monitoring to outputs alone, but this is likely to increase the scope for disputes about whether or not the investment programme has been delivered. As such, we believe that the customer interest is best served by requiring Scottish Water to deliver an agreed list of inputs.

Consistency of cost estimates with Scottish Water's cost base

In Chapter 11 we describe Ofwat's cost base approach to comparing capital procurement costs for a set of standardised projects. We propose to adopt this approach in assessing Scottish Water's relative procurement efficiency.

We will therefore need to ensure that the cost estimates in Scottish Water's investment programme are fully consistent with the information contained in Scottish Water's cost base. The detailed list of investment projects and their costs will allow us to check the consistency of the cost base and the costs of the investment projects.

The proportionality of our proposed approach

Capital investment is the single largest component of Scottish Water's expenditure. In recent years, capital investment in the Scottish water industry has ranged from £360 million to £460 million a year. It is reasonable for customers and stakeholders to expect clear information about when the benefits of investment will be delivered.

We accept that it may not be practical for Scottish Water to provide detailed information about its entire programme, as some capital maintenance activity is reactive. For example, if a major sewer collapses then capital maintenance would be required to fix it; clearly, however, the location and nature of this work could not have been known in advance. In such circumstances, we expect Scottish Water to assess the expected level of reactive capital maintenance and to break it down both into categories of spend and into geographical areas, with appropriate justifications. This information will allow us to monitor this type of capital investment and to draw comparisons with England and Wales.

We have attempted to strike a balance between the needs of stakeholders and the reporting burden on Scottish Water. We believe that by allowing Scottish Water to combine very small capital maintenance projects for reporting purposes, we have significantly reduced Scottish Water's information burden, without compromising the benefits of the investment programme baseline.

9.4 Ofwat's information requirements

We believe that our information requirements are very similar in scope and content to those that are required by Ofwat for the companies in England and Wales. This reinforces our view that our information request is proportionate.

For its 2004 price review, Ofwat initially required companies to submit detailed investment plans (for water and wastewater). The companies were required to submit three versions of their investment plans – 'Reference plan A', 'Reference plan B' and a preferred strategy. The reference plans looked at specified quality improvements with reference level assumptions for certain key issues. These were provided to help inform ministerial guidance to Ofwat, the Environment Agency, and the Drinking Water Inspectorate.

Ofwat required the companies to include the following information in their investment plans:

- the specific legal obligation (for quality projects) or the reason the changes or work on the assets is required

(for other cost categories) explained with reference to cost drivers;

- the asset improvement(s) associated with the investment;
- the measurable output(s) or activity that will be delivered (for quality and where applicable for other projects);
- the due or expected dates for completion or delivery;
- milestone dates for significant projects (ie those with a capital value in excess of 1% of the service turnover);
- the profile of the capital expenditure and additional operating costs; and
- the defined geographical area for work on infrastructure or benefiting from work on non-infrastructure assets.

Companies provided this information on a project-by-project basis, but could combine projects of a value of less than £250,000 in a defined geographic area. Ofwat defined geographic areas as:

- water supply zones (for drinking water quality);
- water resource zones (for supply/demand, security of supply and environmental impact);
- distribution zone study areas (for any work on the distribution system, including infrastructure renewals and quality related work); and
- sewerage drainage areas (all sewerage service projects).

Ofwat required companies to allocate costs proportionally across drivers. Environmental drivers were initially ranked by the Environment Agency, and for these drivers companies were then asked to first assign costs to the highest ranked driver. The costs assigned to the next highest ranked driver were then the net additional costs of delivering these improvements over

and above those delivered by the highest ranked driver. This system of cost allocation continued for as many drivers as were identified for each project. Companies were also required to identify and allocate maintenance and growth costs of quality enhancement projects.

The companies submitted their final plans with their second draft business plans in April 2004.

9.5 The process for defining the baseline investment programme

Scottish Water submitted its first draft business plan on 29 October 2004. This plan contained its initial investment plan proposals, based on the expected outcome from *Quality and Standards III*. We reviewed these proposals and published our response on 3 December 2004.

Scottish Water's second draft business plan is due to be submitted to us on 20 April 2005. This will contain an updated version of Scottish Water's proposed investment plan. In particular, this second plan should be fully consistent with Ministers' guidance.

We expect that this guidance will include:

- the extent of investment that Scottish Ministers consider desirable given the need to ensure both that the investment can be delivered in the four-year period and that it represents value for money;
- the required output, in terms of the performance of the network, from capital maintenance activity;
- the required improvement in the level of service provided to customers (this includes issues such as water pressure, sewer flooding and odour control);
- the outputs required from investment to improve water quality;
- the outputs required from investment to improve the environment;
- how currently perceived or actual constraints on development (both for housing and business) should be addressed; and

- whether, and, if so, with what priority requests for first time connection to the public water and sewerage system should be met.

Our guidance for the second draft business plan was issued on 8 December 2004. The format for the investment plan is attached at Appendix 1.

Scottish Water is required to submit detailed information to support its planned investment programme. We will ask the Reporter to carry out a detailed review of Scottish Water's investment programme, with particular emphasis on:

- an audit and challenge of the scope of requirements;
- an audit and challenge on the technical solutions proposed;
- an audit and challenge of the basis of cost estimates and their consistency with Scottish Water's cost base and;
- commentary on the overall size of the proposed programme.

We will ask the Reporter to draw on his experience with other companies in carrying out this review. In the next chapter, we set out how the Reporter's work will help us to finalise the baseline investment programme.

9.6 Summary

We have set out in this chapter the level of definition that we propose to use in specifying the baseline investment programme for the *Strategic Review of Charges 2006-10*.

The level of detail required is consistent both with the lessons learned from *Quality and Standards II* and the reporting burden on the companies in England and Wales.

9.7 Questions for consultation

1. Is the proposed degree of definition for the baseline investment programme sufficient?
2. If not, what other information should be captured, and why?
3. Would respondents agree with the rationale given in this chapter for the extent of definition of the baseline investment programme? In particular, is the reporting burden on Scottish Water appropriate?

Section 2: Chapter 10

Investment programme review

10.1 Introduction

In Chapters 7 and 9 we explained the importance we attach to ensuring that there is a fully defined capital investment programme for the *Strategic Review of Charges 2006-10*. This chapter explains how we will review the draft investment programme and finalise the baseline investment programme.

The chapter first outlines why we consider that it is necessary to review the investment programme. In particular, we explain how the review process will ensure that the proposed investment programme is consistent with ministerial guidance.

The chapter continues with a discussion of the techniques used by other regulators to review the draft investment programmes that regulated companies provide. We discuss the suitability of these approaches for the Scottish water industry, then outline our proposed approach to reviewing Scottish Water's investment programme. This chapter explains how we propose to work closely with the Reporter, the Scottish Environment Protection Agency (SEPA) and the Drinking Water Quality Regulator (DWQR), and why their involvement is critical to ensuring a thorough review of the investment programme.

Programme review is the first step in ensuring that Scottish Water's capital investment proposals meet the requirements of stakeholders and provide value for money for customers. It ensures that the scope of the proposals is appropriate to achieve the objectives set out by Ministers, and that the proposed expenditure is being effectively targeted.

10.2 The importance of reviewing the proposed investment programme

The guidance from the Scottish Ministers is likely to be at a relatively high level; it is likely to include objectives relating to meeting the requirements of water quality and environmental legislation, providing improved customer service and ensuring adequate levels of network maintenance.

Scottish Water will be required to translate this set of objectives into a fully defined, project-level investment programme in its second draft business plan. We intend to review Scottish Water's proposals to ensure that they meet the required objectives in the most effective way possible. This will help ensure that costs to customers are minimised and that stakeholders' requirements are met.

Our review of the investment programme is designed to ensure that it is effective and that it meets the requirements which have been set out in the ministerial guidance. It is important to make sure that the programme delivers the outputs and objectives set by the industry stakeholders. It will also be important to identify and remove any outputs that are not consistent with the Ministers' guidance.

If we do not first establish that the programme will deliver the agreed outputs effectively, the efficiency analysis that we undertake would be compromised. There is no point in delivering an ineffective investment plan efficiently.

In assessing the effectiveness of the investment programme, we will be looking to establish the following:

- Does the programme meet the objectives set out in Ministerial Guidance?
- Does it meet these objectives in the most effective way possible?
- Are stakeholders content that the proposed programme delivers the agreed objectives in an effective way?
- Is any of the proposed investment associated with outputs which lie outwith the requirements of the investment period?
- Are the proposed timescales for delivering the investment realistic?

10.3 How other regulators review and verify investment proposals

Industries with relatively large capital investment programmes, such as water and rail, are subjected to a higher degree of regulatory scrutiny of investment proposals than other regulated industries. Significant capital expenditure necessitates a detailed understanding of the way in which investment is prioritised and targeted.

In this section we discuss the approaches to verifying investment programmes that are used by the Office of the Rail Regulator (ORR), (from Summer 2004, the ORR became the Office of Rail Regulation), and Ofwat.

Office of the Rail Regulator

In December 2003, the ORR published its final conclusions on its 'Access charges review'. This periodic review determines the access charges that the train operating companies are required to pay to Network Rail as the owner and operator of the rail network.

A critical part of the access charges review was the ORR's analysis of Network Rail's requirements for capital investment in the areas of network maintenance and renewals for the period 2004-09. There were two elements to this analysis:

- a review of Network Rail's proposed network maintenance and renewals activity levels; and
- a review of the unit costs associated with this network maintenance and renewals activity.

Network Rail's allowed revenue for the maintenance and renewals programme was affected by both of these elements. In its business plan, Network Rail had put forward plans to carry out more maintenance and renewals activity than its predecessor, Railtrack, had thought was necessary. The proposed activity levels were also higher than ORR itself had assumed in the 2000 access charges review. As a result, ORR took the view that before applying efficiency to the programme, it would be sensible to review the assumptions underpinning Network Rail's proposed activity levels. In

other words, ORR wished to ensure that the programme of work proposed by Network Rail was robust.

Network Rail's work programme forecasts were divided into two parts:

- For the first two years (2004-05 and 2005-06), the work programme was based on proposals for actual physical work; and
- For the remaining three years (2006-07, 2007-08 and 2008-09), the work programme was derived from forecasting models, which incorporated a number of assumptions.

ORR carried out a detailed project level review of the work proposed for the first two years. For the remaining three years, ORR focussed on the modelling assumptions that Network Rail had used in its forecasts. In carrying out all of this work, ORR used consultancy expertise including Halcrow, TTCI and L.E.K. The ORR also consulted with stakeholders such as the Strategic Rail Authority and the Health and Safety Executive. The results of the review of activity levels are shown in Table 10.1.

Table 10.1: Impact of ORR's capital programme verification

	2004-05	2005-06	2006-07	2007-08	2008-09
Network Rail's business plan projections	£4,043m	£4,534m	£5,469m	£5,423m	£5,333m
ORR projected savings	£640m	£945m	£1,637m	£1,439m	£1,484m
Reduced programme	£3,403m	£3,589m	£3,832m	£3,984m	£3,849m
Reduction	-16%	-21%	-30%	-27%	-28%

ORR applied efficiency targets to the reduced investment programme.

This two-stage process, involving programme verification then an efficiency assessment, is consistent with our proposals for Scottish Water.

Office of Water Services

Ofwat carries out a similar review of the companies' capital investment programmes before it applies its

capital efficiency targets. In its final determinations¹ of price limits for the companies south of the border, Ofwat noted that it had included in price limits either in full or in part, most of the quality and environmental schemes that companies had put forward in their business plans. This refers to the number, not the cost, of schemes put forward by the companies. Table 10.2 indicates the impact on costs of Ofwat's review of the investment programme.

Table 10.2: Impact of Ofwat's capital programme verification

Companies' business plans – gross costs	Ofwat's assumptions – gross costs	Difference in costs	Difference in costs
£7,080m	£6,068m	£1,012m	14%

Ofwat reduced the costs associated with the companies' maintenance, quality, environmental and customer service improvements by around 14%, before applying any efficiency targets.

It set out clear criteria by which it would assess whether projects and costs should be included in the capital investment programme. To be included, all proposals had to meet the following criteria²:

- “they are required by the quality regulators, and confirmed by Ministers, or are new obligations under current legislation;
- they deliver a measurable defined output, which is enforceable;
- they have a clearly defined timetable and due date for delivery in line with regulations or other legislation;
- they have defined asset improvements or changes to operational procedures to deliver the output; and
- they have identified costs for the proposed solution which must have been challenged and validated by the company's Reporter.”

This approach is similar to that which Ofwat adopted at the 1999 price review. At that time a similar review of the companies' business plans led to an initial reduction in the investment plans of more than 10%.

10.4 Our proposed approach to reviewing the investment programme

Our aim is to ensure that customers and stakeholders receive the maximum possible benefit from Scottish Water's capital investment.

We do not have detailed technical knowledge of the projects that comprise the investment programme, nor of their impact on water quality and the environment. We therefore propose to work with the Reporter, SEPA and DWQR to review Scottish Water's investment.

We would look for their assurance that the ‘quality’ element of Scottish Water's investment proposals meets the objectives outlined in the Ministerial Guidance. This may identify scope for new projects to be added to the agreed investment programme.

It will also be important to establish that the programme meets the needs of customers and other stakeholders. We need to be assured that the proposed investment is consistent with the capital maintenance objectives set out in the Ministerial Guidance and will deliver the required improvements in customer service, water quality and environmental performance.

The use of the Reporter would also be consistent with practice in England and Wales. We propose to provide guidance to the Reporter on requirements for this review. We will ask the Reporter to work with SEPA and DWQR to confirm that Ministers' water quality and environmental objectives will be met by the proposed investment programme. We would also expect the Reporter to highlight any areas where we may need to seek further advice on the appropriateness of proposed investment projects.

¹ Ofwat, *Future water and sewerage charges 2005-10: Final determinations*, December 2004.

² Ibid, pp192.

10.5 Review of the investment plan

We propose to use the following criteria in our review of the investment programme:

- Is the programme sufficiently defined to allow customers and stakeholders to monitor delivery? In particular, does it meet the level of definition set out in our guidelines³?
- If delivered in full, does the proposed programme meet the objectives set out in Ministerial Guidance? If not, what are the omissions? If so, does it exceed the requirements? In particular, do the quality regulators, SEPA and DWQR, agree that the relevant quality objectives will be met by the proposed investment?
- Are there projects in the programme which do not contribute to the required objectives?
- Are there errors in the programme: for example, in the identification of projects and the associated outputs?
- Is the programme properly costed?
- Are the solutions proposed by Scottish Water appropriate?
- Do they represent best practice?
- Are the proposed solutions supported by the DWQR and SEPA?
- Have the projects in the programme been allocated measurable, defined outputs?
- Do the projects have clearly defined delivery dates?
- Are the delivery dates realistic, both in terms of individual project construction times and the overall industry capacity to deliver the programme efficiently?

The process of reviewing the investment programme will provide us with an indication of areas where there is

scope to reduce or increase the outputs required from Scottish Water.

The output from the review should be a properly costed, fully defined list of capital investment projects, which, if delivered in full, will meet the objectives set out by Ministers for the regulatory control period.

10.6 Summary

The review of the proposed investment programme is a key step in ensuring that Scottish Water's capital investment proposals meet the requirements of stakeholders and represent value for money for customers.

Other regulators also review companies' capital expenditure proposals. We propose to use the Reporter to carry out this review. This is consistent with the approach adopted by Ofwat.

This review may lead us to seek modifications to Scottish Water's capital expenditure proposals. The revised programme will then form the baseline to which we can apply targets for capital efficiency.

10.7 Questions for consultation

1. Do respondents agree with our proposed use of the Reporter to carry out the process of verifying Scottish Water's capital investment proposals? If not, which other party do you think should be used for this exercise and why?
2. Do respondents have comments on our proposed programme review process?
3. Does it meet the needs of customers and stakeholders?
4. Are the proposed areas of assessment sufficient to ensure that the programme is deliverable, takes full account of potential synergies and will meet the objectives set out by Ministers?

³ See Chapter 9.

Section 3: Chapter 11

How Ofwat assesses capital expenditure efficiency

11.1 Introduction

In previous chapters we discussed our proposals to establish an effective baseline for the capital investment programme. In this chapter we examine different ways to assess the scope for capital efficiency. By capital efficiency we mean the scope for delivering the same set of objectives from the investment programme, but for less money.

In this chapter we explain how Ofwat establishes the scope for capital efficiency for the companies in England and Wales. Capital efficiency can be achieved in a number of ways, including improved strategic and project planning, better procurement and the use of innovative techniques. Inefficient spending results in higher bills and/or reduced outputs. Customers will expect Scottish Water to deliver its agreed investment programme.

The methods that Ofwat uses have been developed over a number of years and are used in the price setting process south of the border. We have used Ofwat's methods to monitor Scottish Water's progress towards achieving the efficiency targets set in the *Strategic Review of Charges 2002-06*. We report on Scottish Water's performance on capital efficiency in our Costs and Performance Reports¹.

This chapter considers the current methods that Ofwat uses and their possible application in Scotland. It includes:

- how capital efficiency assessment fits into Ofwat's overall framework for assessing the companies requirements for capital expenditure;
- what we mean by benchmarking;
- the Ofwat methods of benchmarking; and
- how Ofwat's methods might be applied to the water industry in Scotland.

It is important that the methods we use to assess capital expenditure efficiency are robust. The impact of efficiency targets can be significant. For example, in the *Strategic Review of Charges 2002-06* we set Scottish Water a target of delivering the *Quality and Standards II* programme for £500 million less than the cost estimated by the three former authorities. We have reviewed the methods used by Ofwat and other regulators to ensure that we use an appropriate approach in the *Strategic Review of Charges 2006-10*.

11.2 Ofwat's approach to assessing capital expenditure requirements

Ofwat adopt a four-stage approach to determining the capital expenditure requirements of the companies in England and Wales. The assessment of the scope for capital efficiency is the third of the four stages. Ofwat adopts different approaches for capital maintenance expenditure and for capital enhancement expenditure.

Capital maintenance

Ofwat employs a four-stage approach linked to the UKWIR common framework for capital maintenance planning². The overall aim of this approach is to ensure that the companies maintain their assets in such a way that appropriate levels of customer service and environmental performance are achieved over the long term. Performance is measured by Ofwat's 'serviceability indicators'.

The four stages of Ofwat's approach are:

- Stage A: Maintaining serviceability to customers to date
- Stage B: Is the future period different?
- Stage C: Scope for improvements in efficiency
- Stage D: Impact of the enhancement programmes

¹ *Costs and Performance Reports 2001-02* and *2002-03* published by this Office and available on our website at www.watercommissioner.co.uk

² See Chapter 3 of this document for details of the UKWIR capital maintenance common framework approach.

We described Stages A, B and D of Ofwat's approach, and the UKWIR common framework, in Chapter 3 when we considered the scope for efficiency in capital maintenance. Our focus in this chapter is on Stage C of Ofwat's approach.

Quality investment

Ofwat uses a two stage approach in determining the scope for efficiency in the delivery of the quality investment programme. The first stage of Ofwat's approach is a detailed review of the investment programme to ensure that the objectives set by Ministers and the appropriate quality regulators will be met. We described Ofwat's review of the investment programme in the previous chapter. Ofwat then uses 'benchmarking' techniques to assess the scope for improvements in capital enhancement expenditure efficiency for each company.

Benchmarking

Benchmarking is the process of comparing performance across (or within) organisations. Ofwat uses a 'top-down' approach when benchmarking the English and Welsh companies and setting efficiency targets for both capital maintenance and quality spend. This involves using high level comparisons of costs and performance between companies to establish relative efficiency.

For benchmarking capital expenditure efficiency, Ofwat uses two different techniques:

- econometric modelling; and
- capital works unit costs ('the cost base').

Ofwat makes separate assessments of relative efficiency for both the water and the wastewater service. Econometric modelling is used to assess relative efficiency in capital maintenance. The cost base is used to assess relative efficiency in both capital maintenance and capital enhancement expenditure.

11.3 Capital maintenance econometrics

Ofwat's econometric modelling uses statistical regression analysis to establish a relationship between the costs incurred by companies and a defined set of cost drivers. These cost drivers take account of the factors (beyond the control of management) that could influence a water and wastewater company's requirement for capital maintenance.

The econometric models used by Ofwat were originally used in the 1999 price review, and published in April 1998³. The models were developed further with the assistance of Professor Mark Stewart from the University of Warwick. In 2003, Ofwat conducted a detailed review of the models, in consultation with industry representatives, to prepare for the 2004 price review. Ofwat published the final form of the econometric models for the 2004 price review in January 2004⁴.

Although similar to the models which Ofwat published in April 1998, the 2004 models have been re-estimated using 1997-98 'explanatory factors' (see below) and five-year average expenditure for the period 1998-99 to 2002-03⁵. The explanatory factors are taken from the year prior to the first year of expenditure. Average expenditure is used to take account of annual variations in capital maintenance expenditure.

For the purposes of price setting, Ofwat also takes into account the companies' projections for 2004-05 and its own assessment of capital maintenance needs up to March 2010. This enables Ofwat to calculate a 12-year average, reflecting both actual and projected spend equally.

There are nine models for capital maintenance expenditure:

- water resources and treatment;
- water distribution infrastructure;

³ *Assessing the scope for future improvements in water company efficiency: a technical paper*. Ofwat, 30 April 1998.

⁴ *Water and sewerage service unit costs and relative efficiency 2002-03 report*. Ofwat, 22 January 2004.

⁵ In the 2004 price review, an additional year of expenditure data (2003-04) was available to Ofwat, so it re-estimated the models using six-year average expenditure.

- water distribution non-infrastructure;
- water management and general;
- sewerage infrastructure;
- sewerage non-infrastructure;
- sewage treatment;
- sludge treatment and disposal; and
- sewerage management and general.

The purpose of each model is to establish a relationship between the costs reported by the companies and external cost drivers. These cost drivers have a significant impact on costs but are outside the control of the management of the company. By controlling the principal external cost drivers in the models, Ofwat can determine relative efficiency with a high degree of accuracy.

The cost drivers that are included within the econometric models are known as 'explanatory factors'. The models themselves take different forms. These are summarised in Table 11.1.

Table 11.1: Summary of econometric models and explanatory factors

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

Each of these models is described below.

Water resources and treatment

This model predicts the costs of maintaining those assets from which water is sourced (such as dams and aqueducts) and where water is treated (such as water treatment works and associated pumping stations). The model assumes constant returns to scale in capital maintenance expenditure. The number of connected properties is used to represent company size.

Table 11.2: Ofwat's model for water resources and treatment capital maintenance expenditure

Water resources and treatment	
This is a unit cost model. Each company's average annual water resources and treatment capital maintenance expenditure is divided by the total connected properties. This is then compared with the weighted average industry cost.	
£m/million properties	Weighted average industry cost = 8.471
Number of observations: 22	

Water distribution infrastructure

This model predicts the costs of maintaining the network of water mains. The main cost driver in this model is the log of connected properties per length of main.

Table 11.3: Ofwat's model for water distribution infrastructure capital maintenance expenditure

Water distribution infrastructure		
Modelled cost	Log to base e of (annual average water distribution infrastructure functional expenditure (£m), divided by length of main (km))	
Explanatory variables	Coefficient	Standard error
Constant	-4.802	0.542
Log to the base e of (total number of connected properties per length of main, divided by total length of main (km))	0.888	0.200
Form of model	Log to base e of (annual average water distribution infrastructure functional expenditure (£m), divided by length of main (km)) = -4.802 + Log to the base e of (total number of connected properties per length of main, divided by total length of main (km)) x 0.888	
Statistical indicators	Number of observations: 22	R ² : 0.496

Water distribution non-infrastructure

This model predicts the costs of maintaining the non-infrastructure assets related to water distribution, such

as service reservoirs, pumping stations and meters. The model recognises that capital maintenance expenditure increases with pumping station capacity and water storage capacity.

Table 11.4: Ofwat's model for water distribution non-infrastructure capital maintenance expenditure

Water distribution non-infrastructure		
Modelled cost	Log to base e of (annual average water distribution non-infrastructure functional expenditure (£m), divided by pumping station capacity (kW))	
Explanatory variables	Coefficient	Standard error
Constant	-6.433	0.533
Log to the base e of (water service reservoir and water tower storage capacity/pumping station capacity)	0.664	0.207
Form of model	Log to base e of (annual average water distribution non-infrastructure functional expenditure (£m), divided by pumping station capacity (kW)) = $-6.433 + \text{Log to base e of (water service reservoir and water tower storage capacity/pumping station capacity)} \times 0.664$	
Statistical indicators	Number of observations: 22	R ² : 0.338

Water management and general

This model predicts the costs of maintaining assets that are used in the management function of the water business, such as IT equipment, buildings and vehicles. The model relates costs to the size of the company (using the number of billed properties to represent company size) and recognises that costs increase with a greater proportion of business customers.

Table 11.5: Ofwat's model for water management and general capital maintenance expenditure

Water management and general		
Modelled cost	Log to base e of (annual average water management and general expenditure (£m), divided by billed properties (thousands))	
Explanatory variables	Coefficient	Standard error
Constant	-5.874	0.443
Proportion of properties that are non-household	13.020	5.815
Form of model	Log to base e of (annual average water management and general expenditure (£m), divided by billed properties (thousands)) = $-5.874 + \text{proportion of properties that are non-household} \times 13.020$	
Statistical indicators	Number of observations: 22	R ² : 0.200

Sewerage infrastructure

This model predicts the costs of maintaining the sewer network. The model recognises that capital maintenance expenditure on sewerage infrastructure increases with company size and uses sewer length as a proxy for company size. Combined sewers are recognised as having higher maintenance costs than foul sewers; the number of combined sewer overflows is used in the model as a proxy for the length of combined sewers. In addition, the higher maintenance cost of critical sewers (relative to non-critical sewers) is taken into account in the model.

Table 11.6: Ofwat's model for sewerage infrastructure capital maintenance expenditure

Sewerage infrastructure		
Modelled cost	Log to base e of (annual average sewerage infrastructure expenditure (£m), divided by the total length of sewer (km))	
Explanatory variables	Coefficient	Standard error
Constant	-6.760	0.278
Log to the base e of (the number of combined sewer overflows divided by the total length of sewer (km))	0.371	0.059
Proportion of critical sewers	1.813	0.726
Form of model	Log to base e of (annual average sewerage infrastructure expenditure (£m), divided by the total length of sewer (km)) = $-6.760 + \text{log to the base e of (the number of combined sewer overflows divided by the total length of sewer (km))} \times 0.371 + \text{proportion of critical sewers} \times 1.813$	
Statistical indicators	Number of observations: 63	R ² : 0.427

Sewerage non-infrastructure

This model predicts the costs of maintaining the non-infrastructure assets of the sewerage service, which are largely sewage pumping stations. The model is based on the premise that capital maintenance expenditure increases uniformly with the number of pumping stations.

Table 11.7: Ofwat's model for sewerage non-infrastructure capital maintenance expenditure

Sewerage non-infrastructure	
This is a unit cost model. Each company's average annual sewerage non-infrastructure capital maintenance expenditure is divided by the total number of pumping stations. This is then compared with the weighted average industry cost.	
£m/number of pumping stations	Weighted average industry cost = 2.813
Number of observations: 10	

Sewage treatment

This model predicts the costs of maintaining sewage treatment works. The model recognises that maintenance costs increase with the volume of sewage that is treated. In addition, the model takes into account the economies of scale from maintaining a few large works compared with maintaining a large number of smaller works.

Table 11.8: Ofwat's model for sewage treatment capital maintenance expenditure

Sewage treatment		
Modelled cost	Log to base e of (annual average sewage treatment functional expenditure (£m), divided by the total load received at sewage treatment works)	
Explanatory variables	Coefficient	Standard error
Constant	-8.373	0.293
Log to the base e of (the total number of works divided by total load received at sewage treatment works)	0.169	0.043
Form of model	Log to base e of (annual average sewage treatment functional expenditure (£m), divided by the total load received at sewage treatment works) = -8.373 + log to the base e of (the total number of works divided by total load received at sewage treatment works) x 0.169	
Statistical indicators	Number of observations: 60	R ² : 0.210

Sludge treatment and disposal

This model predicts the costs of maintaining the assets used for sludge treatment and disposal. The model is based on the premise that capital maintenance expenditure increases uniformly with the total weight of dry solids that is disposed of.

Table 11.9: Ofwat's model for sludge treatment and disposal capital maintenance expenditure

Sludge treatment and disposal	
This is a unit cost model. Each company's average annual sludge treatment and disposal capital maintenance expenditure is divided by the total weight of dry solids disposed of. This is then compared with the weighted average industry cost.	
£000/weight of dry solids	Weighted average industry cost = 67.994
Number of observations: 10	

Sewerage management and general

This model predicts the costs of maintaining those assets used in the management function of the sewerage business, such as IT equipment, buildings and vehicles. The model relates costs to the size of the company and uses the number of billed properties to represent company size.

Table 11.10: Ofwat's model for sewerage management and general capital maintenance expenditure

Sewerage management and general	
This is a unit cost model. We calculate each company's average annual sewerage management and general capital maintenance expenditure on a per billed property basis. This is then compared with the weighted average industry cost.	
£m/million billed properties	Weighted average industry cost = 7.647
Number of observations: 10	

We discuss the application of Ofwat's capital maintenance econometric models in Scotland in Chapter 13.

11.4 Capital works unit costs

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

The cost base is a database of costs, termed 'standard costs', for a wide range of standardised projects, or units of work. These standardised projects are typical of investment in the water industry. There are standardised projects for the water and sewerage services, and maintenance and quality investment. Ofwat can

compare the standard costs submitted by the water companies to assess relative procurement efficiency.

The cost base was first used at the 1994 price review and has been used at the 1999 and 2004 price reviews. Although Ofwat has refined the cost base approach over this time, the broad approach remains the same.

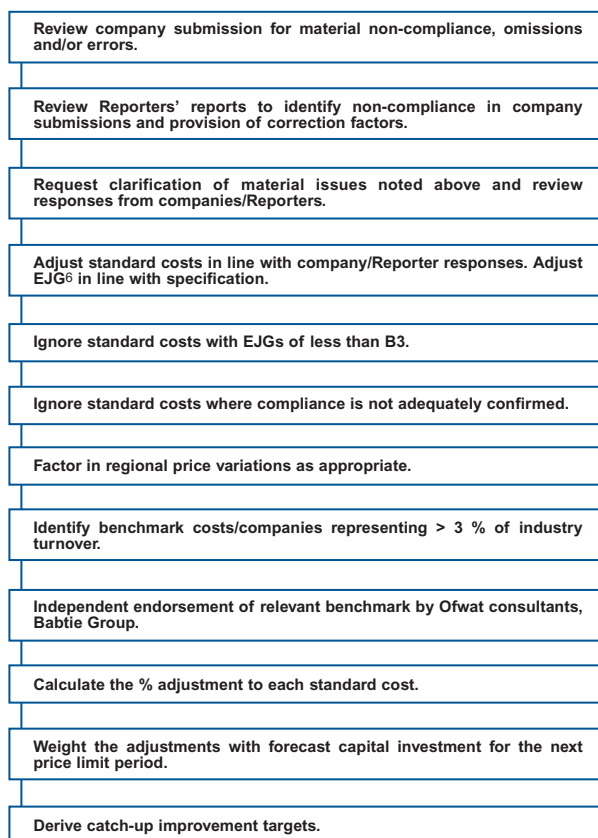
Prior to the 2004 price review, Ofwat consulted with the industry on the format and the content of its cost base information requirement. This consultation identified a need for a number of new standard costs and for modifications to some of the existing standard costs. These changes ensured that the cost base would be consistent with the companies' investment plans. The changes were included in the final business plan reporting requirements.

The cost base approach to assessing relative efficiency has been subject to detailed scrutiny by the Monopolies and Mergers Commission and the Competition Commission. Both found the approach to be fit for purpose.

For the 2004 price review, companies submitted draft standard costs to Ofwat in March 2003. Ofwat published the results of its analysis of these cost base submissions in May 2003. The companies had the opportunity to revise their cost base submissions in their draft and final business plans.

Ofwat described its approach to analysing the cost base in its response to the companies on their initial standard costs submission. The approach is summarised in Figure 11.1.

Figure 11.1: Ofwat's cost base approach



Review the submissions

Ofwat reviews the submissions received from the companies in order to:

- ensure that the standard costs which are submitted comply with the specifications and guidance;
- ensure that the engineering judgement grades have been correctly applied and interpreted;
- confirm that companies have derived their standard cost estimates independently;
- subject all submissions to an independent audit; and
- ensure comparability between companies.

⁶ Engineering Judgement Grades – these are 'confidence' scores that are assigned to the information contained in the submission.

Company-specific factors

In its 2004 price determination, Ofwat allowed only one company-specific factor – an adjustment for regional variations in construction, labour and tender costs. Ofwat has based its assessment of these adjustments on a study of the building and construction cost indices which was published by the Building Cost Information Service and the Department of Trade and Industry.

Regional price factors were applied to the typical civil construction and plant installation elements of each standard cost submitted by the company. This generated company-specific regional price adjustments. The company-specific regional price adjustments ranged from 0.8-17.5% in the water service and 1.7-15.7% in the sewerage service.

Ofwat has not published detailed information about its methodology for calculating these price adjustments, nor has it published a list of the companies that were allowed adjustments.

Benchmark selection

Ofwat chooses as benchmark standard costs the lowest reported cost, provided it complies with the following criteria:

- the standard cost used to derive the benchmark closely complied with the standard cost specification;
- at least 3% of the industry (measured in terms of turnover) reported unit costs at or below the benchmark standard cost;
- the standard cost was of sufficient robustness to warrant an EJG of B3 or better;
- single company standard costs were generally used to derive the benchmark for items commonly procured from a single source over a range of sizes; and
- the relevant benchmark is independently endorsed by consultants to Ofwat, Babbie Group.

In addition, at the 2004 price review, Ofwat asked Babbie Group to compile their own cost estimates for each standard cost in advance of the company submissions being received. These estimates were used to test the appropriateness of the benchmark choice.

Calculation of the targets for catch-up improvement

Ofwat sets capital efficiency targets having:

- calculated the adjustment for each standard cost; and
- weighted the adjustment with forecast capital investment for the next price limit period.

The adjustment to the standard cost is based on the gap between that standard cost and the benchmark, and the scope for closure of that gap.

Ofwat provides the following worked example⁷.

Consider a company that submitted a standard cost of £50 per metre for laying a 200 mm bore water main in a grassland location. The chosen benchmark for this standard cost is £41/m. The company's submitted cost is £9/m higher than the benchmark – a gap of 22%.

Ofwat expects the company to close 50% of this gap⁸ (£4.5/m); hence, the scope for closure is 9% of the submitted standard cost.

In this example, the adjustment is 9%.

Table 11.11: Calculating the adjustment for each standard cost

A	B	C	D	E	F	G	H
Standard cost	EJG	Chosen benchmark	Gap (A-C)/C	Catch-up expected	Scope for improvement (A-C)*E	New revised cost (A-F)	Scope as a % of original standard cost (F/A)
£50/m	A2	£41/m	22%	50%	£4.5/m	£45.5/m	9%

Adjustments are derived for each submitted standard cost for each company. Where a company's submitted cost is below the chosen benchmark, then no adjustment is made.

⁷ Capital works unit costs in the water industry: Feedback on our analysis of the March 2003 water company cost base submissions. Ofwat, May 2003.

⁸ Ofwat assumes that the scope for closure of the gap is 50% for capital maintenance and 75% for capital enhancement.

In order to derive the overall improvement required, each adjustment is weighted using each company's forecast capital investment for the price control period.

Ofwat provides the following worked example of this process.

Consider again the submitted standard cost for laying a 200 mm bore water main in a grassland location for which an adjustment of 9% was assessed. This adjustment must then be weighted by the forecast proportion of capital investment for this type of work.

Say, for example, the company forecasts that 50% of its overall water service investment will be spent on potable mains, with 40% of this to be spent on mains laying in grassland locations. Further, of the company's mains stock, 15% are mains of nominal bore 200 mm. Of the overall water service investment, 60% of this will be on infrastructure assets (mains and communication pipes).

Calculation of the proportion of investment in this type of work takes the form:

$$\frac{\% \text{ mains stock} \times \% \text{ mains investment} \times \% \text{ water service for potable mains}}{\% \text{ of total water investment that is infrastructure}}$$

or,

$$\frac{15\% \times 40\% \times 50\%}{60\%}$$

This results in a weighting of 5% to be applied to this standard cost, ie 9% x 5%. That is, the weighted adjustment for this standard cost is 0.45%.

All of the weighted adjustments for all of the standard costs for the water infrastructure are added together and the catch-up improvement target is derived. An example of this process is set out below.

	Adjustment (scope for catch-up improvement)	Proportion of forecast investment in this type of work	Weighted adjustment
Standard cost 1	9%	5%	0.45%
Standard cost 2	4%	8%	0.32%
....
Standard cost x	x %	x %	x %
TOTAL		100 %	4.65 %

In this example, the overall catch-up improvement target for the water infrastructure is 4.65%.

Ofwat uses this method to calculate catch-up improvement targets for the following areas: capital maintenance and capital enhancement expenditure; water and sewerage infrastructure, and water and wastewater non-infrastructure.

11.5 Summary

The methods that Ofwat uses to assess the scope for capital efficiency in the water industry in England and Wales are well established and have been developed over a number of years. They have also been subject to scrutiny by a range of interested parties and by the Competition Commission.

The methods involve the use of detailed econometric models to establish relative efficiency in capital maintenance and analysis of capital works unit costs to determine overall procurement efficiency.

The models are information-intensive and are specific to the water and wastewater industry. They provide Ofwat with a quantitative way to determine relative efficiency between companies and establish the scope for improvement. As such, they provide an invaluable aid to setting robust targets and ensuring that customers receive value for money from the investment programmes.

11.6 Question for consultation

1. What are respondents' views on Ofwat's methods for assessing capital expenditure efficiency?
2. What other approaches to the assessment of the scope for capital efficiency would respondents suggest? How would these work?

Section 3: Chapter 12

Other ways to assess capital expenditure efficiency

12.1 Introduction

In the *Strategic Review of Charges 2002-06* we based our approach to assessing the scope for capital efficiency on the approach used by Ofwat; we also took into account the efficiency improvements that have been achieved by the companies in England and Wales.

The chapter begins by discussing the approach we took at the last Review. We amended the Ofwat approach to reflect the limited information that was available to us about the water industry in Scotland at that time. The quality and quantity of the information about the components of the asset base, historic expenditure, current asset management practices and the outputs of the proposed investment programme meant that we could not use entirely the same approach as that which Ofwat used.

Outside of the water industry, other regulators use different approaches to assessing the scope for capital efficiency. In this chapter we present an overview of the approaches taken by the economic regulators of the electricity, gas, rail infrastructure, telecommunications, post and aviation industries.

Our approach to assessing the scope for capital efficiency in Scottish Water will take account of these different approaches.

12.2 Our approach in the Strategic Review of Charges 2002-06

In the *Strategic Review of Charges 2002-06* we adapted the Ofwat methodology for assessing capital expenditure efficiency in order to take account of the relatively poor quality information in the water industry in Scotland. We needed to overcome the following issues:

- There was no independent scrutiny of the information submissions of the three authorities by Reporters;
- There was no systematic collection of serviceability¹ indicators that could be used to assess and monitor the performance of the asset base; and

- Information on the number of assets, their condition and performance and historic levels of expenditure was also limited.

We therefore developed an approach which, although based on the Ofwat methodology, took account of the situation in Scotland.

We divided the planning and delivery of capital expenditure into four distinct areas and used both quantitative and qualitative methods to assess the scope for efficiency in each area. The potential for efficiency would therefore be the sum of the efficiency identified at each of four stages:

- Strategic asset management – these are savings that can be made by not spending money that was allocated. In terms of efficiency, this must be done without sacrificing output. An example would be replacing pumps every five years as opposed to every three years.
- Programme planning or investment appraisal – these are savings that result from finding the most cost-effective way to deliver objectives. Investment appraisal is the process of establishing whether a project delivers its objectives in the most cost-effective way.
- Procurement – these are savings that arise from improved procurement of capital projects. This would include the initial contract, management of delivery and commissioning of the asset. We were able to use the information supplied to us in the annual return, and similar information provided to Ofwat, about the costs of standardised capital projects in order to assess the potential for savings.
- Innovation – these are savings that come from 'doing it in a new way'. The Babbie Report² into lower cost technologies and processes in the water industry was a key input in this area.

¹ Serviceability indicators are measures of customer service and asset performance such as the number of interruptions to supply or the incidence of sewer flooding.

² Babbie Environmental, report and opinion on the scope for widescale adoption of lower cost new technology and practices in the water industry', Ofwat, 1998.

To establish the scope for efficiency in each of these areas we drew on three separate sources of information:

- assessment of investment performance from the 'Information Project';
- industry consultation; and
- cost base analysis.

We also took full account of the improvements that had been made by the companies south of the border.

The Information Project

In 1999 we advised Ministers that we should gather the information required to allow rigorous comparisons between the industry in Scotland and in England and Wales. We established the 'Information Project', which was contracted to a consortium of Cap Gemini Ernst & Young, Yorkshire Electricity and WS Atkins.

The principal output of this project was the format and definitions for an 'annual return' of asset, customer and financial information for each of the three former water authorities. The project also included an assessment of the gaps in information and in management processes that would impact on the quality and extent of the information submitted. The consultants compared the authorities with industry best practice across utilities in England and Wales in areas such as their strategic approach to investment planning, the quality of information and their capital programme management.

The consultants concluded that the three authorities fell well short of 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. We asked the authorities to prepare action plans to explain how they intended to address these issues.

The consultants' conclusions were an important component of our assessment of the scope for capital expenditure efficiency in the water and wastewater industry in Scotland. These conclusions were explained in detail in the *Strategic Review of Charges 2002-06*.

Industry consultation

We conducted a series of structured interviews with a number of companies in the water sector, the wider utilities sector and in other asset-intensive industries. We also interviewed other UK utility regulators, trade associations, contractors and consultants.

We used these structured interviews to help develop our understanding of what might be achieved in terms of capital efficiency in strategic planning, procurement and project management. These interviews broadly confirmed the conclusions of the consultants working on the Information Project. There was a common belief that efficient delivery of the capital programme of the water industry in Scotland would require a step-function change in the way the industry planned, managed and contracted capital programmes.

Cost base analysis

We described Ofwat's cost base analysis in the previous chapter. We used the cost base analysis to assess the gap in procurement efficiency between the authorities and the privatised companies in England and Wales.

Each of the water authorities submitted a cost base using the same specifications as Ofwat had used in its 1999 price review. The authorities' capital unit costs were benchmarked against Ofwat's chosen benchmark costs, and the comparisons weighted using the authorities' proposed capital expenditure programmes for 2002-06. This analysis allowed us to calculate the relative efficiency gap in procurement between the industry's costs in Scotland and the benchmark costs in England and Wales.

The scope for improvement through innovation was taken from the Babbie Group report.

The overall approach for assessing capital efficiency is summarised in the following table:

Table 12.1: Methods for assessing capital efficiency

Area identified for efficiency	Tools
Strategic asset management	Information Project, industry consultation, benchmarking
Programme planning (appraisal)	Information Project, industry consultation, benchmarking
Procurement	Cost base analysis
Innovation	Babtie Group report

Our analysis³ showed that there was significant scope for efficiency in the delivery of capital investment in Scotland. We decided to set the target on the same basis that we had used for operating expenditure. We therefore required the industry to close 80% of the assessed gap in efficiency between the industry in Scotland and the Ofwat benchmark (not the leading companies). We also decided to phase the capital efficiency targets over four years, rather than apply the total efficiency in the first year.

- We applied the capital expenditure efficiency target to 92% of the Quality and Standards capital programme.
- We applied the operating cost efficiency targets to 8% of the programme that was capitalised operating costs.

Over the last three years we have seen an improvement in the quality of regulatory information. In Chapter 13 we discuss how improved information has changed our proposed approach to establishing the scope for capital efficiency in the *Strategic Review of Charges 2006-10*.

It is helpful to consider the approaches taken by other regulators to assessing the scope for capital efficiency in order to establish whether standard practices are adopted and whether they might be applicable to the water industry in Scotland. We believe that it is in the customer interest to adopt best practice in determining the scope for capital expenditure efficiency.

12.3 Office of Gas and Electricity Markets (Ofgem)

Ofgem is the regulator of the UK gas and electricity markets. It sets prices for the companies that operate the monopoly 'pipes and wires' businesses which distribute electricity and gas across the UK. The companies that are subject to price control regulation are:

- National Grid Transco, for high voltage electricity transmission in England and Wales and national and regional gas distribution;
- Scottish Power and Scottish and Southern Energy, for high voltage and local electricity distribution in Scotland; and
- the 12 companies responsible for local electricity distribution in England and Wales.

Ofgem uses incentive-based regulation.

Electricity

In its most recent price determinations, Ofgem used a broadly similar approach to assess capital expenditure efficiency for the high voltage electricity networks, and the local distribution networks^{4, 5} in Scotland and in England and Wales.

Ofgem splits the companies' proposed capital expenditure into two components:

- Load related expenditure (LRE) – expenditure required to enable the connection of new generation capacity and new customers to the transmission system, and to reinforce the existing system to accommodate growth.
- Non-load related expenditure (NLRE) – expenditure required to replace old or poorly performing assets.

³ The assessment of the scope for capital efficiency is described in detail in the *Strategic Review of Charges 2002-06* Section 4, Chapter 19.

⁴ 'The transmission price control review of the National Grid Company from 2001 – Transmission asset owner: Final proposals'. Ofgem, September 2000.

⁵ 'Reviews of public electricity suppliers 1998 to 2000 – Scottish transmission price control review: Final proposals'. Ofgem, December 1999.

Ofgem worked with consultants PB Power to develop models to forecast both LRE and NLRE. These models are summarised in the recent draft determinations for the local electricity distribution networks⁶:

“6.73. LRE has been modelled by benchmarking the DNOs (Distribution Network Operators) forecast and historic spend as a proportion of Modern Equivalent Asset Value (MEAV) per customer and per GWh. The model considers a 15 year period from 1995 to 2010. The model applies the median ratio of future to historic spend for each DNO to arrive at the LRE projection.

“6.74. The NLRE model uses the DNOs’ asset populations at March 2003 and applies a replacement profile for each asset category. The replacement profile used is the same for all DNOs – and is based on the DNOs’ own profiles included in the FBPQs (Final Business Plan Questionnaire). The same set of unit costs (as advised by PB Power) have been applied to all DNOs, although an adjustment has been made for EDF-LPN to reflect regional factors.

“6.75. A slightly modified approach has been used for overhead lines. A high proportion of overhead lines are refurbished rather than replaced therefore overhead lines have been modelled using assumptions on refurbishment cycles and proportion of replacement.”

Ofgem uses these models to determine how much capital expenditure to allow in the price settlement.

Ofgem considers maintenance expenditure and operating expenditure together. It uses a five-stage approach to assess operating cost. The third step of this analysis estimates efficient cost levels. Ofgem uses top-

down benchmarking techniques to assess the scope for efficiency. It used regression analysis to forecast operating costs. Ofgem also makes adjustments to take account of special factors and the scope for continuing cost reductions over the price control period.

Gas

In its most recent price review of the gas transportation and metering network in the UK, Ofgem set separate price controls for the national transmission system (NTS) and the 12 local distribution zones⁷ (LDZs). It also set price caps for metering and meter reading services⁸. Ofgem used consultants, Mazars Neville Russell, Petroleum Development Consultants, and Arthur Anderson.

Ofgem’s consultants split capital expenditure into two elements:

- capital expenditure (the construction of new assets); and
- replacement expenditure (replacing existing assets, largely to meet health and safety requirements).

The consultants looked in detail at Transco’s proposed expenditure for the price control period and, using a bottom-up approach, identified the scope for savings in each category.

Ofgem also considers gas industry maintenance expenditure and operating expenditure together. It commissioned Europe Economics to complete a top-down study of an appropriate allowance for operating costs.

12.4 Office of Rail Regulator (ORR)⁹

ORR regulates Network Rail, the monopoly owner of the rail network (that is, track, signalling, tunnels, stations, bridges and depots). ORR is required, by statute, to

⁶ ‘Electricity distribution price control review – Initial proposals’. Ofgem, June 2004.

⁷ In 2002, Transco re-organised the 12 LDZ into 8 regional networks and Ofgem revised the settlement such that the total distribution revenue for the 8 regions was equal to the total revenue for the 12 LDZs.

⁸ ‘Review of Transco’s price control from 2002: Final proposals’. Ofgem, September 2001.

⁹ From Summer 2004, the ORR became the Office of Rail Regulation.

ensure that Network Rail has sufficient revenues and the appropriate financial framework that it needs to operate, maintain and renew the rail infrastructure.

ORR sets track access charges for:

- franchised passenger train services; and
- freight services.

ORR also uses incentive-based regulation. It used essentially the same approach in identifying the scope for capital expenditure efficiency in both of its determinations of charges for franchised passenger train services and freight services.

ORR adopted a two-stage approach to assessing the industry's capital expenditure in its 2003 interim review of access charges for the then newly established Network Rail¹⁰.

- In Chapter 12 we explained how ORR undertook a detailed examination of the activities planned by Network Rail. Where work could not be justified, or it appeared that work was unnecessary, ORR did not provide funding.
- ORR also examined the scope for efficiency savings. This step of ORR's analysis is considered here.

ORR used independent consultants to undertake a number of detailed studies, which were designed to identify the scope for improvement in capital expenditure efficiency.

- Intra-company (or regional) benchmarking¹¹

Network Rail is organised into seven regions. This study used comparisons of normalised unit costs to identify best practice in operating, maintaining and renewing the network. The consultants assessed the

potential for efficiency savings if Network Rail adopted best regional practice across the whole network.

- Analysis of Network Rail's procurement strategy¹²

The consultants analysed Network Rail's procurement strategy across six major market sectors. They reviewed the major processes and activities in (i) strategy and planning, (ii) sourcing and contracting, and (iii) delivery and execution for each sector. The consultants assessed the potential for cost savings if Network Rail were to adopt best practice from other industries in its procurement strategy.

- International benchmarking¹³

The consultants compared Network Rail's practices in track maintenance and renewal with four international rail companies. The purpose of the study was to identify best practice in track maintenance and renewal and to assess the potential for efficiency savings in Network Rail.

In addition to these studies, ORR considered other areas where it believed potential efficiencies could be made. These were:

- the scope for improvements in productivity within Network Rail's existing possession patterns¹⁴;
- the benefits associated with the introduction of new technology; and
- a review of standards¹⁵.

12.5 Office of Communications (Ofcom)

Ofcom regulates the UK communications industries, including television, radio, telecommunications and wireless communications. It replaced the Office of Telecommunications (OfTel) in 2003.

¹⁰ 'Access Charges Review: Final Conclusions'. ORR, December 2003.

¹¹ 'Regional benchmarking: Report for Network Rail', ORR and SRA. L.E.K. Consulting, 24 July 2003.

¹² 'Review of Network Rail's supply chain'. Accenture, 25 July 2003.

¹³ 'International benchmarking: Report to ORR, Network Rail and SRA'. L.E.K. Consulting, TTCI, Halcrow Group Ltd., 24 July 2003.

¹⁴ Possessions are when Network Rail restricts access to stretches of track to allow for engineering works.

¹⁵ Fundamental review of the standards regime to ensure efficient, value for money and effective delivery of Network Rail's safety obligations.

Ofcom (and, previously, Oftel) set price caps on British Telecom's (BT) charges for the following:

- Use of the network – the charges that BT levies on other service providers for access to, and use of, its fixed line network. The regulator applies price controls only to those services which are not yet subject to competition, or cannot be made competitive.
- Retail services – the charges that BT levies on customers for telephony services.

Oftel used incentive-based price cap regulation. In the most recent review of network charges published in 2001, Oftel used its financial model to forecast investment over the control period. This was calculated as the sum of two components¹⁶:

“4.50 The second approach was to use the model to derive projections for investment. In a steady state, and if actual asset lives are properly reflected in the asset lives used in the accounts, capital expenditure should be equal to CCA¹⁷ (OCM)¹⁸ depreciation. Capital expenditure can then be forecast as the sum of two components, one equal to the OCM depreciation at base year volumes and one to allow for investment necessary to support volume growth over the period, determined by the asset volume elasticity. This has the merit of producing projections of investment that are consistent with whatever level of traffic growth is forecast. The proposed values of 'X' are based on this second approach.”

The asset-volume elasticity is the percentage increase in gross assets for a 1% increase in volume. Oftel estimated the asset-volume elasticity for access and network costs based on a top-down analysis of BT's actual costs.

Oftel did not apply an efficiency target to this forecast of BT's capital investment expenditure requirement.

12.6 Postal Services Commission (Postcomm)

Postcomm is the economic regulator of postal services in the UK. It uses incentive-based regulation.

Royal Mail's capital expenditure is a relatively small proportion of overall expenditure (around £160 million in 2004-05, which was less than 3% of total costs). At the current time, Postcomm has required capital expenditure to be funded from customer revenue.

In its most recent price review, Postcomm commissioned WS Atkins to undertake a detailed study of the efficiency of Royal Mail's inland letters business¹⁹.

WS Atkins concluded that four adjustments to Royal Mail's proposed capital expenditure were required:

1. An adjustment “to reflect efficiency in the way capital expenditure is planned, assets are managed and schemes are appraised, designed, specified, procured and implemented”. This adjustment comprised two elements: an on-going annual investment and a narrowing of the gap to best practice.
2. An adjustment to the phasing of some projects.
3. An adjustment for expenditure which was disallowed because it could not be justified.
4. An adjustment for delivering some of the capital expenditure outputs using alternative approaches.

With regard to the scope for capital expenditure efficiency, WS Atkins concluded:

“15.35 Capital efficiencies can be made in two areas; firstly in the selection and timing of the most appropriate and effective solution or project, and secondly in the cost of procuring the assets to provide this project

¹⁶ 'Proposals for network charge and retail price controls from 2001'. Oftel, February 2001.

¹⁷ Current cost accounting.

¹⁸ Operating capability maintenance.

¹⁹ 'An efficiency study of Consignia's inland letters business'. Report by WS Atkins for Postcomm, November 2002.

(including managing the project). In deriving an appropriate level of capital efficiencies to apply to expenditure proposals, we normally take a qualitative view of the management of the capital programme to assess the first factor. A quantitative comparison of the unit cost of procuring the main work items is normally used to derive a level of efficiency for the second.

“15.36 We have compared Consignia’s²⁰ current capital planning processes with other utilities, in both the private and public sectors, to take a view of the level of ‘catch-up’ needed to meet current efficient best practice in this area. We have then applied an annual percentage efficiency which reflects normal business efficiencies which can be achieved over time.

“15.37 Quantitative comparisons of asset procurement costs have been inconclusive as there has been insufficient cost information available, and there are insufficient comparators to use. We have therefore applied a qualitative approach based on a comparison of procurement processes with other utilities.”

12.7 Civil Aviation Authority (CAA)

The CAA regulates civil aviation in the UK, including the economic regulation of airports and the National Air Traffic Control Service (NATS).

The CAA sets price caps for the following:

- Airport charges

The CAA regulates the charges at four airports: Manchester Airport and three London airports (Heathrow, Gatwick and Stanstead), which are owned by BAA.

- Charges for air traffic services

The CAA originally provided advice to the Government on the charges to be levied by NATS for air traffic services for the five years from 1 April 2001. In 2001, the Government extended the CAA’s role to include economic regulation of air traffic control. The CAA will set price caps for NATS from 1 April 2006.

Airport charges

The CAA refers the four airports to the Competition Commission every five years. The Competition Commission is asked to recommend a price cap for each airport and to decide whether the airports have acted against the public interest during the previous five years. The CAA then sets price caps and conditions for the five-year price control period, based on the result of the Competition Commission’s inquiry.

The Competition Commission reviewed the capital investment programmes of the four airports during the previous price control period (1998-99 to 2002-03), their projected investment programmes and their investment planning.

Manchester

The Competition Commission asked quantity surveyors WTP to assess Manchester Airport’s capital expenditure efficiency in the period 1998 to 2008. WTP examined two projects completed in the period 1998 to 2003, and two projects proposed for 2003 to 2008. Their assessment included:

- a comparison of unit capital costs with other large UK projects;
- a comparison of Manchester Airport’s performance with that of other airports;
- whether the capital expenditure assumptions in the financial projections that Manchester Airport had prepared were demonstrably efficient;

²⁰ Consignia was the corporate name for the Post Office and Royal Mail at the time of the study.

- whether any projected changes in real unit capital costs were appropriately estimated; and
- whether Manchester Airport's procurement and project management methods reflected best practice.

The Competition Commission accepted Manchester Airport's estimates for capital expenditure and did not adjust the estimates for historic or future efficiencies²¹.

BAA

The Competition Commission also asked quantity surveyors WTP to examine BAA's capital expenditure efficiency. WTP examined one project completed during 1998 to 2003, and one project proposed for 2003 to 2008 from each of the three airports.

The Competition Commission accepted BAA's proposed capital expenditure²².

12.8 Summary

Our approach to determining the scope for capital efficiency targets in the *Strategic Review of Charges 2002-06* drew on the approach used by Ofwat. We had to adapt this approach to reflect the limited information available about the water industry in Scotland.

Our analysis of the methods used by other regulators to establish the scope for capital efficiency indicates that there is no standard regulatory approach. Regulators have developed approaches that are tailored to the particular characteristics and asset bases of the industry they are regulating.

12.9 Question for consultation

1. Are there are lessons that we should learn from the experience of other regulators?

²¹ Line 2.177j, Chapter 2: Conclusions, '*Manchester Airport plc: a report on the economic regulation of Manchester Airport plc*'. Report by the Competition Commission, December 2002.

²² Line 2.376b, Chapter 2: Conclusions, '*BAA plc: a report on the economic regulation of the London airports companies (Heathrow Airport Ltd, Gatwick Airport Ltd and Stanstead Airport Ltd)*'. Report by the Competition Commission, November 2002.

Section 3: Chapter 13

Our proposed approach to assessing capital investment efficiency

13.1 Introduction

In Chapters 11 and 12 we described the methods used by Ofwat and other regulators to assess the scope for efficiency in capital investment. In particular, we noted that Ofwat's methods for benchmarking companies' performance are well established and have been scrutinised in detail by the Competition Commission. The approach outlined in this chapter would need to be amended if Scottish Water is tasked with delivering an unprecedented capital programme.

We are pleased to note that we now receive improved regulatory information. This allows us to use the benchmarking techniques developed by Ofwat to compare the investment performance of Scottish Water with that of the companies in England and Wales. In the *Strategic Review of Charges 2006-10*, we propose to use Ofwat's econometric models and its 'cost base' approach to assess the scope for efficiency in Scottish Water's capital investment programme.

In this chapter we explain how we propose to adapt Ofwat's approach in order to accommodate the remaining differences in the quality of regulatory information. We examine:

- the changes in our approach since the last *Strategic Review*;
- how we propose to assess capital maintenance efficiency;
- how we propose to assess capital enhancement efficiency; and
- how we ensure that these assessments take due account of the Scottish context.

We also discuss the importance of ensuring that we compare performance on a like-for-like basis. In particular, we need to take due account of any factors that make Scottish Water different from the companies in England and Wales.

13.2 Changes in approach from the Strategic Review of Charges 2002-06

As part of the *Strategic Review of Charges 2002-06*, we commissioned a study by expert consultants into the investment planning of the three former water authorities¹. This study identified significant shortcomings compared with best practice in England and Wales. In particular, it highlighted problem areas such as strategic asset management; asset information; and capital programme planning.

We analysed the efficiency improvements achieved by the companies south of the border. This analysis identified the extent of the capital efficiency gap between the companies and the former water authorities². We set a target that Scottish Water should close 80% of the assessed efficiency gap.

We do not propose to commission a similar assessment for the *Strategic Review of Charges 2006-10*. We believe that we are now in a position to adopt Ofwat's approach and compare Scottish Water's relative performance in capital investment delivery. This is possible because Scottish Water has made significant progress in improving the regulatory information that it provides to this office. We believe that using an approach which is consistent with that used by Ofwat will ensure that our conclusions are robust.

13.3 Ofwat's approach

Ofwat makes separate assessments of relative efficiency for capital maintenance and capital enhancement investment. We set out below our proposed use of Ofwat's approach to assess relative efficiency for these two types of investment.

Notwithstanding the improvements in the regulatory information that we now receive, there are still gaps in the information. As a result we are not able to implement Ofwat's methods in full. We believe that these issues can be overcome, however, and we outline below our proposals to deal with them.

¹ North of Scotland Water Authority, West of Scotland Water Authority and East of Scotland Water Authority.

² This analysis, and how it informed our assessment of the efficiency gap, is described in detail in the *Strategic Review of Charges 2002-06*, Chapters 3, 8 and 19.

13.4 Assessing efficiency for capital maintenance

Ofwat uses its econometric models and its 'cost base' analysis to determine capital maintenance efficiency targets for each company. We described these two techniques in detail in Chapter 11. We propose to use both econometric modelling and cost base analysis to assess the scope for efficiency in Scottish Water's capital maintenance investment.

Econometric modelling

Ofwat's econometric models use regression analysis to establish a relationship between the costs incurred by companies and a defined set of cost drivers. These cost drivers take account of both physical and financial factors that could influence a water and wastewater company's costs.

We propose to use these models to make an initial assessment of the appropriate level of capital maintenance investment by Scottish Water. We would populate the models with information on the physical and financial characteristics of Scottish Water.

In applying the econometric models, Ofwat assesses the relative performance of the companies in the period 1998-99 to 2002-03. The econometric models are based on the characteristics of companies' assets and other cost drivers, in 1997-98. Ofwat analyses a five-year period in order to make sure that its assessment of the level of efficiency is not impacted by annual variations in spending. Ofwat uses this information in its annual reports³ to rank companies' capital efficiency performance.

Ofwat collects this information at each price review through its capital maintenance return. We collect equivalent information in Scottish Water's annual June Return. Unfortunately we do not have this information for the water industry in Scotland prior to 2003-04. As a result we are not able to use the models to compare

Scottish Water's capital maintenance costs with the companies' costs to determine relative performance over time.

However, we can use the models to predict the expenditure that Scottish Water should incur given its current asset base. In other words, we can establish how much Scottish Water should need to spend to maintain its assets if it were as efficient as the average company in England and Wales.

Serviceability

Ofwat examines long-term trends in serviceability to ensure that the models do not underestimate the investment required to maintain the serviceability of assets. We do not have sufficient information to replicate Ofwat's analysis of long-term serviceability trends for Scotland. We do, however, have some information about Scottish Water's recent performance.

In its first draft business plan, Scottish Water indicated that it had used information on serviceability to determine its future capital maintenance investment. We will ask the Reporter to examine Scottish Water's approach to capital maintenance in its investment plan. In particular, we will ask him to assess whether Scottish Water's approach complies with the UKWIR common framework⁴.

We propose to extend our regulatory returns to gather the full range of information for the serviceability indicators used by Ofwat. In the longer term, this will allow us to use a serviceability approach to determine whether the levels of capital maintenance investment remain appropriate. In the shorter term, we can use the information from Scottish Water's current performance to monitor and report on the levels of serviceability provided to customers.

This establishes a baseline against which we can compare future serviceability.

³ Water and Sewerage unit costs and relative efficiency.

⁴ We describe the UKWIR common framework in Chapter 3 of this volume.

Cost base analysis

Ofwat uses cost base analysis to assess the scope for procurement efficiency for both capital maintenance and capital enhancement investment. Ofwat uses both cost base analysis and the results from the econometric models to determine the capital maintenance efficiency targets for each company.

We have collected cost base information for Scottish Water and the three former authorities since 2000-01. In 2004, we updated our requirements for cost base information to ensure that our approach would be consistent with that used by Ofwat. We can therefore apply the cost base approach to both capital maintenance and capital enhancement investment.

13.5 Adjusting the econometric models for Scotland

We need to make some largely technical adjustments to Ofwat's econometric models to ensure that we can use them to analyse Scottish Water's performance. These include:

- adjusting for the different timeframes of the price reviews;
- taking account of the range of performance in England and Wales; and
- accounting for the characteristics of Scotland and Scottish Water.

Adjusting for the different timeframes

Ofwat's econometric models assess the performance of the companies over the five-year period from 1998-99 to 2002-03. We want the models to predict appropriate levels of capital maintenance for the 2006-10 regulatory control period. We therefore need to update the models to reflect the different timeframes.

We believe that if we adjust the models for the following three factors then the answers will be reliable:

- Inflation

We intend to use the COPI⁵ index to adjust predicted costs from the price base in Ofwat's econometric models (2002-03) to the 2005-06 price base that we propose to use in the *Strategic Review*.

- Improvements in the performance of companies since the period 1998-99 to 2002-03

We propose to estimate the annual rate of improvement in the companies' performance and to adjust the models to reflect this. We will base our adjustments on annual reports on the progress the companies have made.

- Ofwat's assessment of companies' capital investment needs, where this differs from the period 1998-99 to 2002-03

The companies' understanding of their capital maintenance requirements is improving. The UKWIR common framework encourages companies to better target their investment. There is also some evidence that capital maintenance activity needs to increase. We will study Ofwat's final determinations⁶ to assess companies' claims for a higher level of capital maintenance and Ofwat's response.

The range of performance in England and Wales

Ofwat's models predict capital maintenance investment for a given asset base, assuming average levels of efficiency. We propose to take account of the range of actual company results.

Applying Ofwat's models to Scottish Water

We also need to consider the applicability of Ofwat's models to Scottish Water. We propose to examine carefully the following:

- whether there are features of Scottish Water's assets that require separate analysis because of differences with the assets in England and Wales;

⁵ COPI is the Construction Output Price Index, calculated and published quarterly by the Department of Trade and Industry.

⁶ Future water and sewerage charges 2005-10 – Final determinations.

- whether there are geographic, economic or other external factors in Scotland that affect the costs of carrying out capital maintenance, relative to England and Wales.

We discuss these points in more detail later in this chapter.

13.6 Step-by-step application of Ofwat's econometric models

We propose to use the following approach in using Ofwat's econometric models to assess Scottish Water's capital maintenance requirements.

Step 1

We will need to confirm the reliability of the required information on assets, customer numbers and volumes. We propose to seek the Reporter's opinion on the quality of information provided by Scottish Water. If the Reporter considers that an item of information is not sufficiently reliable, we will ask him to provide an estimate of the likely range of error.

Step 2

We will need to confirm that, over the period modelled by Ofwat (1998-99 to 2002-03), companies' capital maintenance investment delivered stable or improved asset serviceability. In making this assessment, we will use the serviceability indicators that Ofwat publishes. This is an important step, because we are keen to ensure that Ofwat's models will predict a level of capital maintenance for Scottish Water that is sufficient to maintain current levels of serviceability.

Step 3

We will input the Step 1 information into each of Ofwat's 2004 price review econometric models. This will allow us to calculate an initial predicted cost for Scottish Water's annual capital maintenance investment for each activity.

Step 4

We will add the results of each of the models to obtain an initial total predicted annual capital maintenance requirement for Scottish Water.

Step 5

We will adjust the predicted maintenance investment to ensure that it is consistent with the 2005-06 price base of the *Strategic Review of Charges 2006-10*. We propose to use the COPI inflation index for this adjustment.

Step 6

We propose to apply further adjustments to the results of Step 5. This will allow us to take account of the following:

- improvement in capital maintenance efficiency by the companies since 1997-98;
- the performance of leading companies, as distinct from the average performance predicted by the models; and
- claims by the companies, where Ofwat has accepted them, for higher levels of capital maintenance.

Step 7

We may adjust the predicted costs further to ensure that we take account of Scottish Water's particular circumstances. These adjustments might comprise the following:

- special factors that lead to higher or lower costs being incurred in Scotland for capital maintenance activities, relative to England and Wales; and
- claims by Scottish Water for specific capital maintenance investment.

We believe that these seven steps should ensure that our analysis of the capital maintenance requirement is accurate.

Confirming the results of the models

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

- the value of the asset base;
- the condition of the asset base; and
- the numbers and types of assets.

We would adjust our results upwards should these comparisons suggest that the predicted level of capital maintenance investment is low for Scottish Water relative to that for the companies.

13.7 Setting an appropriate level of capital maintenance

We also examine other evidence to determine an appropriate efficient level of capital maintenance. In particular, we propose to consider the following:

- The results of the cost base analysis for capital maintenance investment

We described Ofwat's cost base approach in Chapter 11. We will use the cost base to assess Scottish Water's current procurement efficiency for capital maintenance investment.

- Available information on Scottish Water's recent annual levels of capital maintenance

We propose to examine recent levels of capital maintenance investment by Scottish Water and the former authorities. This will help us to assess whether current investment is significantly higher or lower than that which is predicted by the econometric models. We will ask Scottish Water to explain any significant variances.

- Available information on recent trends in the serviceability of Scottish Water's assets

We propose to use the available information on the performance of Scottish Water's assets to inform our assessment of the appropriate level of capital maintenance.

- Scottish Water's first and second draft business plans

We will examine the capital maintenance investment projections in Scottish Water's business plans. This analysis will include:

- the geographical coverage of investment projects;
- the quantity, size and type of assets that Scottish Water wishes to target;
- Scottish Water's assessment of the improvements in levels of service that it expects;
- Scottish Water's overall assessment of its capital maintenance requirements and any justification of these requirements.

In Chapter 14 we discuss how we assess the scope for future improvement in efficiency. In Chapter 15 we discuss how we set targets for Scottish Water.

13.8 Assessing relative efficiency for capital enhancements

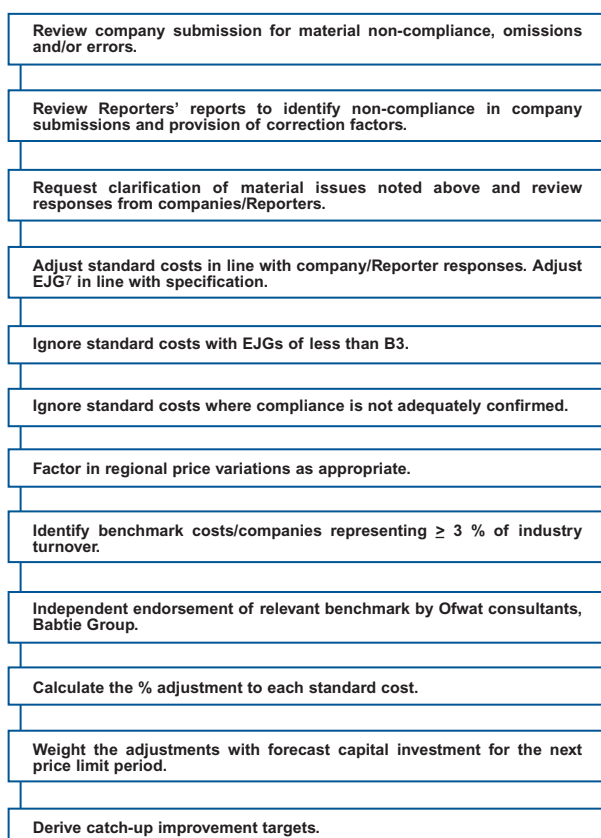
We propose to use Ofwat's cost base approach to benchmark Scottish Water's efficiency in delivering capital enhancement projects. We described this approach in Chapter 11.

We will require Scottish Water to provide us with information for this analysis. We will use independent consultants to report on the:

- costing systems;
- alignment of costing methods between the cost base and the investment plan costings;
- reliability of standard costs; and
- comparability with England and Wales.

We believe that it will be possible to apply Ofwat's cost base in full. Figure 13.1 summarises Ofwat's approach.

Figure 13.1: Ofwat's cost base approach



We recognise that this analysis is particularly specialised; we therefore propose to use independent expert consultants to carry out the analysis of relative efficiency. These consultants will need to demonstrate their familiarity with Ofwat's approach. This analysis will cover both capital maintenance and capital enhancement investment.

The consultants will assess a quantified procurement efficiency gap for capital enhancement investment, expressed as a percentage of capital enhancement investment.

We also propose to assess the impact of carrying out this work in Scotland on Scottish Water's relative capital

investment costs. We discuss this further in the next section.

13.9 The impact of operating in Scotland

Volume 4 of this methodology⁸ discussed our proposed approach to establishing the scope for operating cost efficiency. In Chapter 10 of that volume, we set out how we propose to ensure that the operating expenditure comparisons we make between Scottish Water and the companies in England and Wales are on a like-for-like basis. We consider that similar arguments could be applied to comparisons of capital expenditure efficiency.

There may be factors that influence investment costs which are not adequately reflected in the analysis techniques that we have described above. Some of these factors will be within the control of management and therefore should be excluded from any comparison. Management should be able to take corrective action to address any such negative impacts.

Other factors may be beyond management control and could either increase or decrease the level of cost. Such factors may relate to the operating environment or the level of service provided to customers.

Our assessment needs to take account of any relevant factors which are beyond management control but which influence costs. We therefore ask Scottish Water, as part of its business plan submissions, to draw to our attention all factors that influence cost. This should include factors that both increase or decrease cost.

We want to ensure that our efficiency targets neither unduly penalise nor reward Scottish Water. Some commentators have argued that it is unfair to draw comparisons between Scottish Water's performance and that of the privatised water and sewerage companies in England and Wales. However, we consider that our comparisons with England and Wales help to ensure that customers receive value for money and that Scottish Water delivers improved service to customers and the environment.

⁷ Engineering Judgement Grades – these are 'confidence' grades assigned to the information contained in the submission.

⁸ 'Our work in regulating the Scottish water industry: The scope for operating cost efficiency', WICS, Volume 4.

Commentators who question our benchmarking process cite the following differences between the industry in Scotland and that south of the border:

- Scotland's geography (size, remote islands, long coastline, topography);
- Its population settlement patterns (remote communities, concentrated dense urban areas);
- The extent of the assets required to serve customers in Scotland (long mains, small isolated treatment works);
- The quality of the assets inherited by Scottish Water (condition and performance of the mains, sewers, treatment works, pumps etc);
- The nature of the customer base;
- The fact that Scottish Water is in public ownership (political interest, Scottish Water's duty to Scotland, remit and freedom of management); and
- The short time that Scottish Water has had to mature and improve.

Chapter 10 of Volume 4⁹ of this methodology set out our initial views on each of these factors. We believe that some of these factors may impact upon the efficient level of investment.

The quality of the assets inherited by Scottish Water

Some argue that Scottish Water inherited assets of poor quality from the three former authorities. They assert that the inherited assets are generally in poor physical condition and perform badly, leading to higher operating and/or capital maintenance costs both to repair and to supervise the assets. Historic underinvestment in Scotland, relative to England and Wales, is cited as the root cause. In particular, it is claimed that Scotland has failed to match the levels of investment that have been delivered by the companies since privatisation in 1989.

On the basis of the evidence that Scottish Water has submitted so far, we do not agree with this assertion. In our *'Investment and Asset Management Report 2002-03'* we examined evidence on both the level of investment and the reported condition and performance of Scottish Water's assets. This evidence points to comparable levels of investment in Scotland and in England and Wales, and assets of comparable condition, for most categories of assets.

Public and private sector ownership

There is a claim that our reliance on comparisons with private companies to induce increased efficiency from the management of Scottish Water, which is a public body, has no basis in economic theory¹⁰.

We are not aware of any economic studies that have found any conclusive evidence that the type of ownership determines the efficiency of a water and wastewater business¹¹.

We see no reason why customers in Scotland should be disadvantaged because of perceived constraints of operating in the public sector. We will, however, review any evidence presented by Scottish Water that could justify a relatively higher level of capital expenditure compared with a private company.

Conclusion

We propose to continue to assess the efficiency of Scottish Water relative to the companies in England and Wales. We will, however, identify and quantify adjustments for any special factors that Scottish Water demonstrates are not covered, or are inadequately covered, in our benchmarking.

13.10 Other regulators' approaches to special factors

Ofwat

Ofwat uses special factors in order to adjust for any circumstances that could be considered to be company

⁹ 'Our work in regulating the Scottish water industry: The scope for operating cost efficiency', WICS, Volume 4.

¹⁰ J Findlay, 'Financing the Scottish water and sewerage industry', paper to the Scottish Trades Union Conference, April 2004

¹¹ See Chapter 6.

specific and which cannot be incorporated into its benchmarking tools. These factors must be beyond management control.

In its 2002-03 report, 'Water and sewerage service unit costs and relative efficiency', Ofwat published the special factors that it had allowed for operating expenditure and capital maintenance expenditure. Twenty-one companies submitted more than 150 special factors. Table 13.1 summarises the special factors that were taken into account by Ofwat when it assessed relative efficiency.

Table 13.1: Special factors taken into account by Ofwat

Special factor	Number of companies	
	Operating expenditure	Capital maintenance expenditure
Water resources (including bulk supplies)	7	0
Water quality	3	0
Water treatment	5	0
Leakage in north London	1	0
High level of meter penetration	5	0
Sewage treatment and sludge	2	0
Location		
Regional salaries and construction costs	5	6
Regional power costs	3	0
Debt	3	0
Coastal sewage treatment works	2	0
Traffic congestion	2	0
Burst rate	2	0
Size and number of assets (including rurality)	5	0
Company size (small companies)	3	2
Impact of large industrial customers on the econometric models	2	0
Total	50	8

Of more than 150 claims that were submitted, only 58 were considered to genuinely impact on costs. Of those 58, only 8 related to capital expenditure.

Ofwat's December 2004 publication 'Future water and sewerage charges 2005-10: Final determinations' also included information regarding the special factors that it has taken into account in the cost base¹². The only factor that was allowed related to regional price variation

factors (particularly in areas in and around London). Some companies claimed that their construction, tender and labour costs are higher than those of other companies because of their location in the country. Ofwat accepted this argument, which was backed up by independent research, and adjusted downwards these companies' standard costs. This adjustment was made before the benchmarks were chosen. This adjustment therefore improved the comparability of costs and the robustness of the relative efficiency assessment.

Ofgem

In Volume 4¹³, we noted that Ofgem takes account of special factors in its assessment of relative efficiency in operating costs. The same is true for capital expenditure.

Ofgem developed models to assess the future level of capital expenditure in two areas – load related expenditure (LRE) and non-load related expenditure (NLRE). In the case of NLRE, a set of unit costs was developed and applied to the asset replacement profile of each distribution network operator. The same set of unit costs was applied to each operator, with the exception of EDF-LPN. In this case Ofgem adjusted unit costs to reflect regional factors. It would appear that the adjustment was designed to allow for higher costs in the London area. No other operator received such an adjustment for capital expenditure.

ORR

In its 2003 review of access charges, ORR assessed the scope for annual reductions in Network Rail's unit costs in three areas – maintenance, renewals and controllable operating expenditure. ORR used intra-company benchmarking. Network Rail is organised into seven regions. ORR believed that savings could be made through the less efficient regions reducing their costs to levels that were comparable to the more efficient regions. ORR did make allowances for regional variations in costs that are beyond management's control in establishing the most efficient regions.

¹² Ofwat, *Future water and sewerage charges 2005-10 –Final determinations*, December 2004, Appendix 2.

¹³ 'Our work in regulating the Scottish water industry: The scope for operating cost efficiency', WICS, Volume 4, Chapter 10, page 9.

Regulators do make some allowance for special factors that impact on capital expenditure. These allowances tend to focus upon regional price variations.

We propose to assess whether regional price variations have an effect upon Scottish Water's reported capital investment costs. If necessary, we propose to make an appropriate adjustment to Scottish Water's costs.

13.11 Criteria for assessing special factor claims

We propose to assess special factors for capital expenditure in the same way as we assess special factors for operating expenditure. We set out the criteria that we propose to use in Chapter 10 of Volume 4 of this methodology¹⁴. In summary, to justify an adjustment to a special factor Scottish Water has to provide evidence in the following areas:

- What is the justification for the special factor? Scottish Water will need to set out whether the factors are the result of special obligations, the character of all or part of its customer base, or the result of historical development of water and wastewater systems in its area of supply.
- How do the special factors impact on Scottish Water's costs?
- How has Scottish Water sought to manage the additional costs arising from the special factors and to limit their impact?
- Are there other special factors that reduce costs? If so, have these been quantified and offset against the upward cost pressures?

Scottish Water's first draft business plan submitted in October 2004 included a draft submission on special factors. This submission related only to operating expenditure. Scottish Water has not yet submitted any claims for special factors relating to capital expenditure.

We understand that Scottish Water has included regional 'uplift' factors in its investment plan costings. These add to the overall project cost estimates.

In the *Strategic Review of Charges 2006-10*, we will assess the justification for any special factor claims made by Scottish Water. In particular we will closely examine the justification for increasing the cost of the investment programme.

13.12 Summary

Efficiency is key to ensuring that customers receive value for money. It is important that our assessment of Scottish Water's capital expenditure efficiency is accurate. We propose to use robust analytical techniques and make appropriate adjustments to ensure that our conclusions are reliable.

13.13 Questions for consultation

1. Do respondents agree that there are benefits in using Ofwat's benchmarking techniques to assess the scope for Scottish Water to improve its capital efficiency?
2. What are respondents' views on our proposed use of Ofwat's econometric models and cost base technique as the basis for establishing an efficient level of capital maintenance expenditure for Scottish Water? In particular, do our proposed adjustments to the econometric models appear appropriate? Are there other factors we should take into account?
3. What are respondents' views on our proposed use of the cost base as the basis for establishing an efficient level of capital enhancement spend?
4. Are our proposed mechanisms for taking account of 'special factors' appropriate?

¹⁴ 'Our work in regulating the Scottish water industry: The scope for operating cost efficiency', WICS, Volume 4, Chapter 10, page 90

Section 4: Chapter 14

Scope for and pace of improvement

14.1 Introduction

In previous chapters we outlined how we will ensure that Scottish Water's proposed capital investment delivers value for money. We propose to:

- establish a detailed list of projects, their outputs and clear deadlines for delivery;
- review the proposed investment programme and seek endorsement of the programme from the water quality and environmental regulators; and
- benchmark the cost of the programme against other water and wastewater companies.

In this chapter we describe how we propose to assess the scope for improvement. We also describe how we will determine the pace at which this improvement should be achieved.

The chapter begins by briefly outlining our approach at the *Strategic Review of Charges 2002-06*. We then review the performance of the companies in England and Wales, and examine the evidence available on the scope for future improvements within the industry. This will focus on work carried out for Ofwat by Europe Economics and London Economics.

The chapter concludes by explaining how we intend to determine the pace at which Scottish Water should improve its performance in delivering capital expenditure.

14.2 Our assessment of the scope for improvement in the last Strategic Review of Charges

It appears increasingly likely that the *Quality and Standards II* investment programme will not have been delivered in full by April 2006. At the time of writing we have not been able to quantify the extent of *Quality and Standards II* that will remain undelivered. Our analysis of the first *Quality and Standards II* projects to have been

completed also suggests that the capital efficiency targets set in the *Strategic Review of Charges 2002-06* may not be met.

At the *Strategic Review of Charges 2002-06*, we analysed the performance of the three former authorities in delivering capital investment. Our analysis showed¹ that Scottish Water lagged significantly behind the companies in England and Wales. We set efficiency targets for Scottish Water which reflected our assessment of the scope for improvement.

We set a single target for overall capital investment efficiency for each year of the regulatory control period. We did not set separate targets for capital maintenance and capital enhancement expenditure, nor for water and wastewater. This allowed Scottish Water additional flexibility in determining how best to meet the capital efficiency targets.

The profile of efficiency savings that we expected Scottish Water to achieve is shown in Table 14.1.

Table 14.1: Capital efficiency targets set in the Strategic Review of Charges 2002-06

	2002-03	2003-04	2004-05	2005-06
Cumulative efficiency gains (including efficiency savings claimed by East of Scotland Water Authority)	18%	24%	28%	34%

We set efficiency targets such that if Scottish Water achieved the target it would have closed 80% of the assessed efficiency gap by 2005-06.

It is important to emphasise what we mean by efficiency.

We define efficiency as:

- delivering the same level of investment outputs for less expenditure; or
- delivering a higher level of outputs for the same expenditure.

¹ *Strategic Review of Charges 2002-06*, Section 4, Chapter 19, 'The scope for capital efficiency'.

² In its submissions for the *Strategic Review of Charges 2002-06*, East of Scotland Water Authority argued that it had included £114 million (pre-efficiency) of capital efficiency savings in its investment proposals. Subsequently, in the absence of evidence supporting this claim, an agreement was reached between Scottish Water and this office about how these claimed efficiency savings would be recovered during the 2006-10 regulatory period. See also Chapter 7 of this document.

At the *Strategic Review of Charges 2002-06*, our primary focus was on the former, ie delivering the same level of outputs that was originally proposed in the *Quality and Standards II* process, but for a lower level of expenditure³.

In the *Strategic Review of Charges 2006-10*, we propose to focus on ensuring that more outputs are delivered for the same level of investment expenditure.

14.3 Improvements in the capital expenditure efficiency of the water industry in England and Wales

The water and wastewater companies in England and Wales were privatised in 1989. In the 15 years since then, they have achieved considerable savings in both operating and investment expenditure. Ofwat continues to set efficiency improvement targets for the industry. This would suggest that scope for efficiency remains.

In its first price review in 1994, Ofwat estimated that there was significant scope for efficiency in capital expenditure. The targets it set are outlined in Table 14.2.

Table 14.2: Capital efficiency targets set by Ofwat in the 1994 price review

	Minimum		Maximum	
	% per year	Five-year total	% per year	Five-year total
Water infrastructure	1%	4.9%	1.9%	9.1%
Water non-infrastructure	1%	4.9%	1.8%	8.5%
Wastewater infrastructure	1%	5.0%	1.9%	9.0%
Wastewater non-infrastructure	1%	4.9%	1.6%	7.7%

The industry outperformed these assumptions.

The efficiency targets comprised two elements:

- an overall improvement in the efficiency of the industry; and
- a 'catch-up' factor which all companies, bar the leading company, had to achieve.

In the 1994 price review, the catch-up factor was set at 50% of the gap to the leading company.

At the 1999 price review, Ofwat concluded that there was still significant scope for efficiency in capital expenditure. It set efficiency targets to close the gap between the least efficient companies and those at the efficiency frontier. This is illustrated in Table 14.3.

Table 14.3: Catch-up factor set by Ofwat in the 1999 price review

	Catch-up factor
Capital maintenance expenditure	40% - 50%
Capital enhancement expenditure	75%

The range of efficiency targets that were set at the 1999 review were as set out in Table 14.4.

Table 14.4: Efficiency targets set by Ofwat in the 1999 price review

	Range	Average
Water service		
Capital maintenance	3% - 14%	10%
Capital enhancement	9% - 24%	13%
Sewerage service		
Capital maintenance	4% - 16%	12%
Capital enhancement	7% - 19%	13%

Ofwat set targets that were significantly lower than the actual assessed efficiency gap. This was designed to create an incentive for the companies to beat the targets.

Ofwat recently published its final determinations for the water and sewerage companies⁴. The final determination set out:

- what Ofwat believes is the scope for efficiency savings in capital expenditure; and
- what it has set as the efficiency targets in capital expenditure.

These are set out in Table 14.5.

³ The *Quality and Standards II* investment programme was originally costed at £2.3 billion. In the *Strategic Review of Charges 2002-06* the target for delivery of this programme was set at £1.8 billion.

⁴ Ofwat, 'Future water and sewerage charges 2005-10: Final determinations', December 2004.

Table 14.5: Ofwat targets set in the 2004 final determinations

	Scope for efficiency savings	Efficiency targets
Water service – capital maintenance	17.0%	7.9%
Water service – capital enhancement	18.2%	11.9%
Sewerage service – capital maintenance	18.8%	9.2%
Sewerage service – capital enhancement	20.0%	12.9%

Ofwat allows the companies significant scope to outperform the efficiency targets. It has continued to allow greater scope in capital maintenance than in capital enhancement expenditure.

The companies have been successful in meeting, and outperforming, the relatively challenging efficiency targets that Ofwat set in its previous price reviews. Given our assessment of the efficiency gap at the last *Strategic Review of Charges*, this would indicate that there is significant scope for Scottish Water to improve its efficiency in capital expenditure.

14.4 Industry-wide scope for productivity improvement

During the 2004 price review, Ofwat commissioned two studies to examine the potential scope for efficiency improvement in the water industry. These studies were carried out by Europe Economics⁵ and London Economics⁶.

The Europe Economics report

The Europe Economics study updated and expanded on work that it had carried out for Ofwat as part of the 1999 price review. The updated study was published in March 2003.

Europe Economics adopted a top-down approach to assess the scope for efficiency improvement in the water and sewerage industry in England and Wales over the period 2003-13. Essentially, this approach involved comparing the water and sewerage companies with:

- sectors of the economy that have similar activities to the water and sewerage companies; and
- other UK privatised infrastructure companies since their privatisation.

The study compared productivity trends in the water and sewerage companies in England and Wales against the same trends in the two groups of comparators. Comparison against the first group appeared to indicate that as a result of the nature of their businesses, water and sewerage companies do have further scope to improve their efficiency faster than the economy as a whole. Comparison against other privatised infrastructure companies indicated that these companies had reduced costs by more than might have been expected. The study suggested that the privatisation of the water and sewerage companies may have led directly to improved performance and it seems likely that incentive regulation had also played a part. The study found that it was difficult to forecast whether such outperformance would continue in the future.

Europe Economics made clear that the study related *“to the totality of base service expenditures, comprising both operating expenditure and capital maintenance expenditure...”*⁷. As a result, the study took into account improvements in customer service and delivery of higher water and environmental quality standards. It was essential that these changes were taken into account, otherwise the improvement in productivity achieved by the industry would be underestimated.

The comparisons of productivity trends allowed Europe Economics to forecast the scope for efficiency improvements in the water and sewerage industry in England and Wales for the period 2003-13. Europe Economics concluded that the companies in England and Wales had scope to improve base service expenditure efficiency on a like-for-like basis by around 2%-3% per year. Table 14.6 summarises Europe Economics' conclusions.

⁵ Europe Economics, 'Scope for efficiency improvement in the water and sewerage industries: Final report', March 2003.

⁶ London Economics, Black & Veatch Consulting and Professor Maurice F. Shutler, 'PR04 scope for efficiency studies', December 2003.

⁷ Europe Economics, 'Scope for efficiency improvement in the water and sewerage industries: Final report', March 2003, page 3

Table 14.6: Europe Economics assessed scope for efficiency improvements

	Water	Wastewater
Scope for reductions in real base service operating and capital maintenance expenditure	1.5% to 3% per year	1.75% to 3.25% per year
Scope for reductions in real base service operating expenditure	2% to 4% per year	2.25% to 4.25% per year

Europe Economics' conclusions are not directly applicable in Scotland. They apply to the scope for improvement in companies that are more efficient than Scottish Water.

The London Economics report

This report was published in December 2003. Ofwat asked London Economics to look at the scope for future efficiency in the water and sewerage industry and to address criticisms of previous efficiency reports.

London Economics used two methods to arrive at its assessment of the scope for future efficiency – a top-down approach and a bottom-up approach. Table 14.7 summarises the conclusions of the study.

Table 14.7: Assessment of scope for capital expenditure efficiency – London Economics study

	Annual average reduction in real unit costs (%)	
	Top-down results	Bottom-up results
Capital expenditure – water	0.1% to 1.3%	1.1%
Capital expenditure – sewerage	0.1% to 1.3%	1.4%

The top-down approach was essentially similar to that used by Europe Economics in that it involved analysing past productivity trends in the water and sewerage industry and comparing these with similar industries. We discussed the top-down approach in detail in Chapter 11 of Volume 4. We highlighted two issues with the top-down approach:

- London Economics used information from the water and wastewater industry in the UK to assess past productivity trends; this included both Scotland and Northern Ireland. The inclusion of two areas that have not been subject to the same period of incentive

regulation as England and Wales raises the possibility that the achievements in England and Wales are underestimated; and

- London Economics acknowledged that it had made no allowance for improvements in customer service that have occurred in England and Wales since privatisation. This would potentially introduce a downward bias to the estimates.

London Economics' bottom-up approach focussed on:

- a review of past reports;
- an assessment of the potential for future efficiency savings from cost reducing technology and management practices;
- a review of the companies' 2003 cost base and annual return submissions; and
- an examination of the scope for efficiency in each area of the investment programmes contained within the companies' business plans.

London Economics found that opportunities for cost savings from new technologies appeared to be small (up to 0.5% a year) and that greater opportunities existed in the areas of procurement and management practices (0.25% to 1.25% per year). This view was consistent with the conclusions of the 1998 Babbie report⁸, which covered the period 2000-05.

There are two main factors that limit the applicability of London Economics' conclusions to the water industry in Scotland. First, London Economics' conclusions relate to companies that are likely to be more efficient in capital delivery than Scottish Water. London Economics found that the companies had achieved savings in the cost base of up to 4% per year in the five-year periods between price reviews in 1994, 1999 and 2004. However, London Economics concluded that this level of savings is unlikely to be sustained in the period to 2010.

⁸ Babbie Environmental, 'Report and opinion on the scope for widescale adoption of lower cost new technologies and practices in the water industry', December 1998.

We have not seen evidence that the water industry in Scotland has been able to achieve a similar sustained level of savings over the period from the early 1990s to the present day. As a result, it appears very likely that the scope for efficiency savings is greater in Scottish Water than in the companies in England and Wales.

The second factor is that London Economics derived its results by weighting the potential efficiency savings in each area of investment by the proportion of the capital programme assigned to that area.

The expenditure weightings used by London Economics in its report were taken from the companies' draft business plans. The scope for efficiency savings reported by London Economics is therefore not necessarily applicable to Scottish Water because the final composition of the investment programme in Scotland could be different from that in England and Wales.

14.5 Scope for improvement in investment performance by Scottish Water

We propose to take account of the following factors in determining the scope for Scottish Water to improve its capital efficiency:

- Evidence published by Ofwat relating to the performance of the water and wastewater industry in England and Wales in improving efficiency;
- Information from Ofwat and its consultants (such as Europe Economics and London Economics) regarding the scope for further improvement in England and Wales;
- Our view of Scottish Water's current performance. This will be informed by our analysis of the efficiency gap between Scottish Water and the companies in England and Wales; and
- Our view of the scope for Scottish Water to improve performance by adopting best practice techniques such as the UKWIR common framework⁹ and achieving economic levels of leakage.

⁹ See Chapter 3 of this document.

14.6 How quickly can this improvement be made?

We need to consider how quickly Scottish Water should be able to achieve the efficiency improvements. It is possible to conclude that the required efficiency improvements should be made from the start of the regulatory period as a 'step change'. However, it may be more appropriate to phase the efficiency improvements over the regulatory control period. We adopted the second approach at the last *Strategic Review of Charges*.

We are able to draw upon regulatory precedent in the water and wastewater industry to assess how quickly Scottish Water should be required to improve its efficiency. At its 1999 price review Ofwat set the companies two targets: It set all the companies (except the best performing company) a target to narrow the capital expenditure efficiency gap with the best performing company. Companies were required to achieve this target in the first year of the regulatory control period. Ofwat also set all the companies a target to improve their capital expenditure efficiency in each year of the regulatory control period. Ofwat expected the companies to achieve annual improvements of 1.4% for capital maintenance and 2.1% for capital enhancement.

Following Ofwat's price determination, two companies – Mid Kent Water and Sutton & East Surrey Water – appealed to the Competition Commission. The Competition Commission concluded that it was more appropriate to phase the catch-up in capital expenditure efficiency over the first three years of the regulatory control period. The Competition Commission made no distinction between capital maintenance and capital enhancement expenditure in terms of the rate of improvement that was expected. However, the Commission did agree with Ofwat's approach of setting the level of catch-up at 50% of the gap for capital maintenance and 75% of the gap for capital enhancement.

Ofwat modified its approach for the 2004 price review. In the final determinations, published this month, capital maintenance catch-up is phased evenly over the first

three years of the review period. This is consistent with the Competition Commission's approach. Ofwat decided not to phase capital enhancement catch-up.

We would welcome the views of stakeholders on the approach that we should adopt. Our preliminary view is that we should adopt the Competition Commission's approach and phase the required catch-up improvement over the first three years of the regulatory control period. This would give Scottish Water the opportunity to implement improvements in asset management techniques. We do not plan to distinguish between the scale and pace of improvement in capital maintenance and capital enhancement expenditure in setting targets. We believe that it is appropriate to set consistent targets for all elements of the programme, given the relatively short regulatory control period.

14.7 Incentives for improvement

The capital efficiency of the companies continues to improve. This continued improvement is due, at least in part, to the framework for incentive-based regulation. Ofwat seeks to minimise customers' bills by setting challenging targets which it believes a well-managed company should beat. Shareholders encourage outperformance of the regulatory settlement in order to improve the return on their investment.

The companies south of the border have, on average, always managed to outperform the targets set by Ofwat. During the period 1995-2000, the industry as a whole performed more than 10% better than the targets set by Ofwat. Not surprisingly given the extent of improvement since 1989, current levels of outperformance are rather lower.

Ofwat continues to set efficiency targets such that a well-managed company will outperform. The company can retain the benefits of outperformance for five years. At the end of five years, the benefits are transferred to customers¹⁰.

The incentive to outperform regulatory targets in the public sector model is different. We were keen to ensure that customers received the best value for money from the *Quality and Standards II* investment programme. The absence of a transparent incentive framework led us to seek to set a more challenging efficiency target for capital expenditure. Accordingly, in the *Strategic Review of Charges 2002-06*, we set Scottish Water capital efficiency targets that were designed to close 80% of the assessed efficiency gap with the companies in England and Wales. This approach increased slightly the size of the efficiency target. However, it is now clear that this approach underestimated the reduction in cost that was possible. This is because, at the last Review, we were unable to rely either on a robust baseline or Reporter challenge to ensure that the investment programme was properly costed and took full account of synergies.

As we explained in Volume 3, we believe that customers' interests would best be served by an incentive framework which encourages Scottish Water to exceed its regulatory targets. Such a framework needs to create a 'win-win' situation for customers and Scottish Water. The benefits for Scottish Water could involve direct incentives, such as staff bonuses, or trade-offs with other targets set for the business, such as operating cost efficiency targets. For customers, the benefits could include reduced prices and improved environmental, drinking water quality or customer service performance.

In the *Strategic Review of Charges 2006-10*, we propose to introduce an incentive framework that rewards Scottish Water for outperformance and provides benefits to customers and stakeholders. Under this framework, Scottish Water would be allowed to retain a proportion of any outperformance in delivering the agreed capital investment programme. Scottish Water would be able to use any such allowed outperformance to off-set the efficiency targets for operating expenditure.

The remainder of the outperformance would be used to deliver additional capital investment outputs identified by stakeholders¹¹. Scottish Water could take credit for

¹⁰ 'Our work in regulating the Scottish water industry: The scope for operating cost efficiency', WICS, Volume 4, October 2004, Chapter 4.

¹¹ 'Stakeholders here means the Scottish Ministers, the Scottish Executive, the Scottish Environment Protection Agency, the Drinking Water Quality Regulator and ourselves

adding outputs that were not funded in the original capital investment programme. We would ask the stakeholders to agree the projects to be funded.

We believe that this framework would be relatively straightforward to implement and that it would provide Scottish Water with an incentive to exceed its capital efficiency targets. If this incentive framework were supported by appropriate managerial incentives we would set targets that we believe Scottish Water should be able to outperform.

The details of this incentive framework would need to be developed during the *Strategic Review of Charges 2006-10*. We anticipate that Scottish Water should be allowed to retain between 25% and 50% of any outperformance. If a component of the programme valued at £100 million (post-efficiency) was delivered for £90 million, then Scottish Water would be able to retain between £2.5 million and £5 million. The remainder of the £10 million outperformance would be available to fund other investment priorities determined by the stakeholders.

Assessment of outperformance in delivering the investment programme is time-critical. If the elapsed time is too short, this could introduce a risk that outperformance on only a small sample of projects is rewarded. This may lead to early delivery of simple projects and delays to more difficult schemes. Too long an elapsed time may result in reduced incentives for Scottish Water and insufficient time to deliver the additional outputs. We would initially propose to review the extent of outperformance of delivery of the programme on an annual basis.

We believe that introducing incentive-based regulation should protect customers from the risk of underperformance by Scottish Water. This will only be achieved if the costs of such underperformance are met by a third party and at no cost to customers. In the public sector model this would require the Scottish Executive to provide grant-in-aid funds to make good these costs.

We believe that this should ensure that the Scottish Executive scrutinises Scottish Water's performance more rigorously; it will also be less likely to increase Scottish Water's borrowing in the event of a failure to meet targets. This would clearly be in customers' interests.

14.7 Summary

In this chapter we have described our proposed approach to assessing how quickly Scottish Water should improve its investment performance.

It is clear that Ofwat continues to believe that there is scope for further capital efficiency improvement in the water and wastewater industry south of the border. The companies have been successful in outperforming the relatively challenging efficiency targets that have been set in earlier price reviews. This would indicate that there is significant scope for Scottish Water to achieve further savings in investment performance.

We propose to adopt the Competition Commission's approach and phase the required catch-up improvement over the first three years of the regulatory control period. We note, however, that Ofwat has decided not to use this approach for capital enhancement expenditure.

In the *Strategic Review of Charges 2006-10*, we propose to introduce an incentive framework that rewards Scottish Water for outperformance on investment and provides benefits to customers and stakeholders. We also propose to establish the principle that undelivered investment outputs should not be funded a second time in future regulatory periods.

14.8 Questions for consultation

1. Do respondents agree with our proposed approach to establishing the scope for improvement in capital efficiency?
2. Do respondents consider that we should treat capital maintenance and capital enhancement expenditure separately?

3. Do respondents agree that our proposals for introducing an incentive mechanism for outperformance will be in the interests of customers and stakeholders? Does the proposed mechanism provide appropriate incentives for outperformance, and does it share the benefits fairly between Scottish Water and customers? If not, which other mechanism would be preferable?
4. Do respondents agree that any failure to meet efficiency targets should be funded by grant-in-aid from the Scottish Executive?

Section 4: Chapter 15

Setting targets for efficiency in capital expenditure

15.1 Introduction

Chapter 14 outlined how we propose to establish the scope for Scottish Water to improve its capital efficiency. In this chapter we set out how we propose to set a defined, efficient baseline for Scottish Water's capital investment programme for 2006-10.

We set targets that we believe are challenging but achievable. We monitor and report on the delivery of these targets to ensure that customers receive the promised benefits of the investment. In this chapter we set out our proposed framework for determining the defined, efficient baseline for the capital programme.

15.2 Issues that affect our approach to target setting

We need to take account of a range of issues that will affect Scottish Water's ability to deliver its capital investment programme efficiently. We have discussed these 'critical factors' in previous chapters. They are:

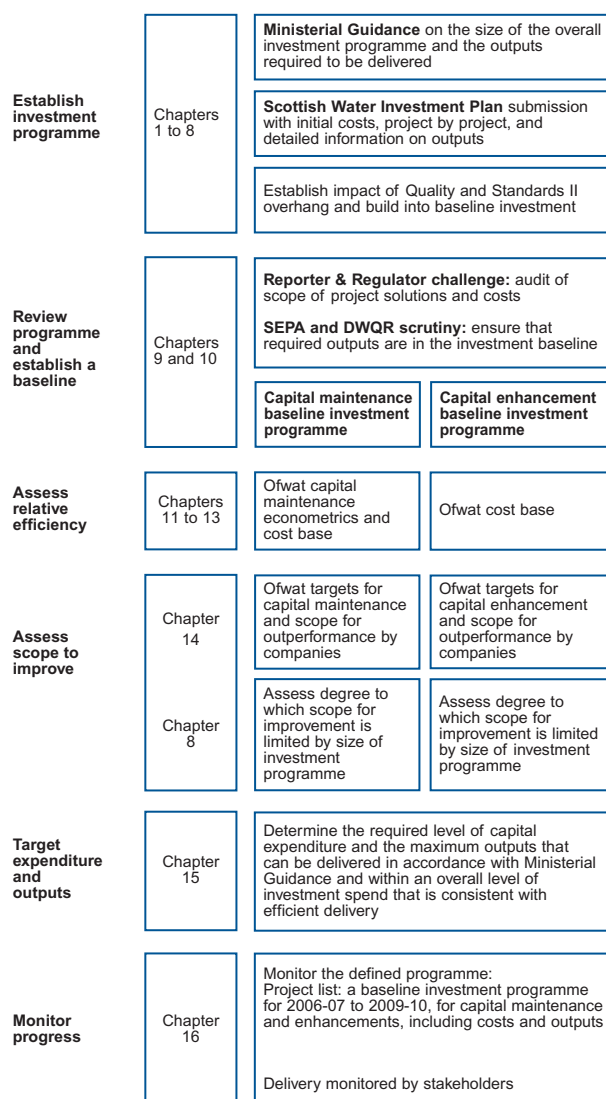
- the proportion of *Quality and Standards II* that will not have been delivered by March 2006;
- historical evidence on the size of investment programmes that are deliverable; and
- the incentive for Scottish Water to improve its performance.

15.3 Our proposed overall framework for setting targets

Our approach focuses on maximising the delivery of investment outputs, which have been identified as priorities by Ministers and stakeholders, within an overall level of investment spend that is consistent with efficient delivery.

We discussed the elements of this framework in earlier chapters. The overall framework is illustrated in Figure 15.1, along with the appropriate chapter references.

Figure 15.1: Framework for capital investment targets



15.4 Step-by-step process for setting targets

We propose to adopt a different approach to setting targets for capital efficiency in capital maintenance and in quality enhancement expenditure. In both cases, outperformance of targets will increase the resources available to add outputs to the baseline investment programme for the regulatory control period.

We propose to use the Ofwat cost base approach to assess the appropriate level of expenditure. We will

adjust downwards our estimate of the scope for efficiency if the proposed investment programme is too large.

We propose to use the Ofwat econometric models to assess the efficient level of capital maintenance expenditure for Scottish Water. We will adjust the results of the models to reflect any special factors that impact on Scottish Water's costs. We will also use the Ofwat cost base either to assess the scope for efficiency on the proposed capital maintenance programme or to assess whether we need to increase the capital maintenance allowance suggested by the adjusted econometric models to reflect the relative inefficiency of Scottish Water.

We set out our step-by-step process for each investment category below:

For both capital maintenance and capital enhancement

1. Establish a fully defined investment programme

Following Ministerial Guidance, Scottish Water will submit its investment plan in the agreed format for the second draft business plan. This format provides for a detailed list of projects and their associated outputs. It will also include a separate list that outlines in similar detail the proportion associated with *Quality and Standards II* projects that will not have been delivered by the end of March 2006. If we have been unable to reach agreement on the potential overhang by 28 January 2005 we will set an appropriate baseline.

2. Review the programme and establish a baseline

Scottish Water's investment plan will be scrutinised in detail by the Reporter, the quality regulators¹ and this office. We will determine whether the programme meets the objectives set out by Ministers. The output from this process will be a detailed baseline programme, which will list the projects required to deliver the investment requirements for capital maintenance and quality enhancement priorities.

For capital enhancement

3. Assess current efficiency gap

We will use Ofwat's cost base approach to determine the size of the procurement efficiency gap between Scottish Water and the companies in England and Wales.

4. Assess scope for further improvement

We will consider the scope for further improvement based on the targets set by Ofwat.

5. Establish the total allowable expenditure for capital enhancement

We will use the results of Steps 4 and 5 to establish the total allowable expenditure for quality enhancement for each year of the next regulatory period.

For capital maintenance

3. Estimate the annual efficient level of expenditure for Scottish Water, consistent with the companies' recent performance

We will use the capital maintenance econometric models developed by Ofwat to estimate the cost of maintaining serviceability of the current asset base at average levels of efficiency.

4. Adjust the results to take account of special factors

We will consider any representations from Scottish Water that would justify additional funding for specific capital maintenance objectives.

5. Check the adjusted results of the econometric models

We will carry out a series of high-level comparisons to check that the adjusted results of the models do not underestimate Scottish Water's capital maintenance requirements.

¹ SEPA and DWQR.

6. *Use the cost base approach to assess the current gap in capital expenditure efficiency*

We will use the cost base approach described in Chapter 11 to determine Scottish Water's current capital efficiency position.

7. *Assess the scope for further improvement*

We propose to take account of Ofwat's expectations for improvement in capital efficiency when we set targets. Ofwat has recently published its final determinations² and we will draw on the evidence accepted by Ofwat to inform our analysis of the further scope for improvement. This will inform the targets that we set for each year.

8. *Use the cost base results to set an appropriate level of capital maintenance spending*

There are two ways in which we can use the results of the cost base analysis. Our approach will depend on the level of detail that Scottish Water is able to provide on its proposed capital maintenance investment programme.

If we consider that the programme is sufficiently detailed, we would propose to apply an efficiency target (calculated by analysis of the cost base) to the capital maintenance programme planned by Scottish Water.

If we conclude that the programme is insufficiently detailed, we would use the results of the cost base to increase the adjusted allowance for capital maintenance that is suggested by Ofwat's econometric models.

9. *Set total level of capital expenditure and final baseline of projects with associated outputs*

We will set a total allowance for capital expenditure and a detailed list of projects with associated outputs. This will be the baseline against which we would expect stakeholders and customers to monitor and judge Scottish Water's performance.

15.5 Summary

Setting challenging but achievable targets benefits customers and stakeholders. It should result in more effective investment, delivered at lower cost.

We have set out our proposed step-by-step approach by which we will arrive at the total allowable investment expenditure for each year of the next regulatory control period. Our view is that the approach provides a robust set of targets for investment delivery against which we can monitor Scottish Water's performance in the next regulatory control period.

15.6 Questions for consultation

1. Do respondents think that our proposed methodology for setting targets is robust?
2. Do respondents agree that we should take account of the 'critical factors' we have listed (*Quality and Standards II* overhang, limitations on the size of the programme and incentives to outperform) in setting investment targets for Scottish Water? Are there are other factors that we should take into account?
3. Do respondents think that the scope for improvement is different between capital maintenance and capital enhancement and between water and sewerage?

² *Future water and sewerage charges 2005-10* – Final determinations

Section 4: Chapter 16

Monitoring capital delivery

16.1 Introduction

We believe that monitoring and reporting on Scottish Water's performance in achieving targets is critical to ensuring that customers receive value for money. Our regular reports on Investment and Asset Management provide customers and stakeholders with an objective assessment of the performance of Scottish Water.

In earlier chapters we discussed the importance of establishing a baseline capital investment programme against which Scottish Water's capital investment performance can be monitored. In this chapter we discuss in more detail how we propose to do this.

Our monitoring will:

- establish how much Scottish Water spends each year on the projects that comprise its capital investment programme; and
- assess Scottish Water's progress in delivering the investment outputs defined in the baseline programme.

We are already monitoring Scottish Water's capital expenditure in this current regulatory control period and are assessing its efficiency and effectiveness. We do this by comparing Scottish Water's performance against the targets set in the *Strategic Review of Charges 2002-06*. These targets require Scottish Water to deliver the *Quality and Standards II* investment programme, originally costed at £2.3 billion, for £1.8 billion.

The baseline programme for the next regulatory control period will include any undelivered element from the *Quality and Standards II* investment programme. It will also include the investment required to meet the objectives set by Ministers for *Quality and Standards III*.

Our proposal to channel any outperformance of the capital programme into investment in additional outputs will require more detailed annual assessment of the level of efficiency achieved by Scottish Water.

This chapter outlines:

- the current framework for monitoring Scottish Water's performance;
- our proposed monitoring framework for the *Strategic Review of Charges 2006-10*; and
- our proposed approach to monitoring the outputs of the investment programme.

16.2 The existing monitoring framework

In the *Strategic Review of Charges 2002-06* we set Scottish Water challenging, but achievable, efficiency targets for capital expenditure. These targets were phased. It is important to keep in mind what we mean by efficiency. An efficiency can only be claimed if the required outputs are delivered at lower cost. It specifically does not involve delaying delivery of the outputs into subsequent periods. Nor does it involve simply not delivering the outputs.

During this current regulatory control period¹ we have established a monitoring framework for capital expenditure. This comprises the following:

- Regular information submissions on investment performance

The key investment submissions are the Annual Return and the Capital Investment Return². The Annual Return is the largest single information request that we issue to Scottish Water each year. The format is based closely on Ofwat's June Return and it includes comprehensive information on progress with Scottish Water's investment programme. The Capital Investment Return (CIR) is submitted quarterly and it provides summary information, at a project level, on financial and physical delivery of the investment programme.

Through a combination of the quarterly CIRs and the investment tables in the Annual Return, we can track delivery of the investment programme and monitor

¹ *Strategic Review of Charges 2002-06*

² The content of the Annual Return and the Capital Investment Return is described in more detail in our publication 'Our work in regulating the Scottish water industry: Setting out a clear framework for the Strategic Review of Charges 2006-10', Volume 1, Chapter 3, from page .

the effectiveness and efficiency of Scottish Water. The CIR can also highlight any material changes from the planned investment programme. These may be positive (efficiencies or early delivery of projects) or negative (cost overruns or project delays).

- Independent audit of regulatory information

We appointed a Reporter for the water industry in Scotland in December 2003. The Reporter is required to review all aspects of Scottish Water's information submissions. Our monitoring has benefited from the resulting improvement in the quality of information supplied by Scottish Water.

- Audits of investment appraisal procedures

In the last *Strategic Review* we raised concerns about the level of scrutiny and challenge given by the former authorities to projects as they passed through the planning process. We introduced regular investment appraisal audits. These audits allow us to assess the effectiveness of investment decision making by Scottish Water.

- A stakeholder forum

In Chapter 7 we described how we had established a stakeholder forum to oversee development of the baseline investment programme for *Quality and Standards II*. The forum included representatives from Scottish Water, the Scottish Executive, the Scottish Environment Protection Agency (SEPA), the Drinking Water Quality Regulator (DWQR) and this office.

This forum developed a 'substitution' process which, through stakeholder agreement, allows projects to be removed from the programme and new projects added.

This monitoring framework allows us to assess Scottish Water's performance in delivering its investment programme. We also assess Scottish Water's progress in improving its efficiency relative to that of the companies in England and Wales. To assess the performance of the companies in England and Wales we use:

- the companies' annual June Returns to Ofwat;
- comments on these returns by independent auditors, which are published by Ofwat;
- the companies' published regulatory accounts;
- Ofwat's published analysis of companies' progress; and
- the benchmarking tools³.

We publish the results of our assessment of Scottish Water's performance in capital expenditure efficiency in our annual Costs and Performance report.

16.3 Our monitoring framework for the Strategic Review of Charges 2006-10

This volume has described our proposed approach to setting the level of capital expenditure required by Scottish Water to meet the objectives set out by Ministers for the next regulatory control period.

Our current monitoring will need to be developed to take account of the proposals in this volume. Specifically, we will need to:

- make sure that we receive an independent assessment of Scottish Water's Capital Investment Returns;
- create a rigorous but flexible substitution process; and
- develop a process to assess the annual efficiency of the capital investment programme.

We propose to consult with stakeholders on developing an appropriate substitution process. This will draw on the substitution process that was developed for *Quality and Standards II*, but will be adapted to ensure that all of the agreed outputs for *Quality and Standards III* are delivered.

The process to assess the annual efficiency of the investment programme will also need to be developed in consultation with stakeholders, as well as determining

³ See Chapter 13.

how additional outputs will be added to the baseline programme.

If Scottish Water underperforms against its targets, we believe that any element of non-delivery of the investment programme should be funded in future periods by grant funding (ie from the tax-payer), rather than from Scottish Water's customers.

We will continue to provide customers with transparent information about Scottish Water's performance in delivering the investment programme through our annual Investment and Asset Management reports. We also propose to publish in full the baseline investment programme. We will need to explain clearly that the baseline programme is subject to change.

16.4 Our proposed approach to monitoring the outputs of the investment programme

It is important that our monitoring can assess progress on Scottish Water's delivery of the required investment outputs. By 'outputs' we mean measurable benefits such as achieving an agreed standard of water quality, an improvement in environmental performance at a specific location, or a defined improvement in the level of customer service.

We believe that it is important to monitor the delivery of outputs as well as the level of spending and efficiency. Spending is not an end in itself. It is important that customers benefit from the targeted improvements. It is in the customers' interest that we ensure the full benefits of the investment programme are delivered.

Capital enhancement objectives/outputs

For capital enhancement work, such as delivering improved water quality or environmental performance, we will monitor expenditure and delivery of the detailed list of projects in the baseline capital investment programme. The baseline programme will contain information on each capital enhancement project, including the expected outcome in terms of environmental benefit, water quality improvement or customer service enhancement. We propose to work

with SEPA and DWQR to confirm whether or not outputs have been delivered.

Capital maintenance objectives/outputs

To assess the delivery of the capital maintenance objectives set out by Ministers, we will use a combination of project level monitoring and high level output monitoring through 'serviceability measures'. As discussed in Chapter 3, we propose to introduce additional reporting requirements so that stakeholders can develop a better understanding of the serviceability of assets.

Serviceability indicators (for example, the number of water pipe bursts or sewer flooding incidents), describe asset performance in delivering water and sewerage services to customers. Table 16.1 provides a list of Ofwat's serviceability measures.

By considering the overall trends in these indicators over a number of years, it is possible to make a judgement as to whether the level of capital maintenance expenditure is resulting in stable, improving or deteriorating service to customers.

In *Quality and Standards III*, and in its first draft business plan, Scottish Water based its capital maintenance expenditure proposals on delivering defined levels of serviceability. It is likely that the objectives for the investment programme for the period 2006-10 set out by Ministers will also use serviceability measures to define the required level of performance.

We propose to collect information on serviceability indicators to monitor delivery of the capital maintenance element of the investment programme. This information will also allow us to gain a picture of the long-term effectiveness of Scottish Water's capital maintenance expenditure.

Table 16.1: Ofwat's serviceability indicators

Serviceability indicator
Water infrastructure
Extent of low pressure problems
Number of bursts
Scale of interruptions of supplies to customers
Quality compliance
Water non-infrastructure
The number of water treatment works where enforcement action was considered because of contraventions of the coliforms standard
The percentage of the total number of determinations taken at water treatment works containing coliforms
Sewerage infrastructure
Properties flooded because of insufficient sewer capacity
Number of sewer collapses
Number of pollution incidents occurring at combined sewer overflows and sewers
Sewerage non-infrastructure
The percentage of sewage treatment works failing numeric consents
The percentage of equivalent population served by non-compliant works failing look-up tables consents

16.5 Stakeholder monitoring of investment delivery

We have described the framework by which our office will monitor Scottish Water's investment performance. It is also important that the key stakeholders are able to monitor investment delivery and manage the process of project substitution. We propose to share our analysis with the Scottish Executive and the quality regulators on a regular basis. It will be important that the stakeholder group works cohesively to ensure that the investment is delivered effectively and efficiently.

We believe that we should work closely to:

- review progress with delivery of the investment plan;
- oversee the substitution of projects in and out of the programme;
- oversee the measurement of efficiency; and
- agree the additional outputs that are to be provided as a result of any outperformance.

16.6 Summary

In recent years we have established a framework for monitoring capital expenditure. This comprises:

- regular information submissions on investment performance;
- independent audit of regulatory information;
- audits of investment appraisal procedures;
- investment performance reporting; and
- a stakeholder forum.

We propose to develop this framework by:

- reviewing the format for investment reporting in the Annual Return and Capital Investment Return to ensure that it is consistent with the format of the baseline investment programme;
- providing further independent assessment of the regulatory submissions by the Reporter;
- consulting with stakeholders on a mechanism for allowing projects to be substituted within the baseline programme;
- consulting with stakeholders on the mechanism for treating outperformance of investment delivery;
- introducing a serviceability monitoring regime which is similar to that used by Ofwat; and
- extending the stakeholder forum to ensure detailed performance monitoring.

We will continue to publish reports on Scottish Water's progress, particularly with regard to the targets set in the final regulatory settlement. These reports will provide customers with a clear understanding of Scottish Water's performance in delivering water and wastewater services.

16.7 Questions for consultation

1. What are respondents' views on our proposed approach to monitoring Scottish Water's investment performance?
2. Is our regulatory reporting mechanism sufficient to meet the needs of both customers and stakeholders?

Appendix 1:

Investment plan definitions

Tables C and E: Investment plan column definitions

Introduction

Scottish Water's business plan should be accompanied by an investment plan, largely at individual project level (exceptions are described in the plan guidance). The investment plan comprises the following tables:

- Table C: Investment plan 2006 to 2014;
- Table E: Overhang of previous investment plan (ie previously approved Quality & Standards II projects which incur expenditure during the plan period).

We expect Scottish Water to retain the 2002-03 cost base from which the investment programme projects were costed. However, we require project costs to be inflated (using COPI) to average 2003-04 prices. This average should use the mean COPI index of 2003, quarters 2, 3 and 4 and 2004, quarter 1. Scottish Water should state in Table B7.14 the index value of COPI that it has used to rebase the investment programme costs.

All scheme costs should be in £ million, to three decimal places (dp).

Table C column definitions:

Section 1 - General project information:

Column No: 1	Column Title: Project Autocode
Units: n/a	Processing Rules: Input field

Definition:

This is the project code allocated to the project within the Scottish Water investment programme database. All codes should be mutually exclusive and should relate to discreet projects. All projects that have been disaggregated from other projects or schemes should have an audit trail that may, from time to time, be scrutinised by the Reporter.

Any projects contained in the *Quality & Standards II* project list and also (for whatever reason) in the list of projects for *Quality & Standards III* must have the same

project autocode in both submissions. *Quality and Standards II* projects must contain the same autocode as used in the WIC18 and Capital Investment Return submissions.

Column No: 2	Column Title: Project Title
Units: n/a	Processing Rules: Input field

Definition:

This is the project title used in the Scottish Water investment programme database. The project title should be mutually exclusive of all others in Tables C and E and should indicate the scope of work being undertaken. Any projects contained in the *Quality & Standards II* project list and also (for whatever reason) in the list of projects for *Quality & Standards III* must have the same project title in both submissions. *Quality and Standards II* projects must contain the same title as used in the WIC18 and Capital Investment Returns. The project title, wherever possible, should give some indication of the type of works to be undertaken as part of the project.

Column No: 3	Column Title: Water or Wastewater project (primary purpose)
Units: n/a	Processing Rules: Input field

Definition:

One of the primary purposes: 'water' or 'wastewater', should be entered to indicate whether the project falls under the water or wastewater function. Any cross-functional work will need to be split into: water *and* wastewater projects.

Column No: 4	Column Title: Project Classification 1
Units:	Processing Rules: Input field

Definition:

Enter only *one* of the following secondary purposes:

- capital maintenance
- quality
- supply/demand
- enhanced service.

For any combined projects, the dominant purpose should be entered.

Column No: 5	Column Title: Project Classification 2
Units: n/a	Processing Rules: Input field

Definition:

Enter one of the following secondary classifications, only if the project is estimated to total £100,000 total or less.

- Infra – IRE
- Infra – Non-IRE
- Non-infra.

For projects totalling more than £100,000 this cell should be left blank and the total project cost proportionately allocated by value across columns 6 (Infra – IRE), 7 (Infra – Non-IRE) and 8 (Non-infra).

Note: Infra, Non-infra, IRE and Non-IRE are defined in WICS Regulatory Accounting Rules 1.

Column No: 6	Column Title: Infra – IRE Proportion of Projects over £100k
Units: £m to 3 dp	Processing Rules: Input field

Definition:

For projects estimated to total more than £100,000, enter the proportion of the total cost attributable to Infra-IRE.

Note: Infra-IRE is defined in WICS Regulatory Accounting Rules 1.

Column No: 7	Column Title: Infra – Non-IRE Proportion of Projects over £100k
Units: £m to 3 dp	Processing Rules: Input field

Definition:

For projects estimated to total more than £100,000, enter the proportion of the total cost attributable to Infra – Non-IRE.

Note: Infra – Non-IRE is defined in WICS Regulatory Accounting Rules 1.

Column No: 8	Column Title: Non - Infra Proportion of Projects over £100k
Units: £m to 3 dp	Processing Rules: Input field

Definition:

For projects estimated to total more than £100,000, enter the proportion of the total cost attributable to Non-Infra.

Note: Non-Infra is defined in WICS Regulatory Accounting Rules 1.

Column No: 9	Column Title: Q&SIII Scenario (from which project was taken)
Units: Integer	Processing Rules: Input field

Definition:

During the establishment of investment priorities for the *Quality & Standards III* period, a range of scenarios was considered relating to the scope of outputs to be achieved by each project. **One** of the scenarios shown below should be entered as a single number (eg if the project has been selected from scenario 2, enter 2 into cell).

- Scenario 1: Do nothing option
- Scenario 2: Legislative 'do minimum'
- Scenario 3: Enhanced option
- Scenario 4: Aspirational option.

Column No: 10	Column Title: Current Project Status Code
Units: n/a	Processing Rules: Input field

Definition:

Enter one of the following WICS codes S0 to S11 to indicate the current project progress status. The equivalent Scottish Water capital expenditure approval stages are included for clarity.

WICS code	Definition	Scottish Water capital expenditure status
S0	Investment need recognised, but no specific project yet identified	
S1	Inception: project has been identified but no detailed appraisal has been completed	Capex 1 approval
S2	Appraisal: initial detailed appraisal has been completed	Capex 2 approval
S3	Project appraised and under development before construction	Capex 3 approval
S4	Planning approved	
S5	SEPA consent granted	
S8	Works under construction	
S10	Beneficial use achieved	Capex 5 approval
S11	Works and expenditure complete – project closed	

Column No: 11	Column Title: Forecast / Actual – Project CAPEX Approval (s3) Date
Units: mmm-yyyy	Processing Rules: Input field

Definition:

Enter the month and year at which it is forecast that the project will reach WICS project status code s3. This is the equivalent of Scottish Water's Capex 3 approval. For those programmes of work being reported as aggregated lines, leave cell blank.

Column No: 12	Column Title: Forecast / Actual – Project, Construction Start Date
Units: mmm-yyyy	Processing Rules: Input field

Definition:

Enter the month and year at which it is forecast that physical construction on the project site will start. For those programmes of work being reported as aggregated lines, leave cell blank.

Column No: 13	Column Title: Forecast / Actual – Project, Beneficial Use Date
Units: mmm-yyyy	Processing Rules: Input field

Definition:

Enter the month and year (eg mar-2008) that the project is either forecast to, or has actually achieved, beneficial use (ie project status S10).

'Beneficial use' means that the specified outputs of the project are available, and customers (or the environment) are able to enjoy the full benefit of the investment. In many cases beneficial use will occur some time before works and expenditure are complete and the project is closed (ie project status S11).

Column No: 14	Column Title: Project Location – Local Authority
Units: n/a	Processing Rules: Input field

Definition:

Enter the name of a single local authority within which the majority of the works are located. This information relates to the physical location of the works, **not** the location of the population served.

Column No: 15	Column Title: Population/population equivalent released from development constraints
Units: nr	Processing Rules: Input field

Definition:

This is the population or population equivalent released from development previously constrained by capacity limitations of Scottish Water's assets. This may be attributable to investment driven specifically by the release of development constraints or to incremental benefits of investment driven by other drivers (eg quality, capital maintenance, etc).

Section 2 - Project capital cost information:

Column No: 16	Column Title: Total Q&S III Project Cost
Units: £m to 3 dp	Processing Rules: Calculated field. The sum of columns 15 to 22 inclusive.

Definition:

This is the total capital cost of all projects within the *Quality and Standards III* period 2006-07 to 2013-14. Costs incurred in periods prior to and post this review period should **not** be included in this column.

Column No: 17	Column Title: Project Expenditure Pre 2006/07
Units: £m to 3 dp	Processing Rules: Input field

Definition:

Enter **any** expenditure incurred on an individual project prior to the start of the *Quality and Standards II* period (31 March 2006).

Column No: 18	Column Title: Project Expenditure Profile 2006/07
Units: £m to 3 dp	Processing Rules: Input field

Definition:

Forecast project expenditure during 2006-07

Column No: 19	Column Title: Project Expenditure Profile 2007/08
Units: £m to 3 dp	Processing Rules: Input field

Definition:

Forecast project expenditure during 2007-08.

Column No: 20	Column Title: Project Expenditure Profile 2008/09
Units: £m to 3 dp	Processing Rules: Input field

Definition:

Forecast project expenditure during 2008-09.

Column No: 21	Column Title: Project Expenditure Profile 2009/10
Units: £m to 3 dp	Processing Rules: Input field

Definition:

Forecast project expenditure during 2009-10.

Column No: 22	Column Title: Project Expenditure Profile 2010/11
Units: £m to 3 dp	Processing Rules: Input field

Definition:

Forecast project expenditure during 2010-11.

Column No: 23	Column Title: Project Expenditure Profile 2011/12
Units: £m to 3 dp	Processing Rules: Input field

Definition:

Forecast project expenditure during 2011-12.

Column No: 24	Column Title: Project Expenditure Profile 2012/13
Units: £m to 3 dp	Processing Rules: Input field

Definition:

Forecast project expenditure during 2012-13.

Column No: 25	Column Title: Project Expenditure Profile 2013/14
Units: £m to 3 dp	Processing Rules: Input field

Definition:

Forecast project expenditure during 2013-14.

Column No: 26	Column Title: Project expenditure post 2013/14
Units: £m to 3 dp	Processing Rules: Input field

Definition:

Any forecast expenditure on an individual project after the *Quality and Standards III* period ends on 31 March 2014.

Column No: 27	Column Title: Total Project Cost
Units: £m to 3 dp	Processing Rules: Input field

Definition:

This is the total cost of the project, irrespective of when the expenditure is incurred.

Section 3 - Project asset base valuation and operating expenditure information:

Column No: 28	Column Title: Impact of Project on Scottish Water's GEARC (Gross Equivalent Asset Replacement Cost)
Units: £m to 3dp	Processing Rules: Input field

Definition:

This is the forecast project impact on Scottish Water's total asset base valuation. This should be measured by the impact that the individual project will have on the Gross Equivalent Asset Replacement Cost (GEARC) of the total asset base.

This information will enable this Office to monitor changes made within the asset inventory and reconcile these to the developments in the investment programme as the period moves forward.

Column No: 29	Column Title: Impact of Project on OPEX
Units: £ per annum	Processing Rules: Input field

Definition:

This is the estimated impact that the project will have on average annual operating expenditure. This figure should be the net change in costs arising from new and improved assets, taking account of any savings. Operating expenditure cost savings may result from the operation of new/improved assets.

Section 4 – Capital maintenance information:

Column No: 30	Column Title: Proportion of Capital Maintenance Element of Project - £m
Units: £m to 3 dp	Processing Rules: Input field

Definition:

This is the proportion of the individual project cost that is ascribed to a capital maintenance driver. The proportion should be expressed financially as £m.

Column No: 31	Column Title: Proportion of Capital Maintenance Element of Project - %
Units: Percentage	Processing Rules: Input field

Definition:

This is the proportion of the individual project cost that is ascribed to a capital maintenance driver. The proportion should be expressed as a percentage of the total project budget in column 27.

Section 5 – Project driver information:

This section (columns 32 to 41 inclusive) requires drivers (after capital maintenance) to be proportionally allocated to individual projects. Where possible, drivers specified by stakeholders as part of the *Quality & Standards III* process have been used. Appendix A to these definitions contains lists of drivers and the codes that are to be used. These are the drivers upon which *Quality & Standards III* investment proposals were based (apart from capital maintenance), and only drivers contained in the lists should be used.

Column No: 32	Column Title: Primary Driver After Capital Maintenance
Units: n/a	Processing Rules: Input field

Definition:

Enter most relevant single driver code from those listed in Appendix A to these definitions.

Column No: 33	Column Title: Primary Driver % Allocation
Units: Percentage	Processing Rules: Input field

Definition:

Enter the percentage of project total value that is attributable to the primary driver in column 32.

Column No: 34	Column Title: Driver 2
Units: n/a	Processing Rules: Input field

Definition:

Enter the most relevant single driver code from those listed in Appendix A to these definitions.

Column No: 35	Column Title: Driver 2 - Percentage Allocation
Units: Percentage	Processing Rules: Input field

Definition:

Enter the percentage of project total value that is attributable to driver 2, in column 34.

Column No: 36	Column Title: Driver 3
Units: n/a	Processing Rules: Input field

Definition:

Enter the most relevant single driver code from those listed in Appendix A to these definitions.

Column No: 37	Column Title: Driver 3 Percentage Allocation
Units: Percentage	Processing Rules: Input field

Definition:

Enter the percentage of project total value that is attributable to the driver 3, in column 36.

Column No: 38	Column Title: Driver 4
Units: n/a	Processing Rules: Input field

Definition:

Enter the most relevant single driver code from those listed in Appendix A to these definitions.

Column No: 39	Column Title: Driver 4 Percentage Allocation
Units: Percentage	Processing Rules: Input field

Definition:

Enter the percentage of project total value that is attributable to driver 4, in column 38.

Column No: 40	Column Title: Driver 5
Units: n/a	Processing Rules: Input field

Definition:

Enter the most relevant single driver code from those listed in Appendix A to these definitions.

Column No: 41	Column Title: Driver 5 Percentage Allocation
Units: Percentage	Processing Rules: Input field

Definition:

Enter the percentage of project total value that is attributable to driver 5 in column 40.

Section 6 – Project output information:

This section (cols 42 to 56 inclusive) requires output information for individual projects. For simplicity, outputs have been assigned to the set of driver codes employed

above (as detailed in Appendix A). For each project line in the programme, the primary output should be identified and apportioned where appropriate over a maximum of four other outputs. Lists of output classifications are contained in Appendix B to this guidance. Only outputs contained in Appendix B should be used.

Column No: 42	Column Title: Primary Output Reference Code
Units: n/a	Processing Rules: Input field

Definition:

Enter a relevant driver code reference from Appendix B.

Column No: 43	Column Title: Primary Output Units
Units: as applicable	Processing Rules: Input field

Definition:

Enter the output units (from Appendix B) that correspond with the reference code in column 42.

Column No: 44	Column Title: Primary Output Value
Units: n/a	Processing Rules: Input field

Definition:

Enter the amount of the units specified in column 43 which the project aims to achieve.

Column No: 45	Column Title: Output 2 - Reference Code
Units: n/a	Processing Rules: Input field

Definition:

Enter a relevant driver code reference from Appendix B.

Column No: 46	Column Title: Output 2 - Units
Units: as applicable	Processing Rules: Input field

Definition:

Enter the output units (from Appendix B) that correspond with the reference code in column 45.

Column No: 47	Column Title: Output 2 - Value
Units: n/a	Processing Rules: Input field

Definition:

Enter the amount of the units specified in column 46 which the project aims to achieve.

Column No: 48	Column Title: Output 3 - Reference Code
Units: n/a	Processing Rules: Input field

Definition:

Enter a relevant driver code reference from Appendix B.

Column No: 49	Column Title: Output 3 - Units
Units: as applicable	Processing Rules: Input field

Definition:

Enter the output units (from Appendix B) that correspond with the reference code in column 48.

Column No: 50	Column Title: Output 3 - Value
Units: n/a	Processing Rules: Input field

Definition:

Enter the amount of the units specified in column 49 which the project aims to achieve.

Column No: 51	Column Title: Output 4 - Reference Code
Units: n/a	Processing Rules: Input field

Definition:

Enter a relevant driver code reference from Appendix B.

Column No: 52	Column Title: Output 4 - Units
Units: as applicable	Processing Rules: Input field

Definition:

Enter the output units (from Appendix B) that correspond with the reference code in column 51.

Column No: 53	Column Title: Output 4 - Value
Units: n/a	Processing Rules: Input field

Definition:

Enter the amount of the units specified in column 52 which the project aims to achieve.

Column No: 54	Column Title: Output 5 - Reference Code
Units: n/a	Processing Rules: Input field

Definition:

Enter a relevant driver code reference from Appendix B.

Column No: 55	Column Title: Output 5 - Units
Units: as applicable	Processing Rules: Input field

Definition:

Enter the output units (from Appendix B) that correspond with the reference code in column 54.

Column No: 56	Column Title: Output 5 - Value
Units: n/a	Processing Rules: Input field

Definition:

Enter the amount of the units specified in column 55 which the project aims to achieve.

Table E column definitions:

Section 1 - General project information:

Column No: 1	Column Title: Project Autocode
Units: n/a	Processing Rules: Input field

Definition:

This is the project code allocated to the project within the Scottish Water investment programme database. All codes should be mutually exclusive and relate to discreet projects. All projects that have been disaggregated from other projects or schemes should have an audit trail that may, from time to time, be scrutinised by the Reporter.

Any projects contained in the *Quality and Standards II* project list and also (for whatever reason) in the list of projects for *Quality & Standards III* must have the same project autocode in both submissions. *Quality and Standards II* projects must contain the same autocode as used in the WIC18 and Capital Investment Return submissions.

Column No: 2	Column Title: Project Title
Units: n/a	Processing Rules: Input field

Definition:

This is the project title used in the Scottish Water investment programme database. The project title should be mutually exclusive of all others in Tables C and E and should indicate the scope of work being undertaken. Any projects contained in the *Quality & Standards II* project list and also (for whatever reason) in

the list of projects for *Quality & Standards III* must have the same project title in both submissions. *Quality and Standards II* projects must contain the same title as used in the WIC18 and Capital Investment Returns. The project title, wherever possible, should give some indication of the type of works to be undertaken as part of the project.

Column No: 3	Column Title: Water or Wastewater project (primary purpose)
Units: n/a	Processing Rules: Input field

Definition:

One of the primary purposes: 'water' or 'wastewater', should be entered to indicate whether the project falls under the water or wastewater function. Any cross-functional work will need to be split into: water *and* wastewater projects.

Column No: 4	Column Title: Project Classification 1
Units:	Processing Rules: Input field

Definition:

Enter only *one* of the following secondary purposes:

- capital maintenance
- quality
- supply/demand
- enhanced service.

For any combined projects, the dominant purpose should be entered.

Column No: 5	Column Title: Project Classification 2
Units: n/a	Processing Rules: Input field

Definition:

Enter one of the following secondary classifications, only if the project is estimated to total £100,000 total or less.

- Infra – IRE
- Infra – Non-IRE
- Non-infra.

For projects totalling more than £100,000 this cell should be left blank and the total project cost proportionately allocated by value across columns 6 (Infra – IRE), 7 (Infra – Non-IRE) and 8 (Non-infra).

Note: Infra, Non-infra, IRE and Non-IRE are defined in WICS Regulatory Accounting Rules 1.

Column No: 6	Column Title: Infra – IRE Proportion of Projects over £100k
Units: £m to 3 dp	Processing Rules: Input field

Definition:

For projects estimated to total more than £100,000, enter the proportion of the total cost attributable to Infra-IRE.

Note: Infra-IRE is defined in WICS Regulatory Accounting Rules 1.

Column No: 7	Column Title: Infra – Non-IRE Proportion of Projects over £100k
Units: £m to 3 dp	Processing Rules: Input field

Definition:

For projects estimated to total more than £100,000, enter the proportion of the total cost attributable to Infra Non-IRE.

Note: Infra Non-IRE is defined in WICS Regulatory Accounting Rules 1.

Column No: 8	Column Title: Non - Infra Proportion of Projects over £100k
Units: £m to 3 dp	Processing Rules: Input field

Definition:

For projects estimated to total more than £100,000, enter the proportion of the total cost attributable to Non-Infra.

Note: Non-Infra is defined in WICS Regulatory Accounting Rules 1.

Column No: 9	Column Title: WIC 18 Budget
Units: £m to 3 dp	Processing Rules: Input field

Definition:

This should be the budget ascribed to the project in the agreed WIC18 baseline list of projects. This should **not**

be subject to any rebasing and should therefore be as given in the agreed WIC18 baseline.

Column No: 10	Column Title: Current Project Status Code
Units: n/a	Processing Rules: Input field

Definition:

Enter one of the following WICS codes S0 to S11 to indicate the current project progress status. The equivalent Scottish Water capital expenditure approval stages are included for clarity.

WICS code	Definition	Scottish Water capital expenditure status
S0	Investment need recognised, but no specific project yet identified	
S1	Inception: project has been identified but no detailed appraisal has been completed	Capex 1 approval
S2	Appraisal: initial detailed appraisal has been completed	Capex 2 approval
S3	Project appraised and under development before construction	Capex 3 approval
S4	Planning approved	
S5	SEPA consent granted	
S8	Works under construction	
S10	Beneficial use achieved	Capex 5 approval
S11	Works and expenditure complete – project closed	

Column No: 11	Column Title: Forecast / Actual – Project CAPEX Approval (s3) Date
Units: mmm-yyyy	Processing Rules: Input field

Definition:

Enter the month and year at which it is forecast that the project will reach WICS project status code s3. This is the equivalent of Scottish Water's Capex 3 approval. For those programmes of work being reported as aggregated lines, leave cell blank.

Column No: 12	Column Title: Forecast / Actual – Project, Construction Start Date
Units: mmm-yyyy	Processing Rules: Input field

Definition:

Enter the month and year at which it is forecast that physical construction on the project site will start. For those programmes of work being reported as aggregated lines, leave cell blank.

Column No: 13	Column Title: Forecast / Actual – Project, Beneficial Use Date
Units: mmm-yyyy	Processing Rules: Input field

Definition:

Enter the month and year (eg mar-2008) that the project is either forecast to, or has actually achieved, beneficial use (ie project status S10).

‘Beneficial use’ means that the specified outputs of the project are available, and customers (or the environment) are able to enjoy the full benefit of the investment. In many cases beneficial use will occur some time before works and expenditure are complete and the project is closed (ie project status S11).

Column No: 14	Column Title: Project Location – Local Authority
Units: n/a	Processing Rules: Input field

Definition:

Enter the name of a single local authority within which the majority of the works are located. This information relates to the physical location of the works, **not** the location of the population served.

Section 2 - Project capital cost information:

Column No: 15	Column Title: Total Q&S II Project Cost (2002/03-2005/06 inc)
Units: £m to 3dp	Processing Rules: Input field

Definition:

This is the total cost incurred by the project over the *Quality & Standards II* period 2002-03 to 2005-06 (inclusive).

Column No: 16	Column Title: Total Expenditure pre 2006/07
Units: £m to 3 dp	Processing Rules: Input field.

Definition:

This is the total of **any** costs incurred by an individual project prior to the start of the *Quality and Standards II* investment period (ie up to and including 31 March 2006).

Column No: 17	Column Title: Project Expenditure Profile 2006/07
Units: £m to 3 dp	Processing Rules: Input field

Definition:

Forecast project expenditure during 2006-07

Column No: 18	Column Title: Project Expenditure Profile 2007/08
Units: £m to 3 dp	Processing Rules: Input field

Definition:

Forecast project expenditure during 2007-08.

Column No: 19	Column Title: Project Expenditure Profile 2008/09
Units: £m to 3 dp	Processing Rules: Input field

Definition:

Forecast project expenditure during 2008-09.

Column No: 20	Column Title: Project Expenditure Profile 2009/10
Units: £m to 3 dp	Processing Rules: Input field

Definition:

Forecast project expenditure during 2009-10.

Column No: 21	Column Title: Project Expenditure Profile 2010/11
Units: £m to 3 dp	Processing Rules: Input field

Definition:

Forecast project expenditure during 2010-11.

Column No: 22	Column Title: Project Expenditure Profile 2011/12
Units: £m to 3 dp	Processing Rules: Input field

Definition:

Forecast project expenditure during 2011-12.

Column No: 23	Column Title: Project Expenditure Profile 2012/13
Units: £m to 3 dp	Processing Rules: Input field

Definition:

Forecast project expenditure during 2012-13.

Column No: 24	Column Title: Project Expenditure Profile 2013/14
Units: £m to 3 dp	Processing Rules: Input field

Definition:

Forecast project expenditure during 2013-14.

Column No: 25	Column Title: Project expenditure post 2013/14
Units: £m to 3 dp	Processing Rules: Input field

Definition:

Any forecast expenditure on an individual project after the *Quality and Standards III* period ends on 31 March 2014.

Column No: 26	Column Title: Total Project Cost
Units: £m to 3 dp	Processing Rules: Calculated field. The sum of columns 14 to 23 inclusive.

Definition:

This is the total cost of the project, irrespective of when the expenditure is incurred.

Section 3 - Project asset base valuation and operating expenditure information:

Column No: 27	Column Title: Impact of Project on Scottish Water's GEARC (Gross Equivalent Asset Replacement Cost)
Units: £m to 3dp	Processing Rules: Input field

Definition:

This is the forecast project impact on Scottish Water's total asset base valuation. This should be measured by the impact that the individual project will have on the Gross Equivalent Asset Replacement Cost (GEARC) of the total asset base.

This information will enable this Office to monitor changes made within the asset inventory and reconcile these to the developments in the investment programme as the period moves forward.

Column No: 28	Column Title: Impact of Project on OPEX
Units: £ per annum	Processing Rules: Input field

Definition:

This is the estimated impact that the project will have on average annual operating expenditure. This figure should be the net change in costs arising from new and improved assets, taking account of any savings. Operating expenditure cost savings may result from the operation of new/improved assets.

Section 4 – Capital maintenance information:

Column No: 29	Column Title: Proportion of Capital Maintenance Element of Project - £m
Units: £m to 3 dp	Processing Rules: Input field

Definition:

This is the proportion of the individual project cost that is ascribed to a capital maintenance driver. The proportion should be expressed financially as £m.

Column No: 30	Column Title: Proportion of Capital Maintenance Element of Project - %
Units: Percentage	Processing Rules: Input field

Definition:

This is the proportion of the individual project cost that is ascribed to a capital maintenance driver. The proportion should be expressed as a percentage of the total project budget in column 26.

Section 5 – Project driver information:

This section (columns 29 to 38 inclusive) requires drivers (after capital maintenance) to be proportionally allocated to individual projects. Where possible, drivers specified by stakeholders as part of the *Quality & Standards III* process have been used. Appendix A to these definitions contains lists of drivers and the codes that are to be used. These are the drivers upon which *Quality & Standards III* investment proposals were based (apart from capital maintenance), and only drivers contained in the lists should be used.

Column No: 31	Column Title: Primary Driver After Capital Maintenance
Units: n/a	Processing Rules: Input field

Definition:

Enter most relevant single driver code from those listed in Appendix A to these definitions.

Column No: 32	Column Title: Primary Driver % Allocation
Units: Percentage	Processing Rules: Input field

Definition:

Enter the percentage of project total value that is attributable to the primary driver in column 31.

Column No: 33	Column Title: Driver 2
Units: n/a	Processing Rules: Input field

Definition:

Enter the most relevant single driver code from those listed in Appendix A to these definitions.

Column No: 34	Column Title: Driver 2 - Percentage Allocation
Units: Percentage	Processing Rules: Input field

Definition:

Enter the percentage of project total value that is attributable to driver 2, in column 33.

Column No: 35	Column Title: Driver 3
Units: n/a	Processing Rules: Input field

Definition:

Enter the most relevant single driver code from those listed in Appendix A to these definitions.

Column No: 36	Column Title: Driver 3 Percentage Allocation
Units: Percentage	Processing Rules: Input field

Definition:

Enter the percentage of project total value that is attributable to the driver 3, in column 35.

Column No: 37	Column Title: Driver 4
Units: n/a	Processing Rules: Input field

Definition:

Enter the most relevant single driver code from those listed in Appendix A to these definitions.

Column No: 38	Column Title: Driver 4 Percentage Allocation
Units: Percentage	Processing Rules: Input field

Definition:

Enter the percentage of project total value that is attributable to driver 4, in column 37.

Column No: 39	Column Title: Driver 5
Units: n/a	Processing Rules: Input field

Definition:

Enter the most relevant single driver code from those listed in Appendix A to these definitions.

Column No: 40	Column Title: Driver 5 Percentage Allocation
Units: Percentage	Processing Rules: Input field

Definition:

Enter the percentage of project total value that is attributable to driver 5 in column 39.

Section 6 – Project output information:

This section (cols 39 to 53 inclusive) requires output information for individual projects. For simplicity, outputs have been assigned to the set of driver codes employed

above (as detailed in Appendix A). For each project line in the programme, the primary output should be identified and apportioned where appropriate over a maximum of four other outputs. Lists of output classifications are contained in Appendix B to this guidance. Only outputs contained in Appendix B should be used.

Column No: 41	Column Title: Primary Output Reference Code
Units: n/a	Processing Rules: Input field

Definition:

Enter a relevant driver code reference from Appendix B.

Column No: 42	Column Title: Primary Output Units
Units: as applicable	Processing Rules: Input field

Definition:

Enter the output units (from Appendix B) that correspond with the reference code in column 41.

Column No: 43	Column Title: Primary Output Value
Units: n/a	Processing Rules: Input field

Definition:

Enter the amount of the units specified in column 42 which the project aims to achieve.

Column No: 44	Column Title: Output 2 - Reference Code
Units: n/a	Processing Rules: Input field

Definition:

Enter a relevant driver code reference from Appendix B.

Column No: 45	Column Title: Output 2 - Units
Units: as applicable	Processing Rules: Input field

Definition:

Enter the output units (from Appendix B) that correspond with the reference code in column 44.

Column No: 46	Column Title: Output 2 - Value
Units: n/a	Processing Rules: Input field

Definition:

Enter the amount of the units specified in column 45 which the project aims to achieve.

Column No: 47	Column Title: Output 3 - Reference Code
Units: n/a	Processing Rules: Input field

Definition:

Enter a relevant driver code reference from Appendix B.

Column No: 48	Column Title: Output 3 - Units
Units: as applicable	Processing Rules: Input field

Definition:

Enter the output units (from Appendix B) that correspond with the reference code in column 47.

Column No: 49	Column Title: Output 3 - Value
Units: n/a	Processing Rules: Input field

Definition:

Enter the amount of the units specified in column 48 which the project aims to achieve.

Column No: 50	Column Title: Output 4 - Reference Code
Units: n/a	Processing Rules: Input field

Definition:

Enter a relevant driver code reference from Appendix B.

Column No: 51	Column Title: Output 4 - Units
Units: as applicable	Processing Rules: Input field

Definition:

Enter the output units (from Appendix B) that correspond with the reference code in column 50.

Column No: 52	Column Title: Output 4 - Value
Units: n/a	Processing Rules: Input field

Definition:

Enter the amount of the units specified in column 51 which the project aims to achieve.

Column No: 53	Column Title: Output 5 - Reference Code
Units: n/a	Processing Rules: Input field

Definition:

Enter a relevant driver code reference from Appendix B.

Column No: 54	Column Title: Output 5 - Units
Units: as applicable	Processing Rules: Input field

Definition:

Enter the output units (from Appendix B) that correspond with the reference code in column 53.

Column No: 55	Column Title: Output 5 - Value
Units: n/a	Processing Rules: Input field

Definition:

Enter the amount of the units specified in column 54 which the project aims to achieve.

Project driver codes

1 - Capital maintenance drivers

Driver code		Summary of requirements
WSI	Water Service Infrastructure	Maintain operational capability and performance of the asset as designed so that it achieves its original purpose.
WSNI	Water Service Non-Infrastructure	Maintain operational capability and performance of the asset as designed so that it achieves its original purpose.
WWI	Wastewater Service Infrastructure	Maintain operational capability and performance of the asset as designed so that it achieves its original purpose.
WWNI	Wastewater Service Non-Infrastructure	Maintain operational capability and performance of the asset as designed so that it achieves its original purpose.

2 – Drinking water quality drivers

Driver code	Summary of requirements	Date of compliance
DW1	Compliance with lead standard of 10mg/l set in EC Directive 98/83 on the quality of water intended for human consumption.	2013
DW2	Compliance with trihalomethane standard of 100mg/l.	2008
DW3	Compliance with all other standards contained in the Drinking Water Directive, including those below that may have been tightened under Directive 98/83/EC. Arsenic: tighter standard introduced which may result in local breaches. Bromate: tighter standard introduced which may result in local breaches. Copper: tighter standard introduced which may result in local breaches. pH: tighter standard introduced which may result in local breaches. Nitrate/Nitrite: the introduction of chloramination to meet the THM standard is likely to result in exceedences of the standard for nitrate/nitrite.	2013
DW4	Compliance with the Cryptosporidium (Scottish Water) Directions 2003 and any subsequent revisions including: i) annual risk assessments for all water supplies for the presence of Cryptosporidium; ii) installation of turbidity meters on all filters; iii) continuous monitoring of specific water supplies for Cryptosporidium.	
DW5	The quality of water put into supply must not be downgraded by the condition of the water mains through which it is supplied. In particular, the condition of a water main must not result in exceedences of the iron and manganese standards set in Directive 98/83/EC. Unplanned operational activity and maintenance work disrupt the flow in water mains and put water quality at risk.	2013

continued:

Driver code	Summary of requirements	Date of compliance
	Scottish Executive policy is that there should be no deterioration in the infrastructure asset stock.	
DW6	The Abstraction Directive	
DW7	The Birds Directive/The Habitats Directive	
DW8	Security of Supply	
DW9	Additional physical security arrangements to protect drinking water quality in accordance with guidance issued by Security Services.	
DW10	All public water supplies to meet standards set in Directive. Supplies to properties from raw water aqueducts and raw water mains are public supplies and must meet Directive standards.	
DW11	Investment necessary on Scottish Water assets to ensure Scottish Water compliance with Water Fittings Byelaws. (Note that this driver does not include the cost of ensuring third party Byelaw compliance.)	
DW12	Article 11 of the EC Directive 98/83 provides for a review of the annexes to the Directive every five years. The first such review commenced during 2003. There are strong indications that the standards for THMs, disinfection by-products will tighten.	2013
DW13	Improvements in aesthetic quality of drinking water.	
DW14	Extend provision of telemetry at water treatment works and service reservoirs.	
DW15	Compliance with recommendations made as a result of investigations into drinking water quality incidents in Scotland.	
DW16	Standards in the EC Directives are derived from World Health Organisation (WHO) Guideline Values. The WHO is now promoting Water Safety Plans as a means of ensuring drinking water quality. Such plans are already in use in many countries. It is likely that Water Safety Plans will feature in any revision of the Directive.	
DW17	The report into the Torry incident 1991 recommended removal of all cross-connections between water mains and sewers. However, this recommendation was not fully implemented across Scotland and many unsatisfactory arrangements remain. The risk posed by cross-connections is significant and any such arrangements remaining must be removed.	
DW18	Extend public water distribution network at "unreasonable cost" to provide a water supply to these areas because the level of return is not considered economic in relation to the capital investment required.	
DW19	The Water (Scotland) Act 1980 requires that Scottish Water shall provide a wholesome supply of water sufficient for the domestic purposes of all owners and occupiers of premises within their limit of supply.	
DW20	The Flood Estimation Handbook published by the Institute of Hydrology introduced a new method of calculating rainfall depth.	
DW21	Duplication of critical mains to provide security of supply.	
DW22	Provide treatment to address algae problems in raw water sources.	
WR1	UKTAG guideline abstraction thresholds (all Scottish Water surface and groundwater abstractions).	
WR2	Will require a site-specific review of operational practice at all Scottish Water reservoirs to compare with agreed best practice (all Scottish Water impoundments).	
WR3	Protect water quality in Drinking Water Protected Areas so as to avoid the need to increase the level of treatment needed to meet standards set in EC Directive 98/83 (all Scottish Water drinking water sources supplying more than 10m3/day or 50 people).	2013
WR4	Compliance with hydro-morphological standards in order to meet WFD ecological objective (all obsolete engineering works associated with abandoned water supply operations.)	
WR5	To demonstrate compliance with water quality licences (all Scottish Water abstractions and impoundments).	

3 – Environmental drivers

Driver code	UK Act/EC Directive
WQ01	Water Environment and Water Services Act 2002 (secondary legislation to replace Control of Pollution Act 1974, Section 34)
WQ02	Environment Act 1995, Section 34
ON01	Town and Country Planning (Scotland) Act 1997
ON02	Environment Protection Act 1990, Part III
LA01	Environmental Protection Act 1990, Part IIA (Contaminated Land)
NH01	Water Industry (Scotland) Act 2002, Section 54
SD01	Water Industry (Scotland) Act 2002, Section 51
WA01	Definition of Waste (Hazardous Waste Directive)
EC01	Urban Waste Water Treatment Directive (91/271/EEC)
EC02	Bathing Water Directive (76/160/EEC)
EC03	Shellfish Waters Directive (70/923/EEC)
EC04	Freshwater for Fish Directive (78/659/EEC)
EC05	Surface Water for Drinking Directive (75/440/EEC)
EC06	Sludge Use in Agriculture Directive (86/278/EEC)
EC07	Birds Directive (79/409/EEC)
EC08	Habitats Directive (92/43/EEC)
EC09	Dangerous Substances Directive (76/464/EEC)
EC10	Water Framework Directive (2000/60/EC)
EC11	Landfill Directive (99/31/EC)
EC12	Integrated Pollution Prevention & Control Directive (96/61/EC)
EC13	Waste Incineration Directive (2000/76/EC)
EC14	National Emissions Ceiling Directive (2001/81/EC)
EC15	Strategic Environmental Assessment Directive (2001/42/EC)
pEC16	Revised Bathing Water Directive (proposed)
pEC17	EU Marine Strategy (proposed COM/2002/539)
pEC18	Sludge Directive (proposed) & EC Soils Strategy
pEC20	Environmental Liability Directive (proposed)
IN01	OSPAR Convention 1992
XF01	Climate Change (Cross-functional)
XF02	Flooding (Cross-functional)

4 – Customer service drivers

Driver code	Driver description
CS1	Pressure. Removal of properties from the register of properties at risk from poor pressure.
CS2	Odour Management. Compliance with odour management standards.
CS4	Business Metering. Compliance with business metering standards.
CS5	Household Metering. Compliance with household metering standards.
CS6	Emergency Planning. Provision of improved emergency planning standards.
CS7	Business Billing. Provision of improved business billing facilities.
CS8	Household Billing. Provision of improved household billing services.
CS9	Customer Experience. Provision of improved customer service facilities.
CS11	Sewer Flooding. Removal of properties from at risk register.

Output measures and units

1 - Capital maintenance outputs

Driver code	Description of output	Output unit
WSI	Length of infrastructure relined/replaced	Km
WSNI	Throughput of works subject to maintenance	MI/day
WWI	Length of infrastructure relined/replaced	Km
WWNI	Population equivalent of works subject to maintenance work	Number
SS	GEARC of assets subject to maintenance work	£

2 – Drinking water quality outputs

Driver code	Description of output	Output unit
DW1	Volume of water delivered to customers made compliant with the required standard	Megalitres/day
DW2	Volume of water delivered to customers made compliant with the required standard	Megalitres/day
DW3	Volume of water delivered to customers made compliant with the required standard	Megalitres/day
DW4	Volume of water delivered to customers made compliant with the required standard	Megalitres/day
DW5	Volume of water delivered to customers made compliant with the required standard	Megalitres/day
DW6	Number of sites made compliant with standard	Number
DW7	Number of sites made compliant with standard	Number
DW8	Number of sites made compliant with standard	Number
DW9	Number of sites made compliant with standard	Number
DW10	Volume of water delivered to customers made compliant with the required standard	Megalitres/day
DW11	Number of sites made compliant with standard	Number
DW12	Volume of water delivered to customers made compliant with the required standard	Megalitres/day
DW13	Volume of water delivered to customers made compliant with the required standard	Megalitres/day
DW14	Number of sites made compliant with standard	Number
DW15	Number of sites made compliant with standard	Number
DW16	Number of sites made compliant with standard	Number
DW17	Number of sites made compliant with standard	Number
DW18	Population equivalent benefiting from work	Population Equivalent
DW19	Population equivalent benefiting from work	Population Equivalent
DW20	Number of sites made compliant with standard	Number
DW21	Km of critical mains duplicated	Km
DW22	Number of sites made compliant with standard	Number
WR1	Number of sites made compliant with standard	Number
WR2	Number of sites made compliant with standard	Number
WR3	Number of sites made compliant with standard	Number
WR4	Number of sites made compliant with standard	Number
WR5	Number of sites made compliant with standard	Number

3 – Environmental outputs

Driver code	Description of output	Output unit
WQ01	Population equivalent benefiting from work	Population equivalent
WQ02	Population equivalent benefiting from work	Population equivalent
ON01	Number of sites made compliant with standard	Number
ON02	Number of sites made compliant with standard	Number
LA01	Number of sites made compliant with standard	Number
NH01	Number of sites made compliant with standard	Number
SD01	Number of sites made compliant with standard	Number
WA01	Number of sites made compliant with standard	Number
EC01	Population equivalent benefiting from work	Population equivalent
EC02	Population equivalent benefiting from work	Population equivalent
EC03	Population equivalent benefiting from work	Population equivalent
EC04	Population equivalent benefiting from work	Population equivalent
EC05	Number of sites made compliant with standard	Number
EC06	Population equivalent benefiting from work	Population equivalent
EC07	Population equivalent benefiting from work	Population equivalent
EC08	Population equivalent benefiting from work	Population equivalent
EC09	Number of sites made compliant with standard	Number
EC10	Population equivalent benefiting from work	Population equivalent
EC11	Population equivalent benefiting from work	Population equivalent
EC12	Number of sites made compliant with standard	Number
EC13	Population equivalent benefiting from work	Population equivalent
EC14	Population equivalent benefiting from work	Population equivalent
EC15	Number of sites made compliant with standard	Number
pEC16	Population equivalent benefiting from work	Population equivalent
pEC17	Population equivalent benefiting from work	Population equivalent
pEC18	Population equivalent benefiting from work	Population equivalent
pEC20	Number of sites made compliant with standard	Number
IN01	Number of sites made compliant with standard	Number
XF01	Number of sites made compliant with standard	Number
XF02	Number of sites made compliant with standard	Number

4 – Customer service outputs

Driver code	Description of output	Output unit
CS1	Removal of properties from the register of properties at risk from poor pressure.	Number of properties
CS2	Number of waste water treatment works made compliant with odour management standards.	Number of works
CS4	Number of meters made compliant with business metering standards.	Number of meters
CS5	Number of meters made compliant with household metering standards.	Number of meters
CS6	Customers subject to improved emergency planning standards.	Number of customers
CS7	Businesses subject to improved billing facilities.	Number of businesses
CS8	Households subject to improved billing services.	Number of households
CS9	Customers subject to improved customer service facilities.	Number of customers
CS11	Sewer flooding. Removal of properties from at risk register.	Number of properties

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December 2004

Our work in regulating the Scottish water industry:

A summary of our proposed approach

volume **6**

**WATER INDUSTRY
COMMISSIONER
FOR SCOTLAND**

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January 2005

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Chapter 1

Setting out a clear framework for the Strategic Review of Charges 2006-10

Introduction

This document sets out our forward work programme over the period from now through to 1 April 2006, when the next regulatory period begins.

Regulation seeks to ensure that customers enjoy a value for money service. Customers should be able to count on a supply of high-quality, wholesome drinking water, continuing improvement in our beaches and water environment, and a service that is provided at a reasonable cost. It is the job of the regulator to ensure that customers enjoy a 'silent' service, that is one they can take for granted.

Customers will rightly expect that we build on the progress of the last two years since the last Strategic Review of Charges. This will require effective monitoring of Scottish Water's performance in the remainder of the current regulatory period. We will also need to ensure that prices are sufficient, but no more than sufficient, to fund the levels of service and investment that will result from the *Quality and Standards III* investment programme.

This second full Strategic Review of Charges was commissioned in good time. We are keen to take advantage of the time we have to make sure that the current Strategic Review is as transparent as possible. This detailed explanation of our work-plan is the first in a series of publications that will describe what, when, how and why we will do certain tasks. All of these efforts are designed to ensure that customers can have confidence that they are getting value for money.

We would welcome the views of customers and other stakeholders on this and our other methodology publications. These should be sent to:

Katherine Russell
The Water Industry Commissioner for Scotland,
Ochil House
Springkerse Business Park
Stirling
FK7 7XE

or by email to

SRMethodology@watercommissioner.co.uk

We plan to publish five documents about our proposed methodology for the Strategic Review of Charges 2006-10.

The first four of these publications outline how we intend to prepare the 2006-10 Strategic Review of Charges. The four areas covered are:

- our work-plan (this document),
- the regulatory framework in Scotland and lessons learned,
- the calculation of prices,
- the scope for efficiency.

The fifth document is a summary of the first four.

We welcome comments from stakeholders about the content of these publications. The final date for comments is **29 October 2004**.

Regulatory information

Information is vital to effective regulation. We ask Scottish Water for a wide range of information, covering all aspects of its water and waste water businesses. This information allows us to monitor and report on Scottish Water's performance. We continually re-assess these information requirements.

Our key information requests are set out in the table overleaf.

Submission		Frequency of submission	Team that receives the submission
WIC 1/9/14/22	Non-domestic customer revenue information	Twice yearly	Revenue and Tariffs
WIC 4	Domestic customer revenue information	Twice yearly	Revenue and Tariffs
WIC 5	Customer service performance return	Quarterly	Competition and Customer Services
WIC 6	Quality performance assessments (written)	Quarterly	Competition and Customer Services
WIC 18	Quality & Standards final output	Ad-hoc	Investment and Asset Management
Q & S III	Baseline investment programme for Quality and Standards III	Ad-hoc	Investment and Asset Management
WIC 19	Investment appraisal audits	Annually	Investment and Asset Management
WIC 24	Leakage strategy	Annually	Investment and Asset Management
WIC 25	Resource accounting and budgeting (RAB)	Monthly	Costs and Performance
WIC 43	Annual Return 2003-04	Annually	Office-wide
WIC 45	Regulatory accounting (and transfer pricing)	Ad-hoc in 2004-05, but annually from 2005-06 onwards	Costs and Performance
Scheme of Charges	Scottish Water Scheme of Charges submission	Annually	Revenue and Tariffs
CIR	Capital Investment Return	Quarterly	Investment and Asset Management
SBP	Strategic Business Plan	Ad-hoc	Costs and Performance

In England and Wales it is water industry practice for the Office of Water Services (Ofwat) to use a consultant engineer, known as a Reporter, to help verify information submissions. The Reporter audits the information provided to the regulator by the companies and highlights any issues or inaccuracies.

Following discussions involving the Scottish Executive, this Office and Scottish Water, we appointed a Reporter for the water industry in Scotland in December 2003. We expect that this will improve the regulatory process and the reliability of regulatory submissions in Scotland.

The Reporter is Mr David Arnell of Black and Veatch Consulting. He is required to review all aspects of Scottish Water's information submissions, as directed by this Office. This will include auditing both the annual

regulatory return submitted by Scottish Water and its Business Plan submissions, and scrutinising the costing, scope and content of the proposed investment programme. Such scrutiny has played an important role in improving the quality and reliability of information provided to Ofwat by the companies in England and Wales.

The Reporter will remain strictly independent of Scottish Water.

As well as this Office, the Scottish Executive, the Drinking Water Quality Regulator (DWQR) and the Scottish Environment Protection Agency (SEPA) can ask the Reporter to examine Scottish Water's performance in areas relevant to their statutory duties.

We believe that the introduction of a Reporter will give customers greater confidence that the efficiency targets we set for Scottish Water are realistic.

This audited information will inform our work in assessing the scope for efficiency and the sustainable level of prices. As such, it is critical to the Strategic Review of Charges. Decisions about the prices that will be paid by customers from April 2006 will still not be made for some 18 months. There is a considerable amount of information collection, checking and analysis to be undertaken before we can finalise prices.

Ensuring transparency and accountability

We are providing stakeholders with a number of opportunities to make their views known both to us and to the Scottish Executive over the next 18 months. The Scottish Executive will seek the views of stakeholders through two important consultations: 'Paying for Water Services' and 'Investing in Water Services'. These consultations will help Ministers to formulate the detailed Guidance that they are due to provide to this Office in January 2005.

The work-plan for the Strategic Review of Charges also highlights a number of initiatives designed to improve the transparency and accountability of regulation. We

have introduced 'stakeholder information days', which will be held approximately every six weeks. These days will provide a forum for us to outline our progress and for stakeholders to have their say. A summary of these meetings will be made available on our website. Similarly, we are offering a series of three separate briefings to members of the Scottish Parliament.

A staged approach

In order to ensure that stakeholders are able to gain as much as possible from the Strategic Review, and to help manage the process, we have included a number of interim announcements in the work-plan. We have also set a series of dates by which we will have made some of our analytical tools available to stakeholders.

One of the key tools is the financial model. In common with other regulators, we will use a financial model to calculate the revenue that will be required from customers. This financial model allows different cost, investment and timing scenarios to be assessed so that we can be sure that the option that represents best value for money for customers is chosen. The financial model has been conceived and developed using in-house resources and will be subject to an extensive external audit. This audit will review both the workings of the model and internal processes, such as version control, during the preparation of the Strategic Review of Charges.

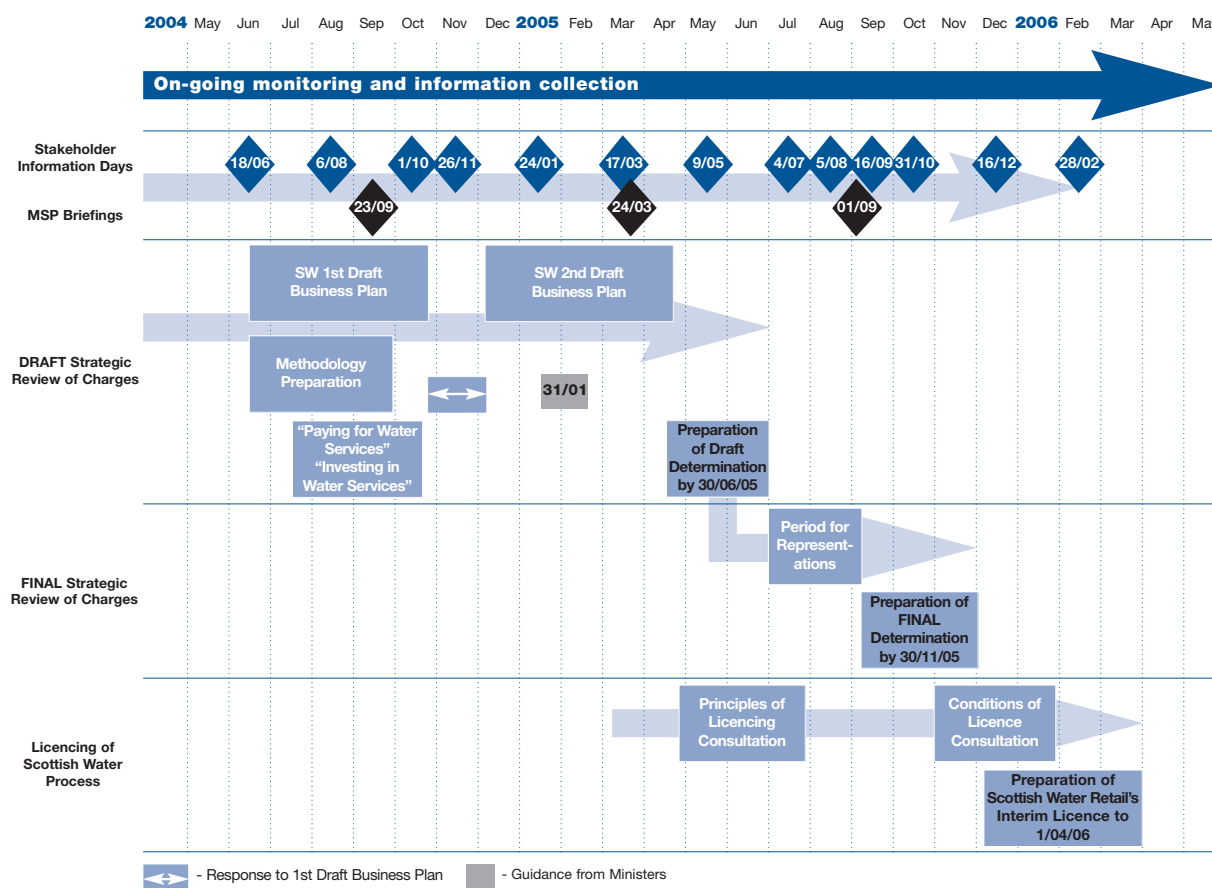
The financial model is constructed using Microsoft Excel¹. It will be made available on our website by the end of September 2004.

The detailed work-plan is reproduced below. Stakeholders should be aware of the following 11 key events in this work-plan:

- Minister's commissioning letter for the 2006-10 Strategic Review of Charges
- Scottish Water submits its Annual Return for 2003-04

- *Quality and Standards III* Consultation
- *Principles of Charges* Consultation
- Scottish Water's first draft Business Plan
- Ministerial Guidance
- Scottish Water's second draft Business Plan
- Scottish Water submits its Annual Return for 2004-05
- Water Industry Commissioner for Scotland draft advice on/determination of charges
- Opportunity for representations by stakeholders
- WICS' final advice on/determination of charges

¹ Stakeholders who wish to download the model will require a licensed copy of Microsoft Excel®.

Figure 1: The calendar of events for the next two years

Minister's commissioning letter for the 2006-10 Strategic Review of Charges

Ross Finnie, Minister for the Environment and Rural Affairs, asked us to begin work on the Strategic Review of Charges. This letter set out initial policy considerations and detailed proposed changes to the regulatory framework.

Scottish Water submits its Annual Return for 2003-04

The Annual Return is the principal information submission that Scottish Water makes to us. The return includes information about customers, assets and financial performance. It also covers progress on the agreed investment programme.

This Annual Return will underpin the draft advice on/or determination of charges.

Quality and Standards III Consultation

The Scottish Executive has coordinated a multi-stakeholder process to determine the objectives of the investment programme for the period 2006-14. This consultation is one of the main opportunities for stakeholders to make the Scottish Executive aware of their views. Following consultation, we expect Ministers to decide on investment priorities for the next regulatory period in January 2005.

Principles of Charges Consultation

This important Scottish Executive consultation will establish how customers should pay for water services. This should inform the Ministerial Guidance in January 2005.

Scottish Water's first draft Business Plan

This first draft Business Plan is due at the end of October this year. We provided Scottish Water with detailed guidance on the requirements for the Business Plan at the end of June. This is an important opportunity for Scottish Water to set out its strategy in some detail. We would expect Scottish Water to highlight any factors that it believes we should take into account in setting efficiency targets or prices.

This plan should also contain Scottish Water's view of an appropriate investment plan for the next regulatory period. This should take account of Scottish Water's knowledge of the Quality and Standards III process, any likely backlog from Quality and Standards II, and its views on the size of a programme that can be efficiently managed.

Ministerial Guidance

Detailed Guidance is due to be given by Ministers at the end of January 2005. This will help inform the draft Strategic Review of Charges in June 2005. It is expected that this Guidance will outline the priorities for investment in the next regulatory period and will detail the principles that should be applied in setting tariffs for customers. This Guidance will also cover issues such as public expenditure and new debt.

Scottish Water's second draft Business Plan

The second draft Business Plan is Scottish Water's final opportunity to communicate its strategy, objectives and resource requirements to this Office. This plan should reflect the Ministerial Guidance that will have been provided at the end of January 2005. The plan should also contain a detailed investment programme that will meet the priorities that were set out in the Guidance. This investment plan will be published in full.

Scottish Water submits its Annual Return for 2004-05

This Annual Return is particularly important as it will inform the final price limits in the Strategic Review of Charges.

WICS' draft advice on/determination of charges

The draft Strategic Review of Charges will be published at the end of June 2005. This document outlines our initial proposals for Scottish Water's price limits for the 2006-10 regulatory period.

Opportunity for representations by stakeholders

Following publication of the draft Strategic Review of Charges, there is a two-month period in which customers and stakeholders can make representations on the initial proposals. During this period, final advice from Ministers to inform the final Strategic Review of Charges is expected.

WICS' final advice on/determination of charges

The final Strategic Review of Charges will be published on 30 November 2005. This will contain our detailed advice to Ministers on the revenue requirements and charging levels for Scottish Water for the period 2006-10. It will explain in detail the processes we have gone through in establishing the revenue cap.

Under current arrangements, the Scottish Ministers are then responsible for taking due account of this advice in deciding the level of funding and the associated charges for Scottish Water. The Ministers' response to our advice is placed in the public domain. The proposals contained in the Water Services etc (Scotland) Bill, (which are discussed in more detail in Chapter 5.10 below), would empower the Water Industry Commission to decide on price limits for Scottish Water, subject to appeal to the UK Competition Commission.

Summary work plan for May 2004–May 2006

Reference	Event	Date
May 2004		
1.1	WIC 5: Customer service performance return (Quarter 4 – 2003-04)	07/05/2004
1.2	WIC 1/9/14/22: Non-domestic customer revenue information (Quarter 4 – 2003-04)	14/05/2004
1.3	WIC 4: Domestic customer revenue information (Quarter 4 – 2003-04)	14/05/2004
1.4	Presentation by Scottish Water of cost allocation system to Reporter	14/05/2004
1.5	WIC 6: Quality performance assessments (written) (Quarter 4 – 2003-04) – Scottish Water provides complaints files	24/05/2004
1.6	WIC 45: Issue of draft regulatory accounting tables (2003-04)	27/05/2004
1.7	WIC 25: RAB (resource accounting and budgeting) submission for April 2004	28/05/2004
June 2004		
2.1	Complete draft financial model	09/06/2004
2.2	Award research project on financial ratios and borrowing	09/06/2004
2.3	Workshop for Scottish Executive on methodology	10/06/2004
2.4	Workshop for Scottish Water on methodology	11/06/2004
2.5	Question & Answer session on draft regulatory accounting tables (2003-04)	15/06/2004
2.6	Workshop for academics on methodology	17/06/2004
2.7	Workshop for stakeholders on methodology: 1st stakeholder information day	18/06/2004
2.8	Capital Investment Return: Quarter 4 – 2003-04 submission	18/06/2004
2.9	Write out to workshop attendees on issues raised	24/06/2004
2.10	WIC 43: Annual Return 2003-04 submission	25/06/2004
2.11	Guidance due to Scottish Water on 1st draft Business Plan submission	25/06/2004
2.12	Draft financial model provided to Scottish Water	25/06/2004
2.13	WIC 25: RAB (resource accounting and budgeting) submission for May 2004	28/06/2004
July 2004		
3.1	Scottish Water to submit initial issues regarding guidance on 1st draft Business Plan	05/07/2004
3.2	Scottish Water to submit initial issues regarding methodology	05/07/2004
3.3	Initiate financial ratios & borrowing project	05/07/2004
3.4	Workshop on 1st draft Business Plan guidance	09/07/2004
3.5	Half yearly meeting with Water Customer Consultation Panels (WCCPs)	09/07/2004
3.6	Workshop for Scottish Water on draft financial model	14/07/2004
3.7	Scottish Water final issues regarding guidance for 1st draft Business Plan	16/07/2004
3.8	Scottish Executive Quality and Standards III consultation	20/07/2004
3.9	Scottish Executive Principles of Charging consultation	20/07/2004
3.10	Publication of the work-plan for the Strategic Review of Charges 2006-10	21/07/2004
3.11	Workshop for Scottish Water on methodology for calculation of prices for the Strategic Review	21/07/2004
3.12	Guidance to Reporter on 1st draft Business Plan audit	21/07/2004
3.13	WIC 25: RAB (resource accounting and budgeting) submission for June 2004	28/07/2004
3.14	Workshop for Scottish Water on methodology for assessing the scope for efficiency for the Strategic Review	28/07/2004
3.15	WICS final clarifications/responses on 1st draft Business Plan guidance	28/07/2004
3.16	WIC 43 Annual Return – 1st round of queries: response due from Scottish Water	30/07/2004
August 2004		
4.1	Capital Investment Return: Quarter 1 – 2004-05 submission	01/08/2004
4.2	Stakeholder information day	06/08/2004
4.3	WIC 5: Customer service performance return (Quarter 1 – 2004-05)	13/08/2004
4.4	Publication of framework for the Strategic Review of Charges 2006-10	16/08/2004
4.5	Quarterly meeting with Scottish Executive	18/08/2004
4.6	Scottish Water submits draft regulatory accounting tables (2003-04)	18/08/2004
4.7	Publication of report on financial ratio and borrowing	23/08/2004
4.8	WIC 43 Annual Return – 2nd round of queries: response due from Scottish Water	27/08/2004
4.9	WIC 25: RAB (resource accounting and budgeting) submission for July 2004	27/08/2004
September 2004		
5.1	Scottish Water submits draft investment programme to Reporter for audit	01/09/2004
5.2	Letter outlining initial views on regulatory accounting tables (2003-04)	09/09/2004
5.3	Workshop on completion of regulatory accounting tables (2003-04)	16/09/2004
5.4	Publication of methodology for calculation of prices for the Strategic Review of Charges 2006-10	22/09/2004
5.5	MSP briefing	23/09/2004
5.6	WIC 25: RAB (resource accounting and budgeting) submission for August 2004	25/09/2004
5.7	Scheme of charges – submission due from Scottish Water	27/09/2004
5.8	Publication of methodology for assessing the scope for efficiency for the Strategic Review of Charges 2006-10	29/09/2004
5.9	Publication of summary of methodology for the Strategic Review of Charges 2006-10	29/09/2004
5.10	Publication of draft financial model and draft manual	29/09/2004

Reference	Event	Date
	October 2004	
6.1	Stakeholder information day	01/10/2004
6.2	Asset management process review initiated	01/10/2004
6.3	WIC 25: RAB (resource accounting and budgeting) submission for September 2004	28/10/2004
6.4	Scottish Water submits 1st draft Business Plan	29/10/2004
6.5	Resubmission of regulatory accounts (2003-04) as part of 1st draft Business Plan	29/10/2004
6.6	Baseline investment programme for Quality & Standards III (draft programme)	29/10/2004
6.7	Close of methodology consultations	29/10/2004
	November 2004	
7.1	Capital Investment Return: Quarter 2 – 2004-05 submission	01/11/2004
7.2	WIC 1/9/14/22: Non-domestic customer revenue information (Quarter 2 – 2004-05)	12/11/2004
7.3	WIC 4: Domestic customer revenue information (Quarter 2 – 2004-05)	12/11/2004
7.4	WIC 5: Customer service performance return (Quarter 2 – 2004-05)	12/11/2004
7.5	Workshop on detail of Business Plan (definitional & clarification issues)	15/11/2004
7.6	Revised regulatory accounting and transfer pricing tables (2003-04)	16/11/2004
7.7	Copy of methodology response to Scottish Water & Scottish Executive	17/11/2004
7.8	Methodology response published	19/11/2004
7.9	Reporter's final report on capital programme contained in Scottish Water's draft Business Plan	19/11/2004
7.10	Summary of Reporter's view to Scottish Executive	23/11/2004
7.11	Scottish Water Board presentation on key strategic issues	23/11/2004
7.12	Quarterly meeting with Scottish Executive	24/11/2004
7.13	Publication of high-level summary of Scottish Water's 1st draft Business Plan	25/11/2004
7.14	WIC 25: RAB (resource accounting and budgeting) submission for October 2004	26/11/2004
7.15	Stakeholder information day	26/11/2004
	December 2004	
8.1	WICS response to 1st draft Business Plan and its implications for customers	03/12/2004
8.2	WICS writes to Scottish Water on cost of capital and plans for treating embedded debt	07/12/2004
8.3	Publication of guidance for 2nd draft Business Plan	08/12/2004
8.4	Scottish Water to submit initial issues regarding WICS guidance for the 2nd draft Business Plan	14/12/2004
8.5	WIC 19: Investment appraisal audits	15-16/12/2004
8.6	Half yearly meeting with Water Customer Consultation Panels (WCCPs)	15/12/2004
8.7	Workshop on 2nd draft Business Plan guidance	17/12/2004
8.8	Guidance to Reporters on 2nd draft Business Plan	17/12/2004
8.9	Resubmission of regulatory accounts and transfer pricing tables (2003-04) by Scottish Water	22/12/2004
8.10	WICS draft corporate plan & budget to Scottish Executive	23/12/2004
8.11	Scottish Water final issues regarding guidance for 2nd draft Business Plan	23/12/2004
8.12	WIC 25: RAB (resource accounting and budgeting) submission for November 2004	28/12/2004
8.13	WIC 24: Leakage strategy	31/12/2004
	January 2005	
9.1	WICS final clarifications/responses on 2nd draft Business Plan guidance	10/01/2005
9.2	Draft operating expenditure efficiency targets announced	14/01/2005
9.3	Letter to Scottish Water regarding regulatory accounts and transfer pricing tables (2003-04)	20/01/2005
9.4	Stakeholder information day	24/01/2005
9.5	Workshop on regulatory accounts and transfer pricing tables	27/01/2005
9.6	WIC 25: RAB (resource accounting and budgeting) submission for December 2004	28/01/2005
9.7	Detailed Guidance from Ministers	31/01/2005
	February 2005	
10.1	Capital Investment Return: Quarter 3 – 2004-05 submission	01/02/2005
10.2	Draft capital expenditure efficiency targets published	02/02/2005
10.3	Tri-partite workshop on implications of Ministerial Guidance	09/02/2005
10.4	Stakeholder workshop on implications of Ministerial Guidance	11/02/2005
10.5	WIC 5: Customer service performance return (Quarter 3 – 2004-05)	11/02/2005
10.6	Workshop on efficiency targets	21/02/2005
10.7	Final version of capital programme to be submitted to Reporter for audit	23/02/2005
10.8	Quarterly meeting with Scottish Executive	24/02/2005
10.9	WIC 25: RAB (resource accounting and budgeting) submission for January 2005	28/02/2005
10.10	WICS response to final Guidance from Ministers published	28/02/2005
	March 2005	
11.1	Stakeholder information day	17/03/2005
11.2	MSP briefing	24/03/2005
11.3	WIC 25: RAB (resource accounting and budgeting) submission for February 2005	28/03/2005
11.4	WIC XX: Annual Return 2004-05 guidance issued	End March
11.5	WIC XX: Regulatory accounting and transfer pricing tables 2004-05 guidance issued	End March

Reference	Event	Date
	April 2005	
12.1	Scottish Water submits 2nd draft Business Plan	20/04/2005
12.2	WIC 25: RAB (resource accounting and budgeting) submission for March 2005	28/04/2005
12.3	Launch of initial consultation on licensing	28/04/2005
12.4	Financial model finalised and published	28/04/2005
	May 2005	
13.1	Capital Investment Return: Quarter 4 – 2004-05 submission	01/05/2005
13.2	Workshop on the detail of Scottish Water's 2nd draft Business Plan (definitional and clarification issues)	04/05/2005
13.3	Stakeholder information day	09/05/2005
13.4	Scottish Water Board presentation on key strategic issues	12/05/2005
13.5	WIC 5: Customer service performance return (Quarter 4 – 2004-05)	13/05/2005
13.6	WIC 1/9/14/22: Non-domestic customer revenue information (Quarter 4 – 2004-05)	13/05/2005
13.7	WIC 4: Domestic customer revenue information (Quarter 4 – 2004-05)	13/05/2005
13.8	Publication of Scottish Water's 2nd draft Business Plan	16/05/2005
13.9	WIC 25: RAB (resource accounting and budgeting) submission for April 2005	27/05/2005
13.10	WICS response to Scottish Water's 2nd draft Business Plan and its implications for customers	30/05/2005
	June 2005	
14.1	Quarterly meeting with Scottish Executive	01/06/2005
14.2	Draft Strategic Review of Charges to printers	14/06/2005
14.3	WIC XX: Annual Return 2004-05 submission	17/06/2005
14.4	WIC XX: Regulatory accounting and transfer pricing tables 2004-05 submission	17/06/2005
14.5	WIC 25: RAB (resource accounting and budgeting) submission for May 2005	28/06/2005
14.6	Publication of draft Strategic Review of Charges 2006-10	30/06/2005
	July 2005	
15.1	Half yearly meeting with Water Customer Consultation Panels (WCCPs)	01/07/2005
15.2	Stakeholder information day	04/07/2005
15.3	WIC XX Annual Return – 1st round of queries: response due from Scottish Water	15/07/2005
15.4	WIC 25: RAB (resource accounting and budgeting) submission for June 2005	28/07/2005
15.5	Close of initial consultation on licensing	29/07/2005
	August 2005	
16.1	Capital Investment Return: Quarter 1 – 2005-06 submission	01/08/2005
16.2	Stakeholder information day	05/08/2005
16.3	WIC 5: Customer service performance return (Quarter 1 – 2005-06)	12/08/2005
16.4	WIC XX Annual Return – 2nd round of queries: response due from Scottish Water	12/08/2005
16.5	WIC 25: RAB (resource accounting and budgeting) submission for July 2005	26/08/2005
16.6	Quarterly meeting with Scottish Executive	31/08/2005
16.7	Final Guidance from Ministers	31/08/2005
	September 2005	
17.1	MSP briefing	01/09/2005
17.2	Deadline for representations on draft Strategic Review of Charges	05/09/2005
17.3	Stakeholder information day	16/09/2005
17.4	WIC 25: RAB (resource accounting and budgeting) submission for August 2005	28/09/2005
	October 2005	
18.1	WIC 25: RAB (resource accounting and budgeting) submission for September 2005	28/10/2005
18.2	Start of consultation on draft licence conditions	31/10/2005
18.3	Stakeholder information day	31/10/2005
	November 2005	
19.1	Capital Investment Return: Quarter 2 – 2005-06 submission	01/11/2005
19.2	WIC 1/9/14/22: Non-domestic customer revenue information (Quarter 2 – 2005-06)	11/11/2005
19.3	WIC 4: Domestic customer revenue information (Quarter 2 – 2005-06)	11/11/2005
19.4	WIC 5: Customer service performance return (Quarter 2 – 2005-06)	11/11/2005
19.5	Final Strategic Review of Charges to printers	14/11/2005
19.6	Quarterly meeting with Scottish Executive	16/11/2005
19.7	WIC 25: RAB (resource accounting and budgeting) submission for October 2005	28/11/2005
19.8	Publication of Final Strategic Review of Charges 2006-10	30/11/2005

Reference	Event	Date
	December 2005	
20.1	Half yearly meeting with Water Customer Consultation Panels (WCCPs)	01/12/2005
20.2	WIC 19: Investment appraisal audits	14-15/12/2005
20.3	Prices to Commission from Scottish Water	16/12/2005
20.4	Stakeholder information day	16/12/2005
20.5	WIC 25: RAB (resource accounting and budgeting) submission for November 2005	28/12/2005
20.6	WIC 24: Leakage strategy	30/12/2005
	January 2006	
21.1	WIC 6: Quality Performance Assessments (written) (Quarter 3 – 2005-06) Scottish Water provides list of complaints	23/01/2006
21.2	WIC 25: RAB (resource accounting and budgeting) submission for December 2005	27/01/2006
21.3	Close of consultation on draft licence conditions	31/01/2006
	February 2006	
22.1	Capital Investment Return: Quarter 3 – 2005-06 submission	01/02/2006
22.2	WIC 6: Quality Performance Assessments (written) (Quarter 3 – 2005-06) Scottish Water provides complaints files	06/02/2006
22.3	Publication of Investment and Asset Management Report (2004-05)	09/02/2006
22.4	WIC 5: Customer service performance return (Quarter 3 – 2005-06)	10/02/2006
22.5	WIC 25: RAB (resource accounting and budgeting) submission for January 2006	28/02/2006
22.6	Stakeholder information day	28/02/2006
	March 2006	
23.1	WIC 25: RAB (resource accounting and budgeting) submission for February 2006	28/03/2006
23.2	WIC XX: Annual Return 2005-06 guidance issued	End March
23.3	WIC XX: Regulatory accounting and transfer pricing tables 2005-06 guidance issued	End March
	April 2006	
24.1	Scottish Water retail business licensed	01/04/2006
24.2	Publication of Customer Service Report (2004-05)	06/04/2006
24.3	WIC 6: Quality Performance Assessments (written) (Quarter 4 – 2005-06) Scottish Water provides list of complaints	24/04/2006
24.4	WIC 25: RAB (resource accounting and budgeting) submission for March 2006	28/04/2006
	May 2006	
25.1	Capital Investment Return: Quarter 4 – 2005-06 submission	01/05/2006
25.2	WIC 6: Quality Performance Assessments (written) (Quarter 4 – 2005-06) Scottish Water provides complaints files	08/05/2006
25.3	WIC 5: Customer service performance return (Quarter 4 – 2005-06)	12/05/2006
25.4	WIC 1/9/14/22: Non-domestic customer revenue information (Quarter 4 – 2005-06)	12/05/2006
25.5	WIC 4: Domestic customer revenue information (Quarter 4 – 2005-06)	12/05/2006
25.6	WIC 25: RAB (resource accounting and budgeting) submission for April 2006	26/05/2006

External advice

We will deliver most of the work-plan outlined in this document using in-house office resources. In certain areas, there will be a need for specialist advice from a number of companies with appropriate financial, asset management and audit expertise. This is cost-effective for our Office and ensures that the Strategic Review of Charges benefits from the fresh perspective of external experts. At this stage, we are proposing to implement three projects, covering indicators of financial sustainability, an audit of our financial model and an audit of Scottish Water's asset management processes.

In addition, we are fortunate in being able to seek advice and comment from two senior advisors: Sir Ian Byatt and Professor David Simpson. Sir Ian was the former Director General of the Office of Water Services (Ofwat). Professor Simpson was former Economic Adviser to Standard Life, and his previous post was Professor of Economics at the University of Strathclyde.

Chapter 2

Background to and framework for the Strategic Review of Charges 2006-10

Introduction

The principal statutory duty of the Water Industry Commissioner for Scotland (WICS) is to promote the interests of customers. We promote the interests of customers primarily by encouraging Scottish Water to become more efficient. Cost cutting is not efficiency. Efficiency is about reducing costs and maintaining or improving the levels of service to customers. Scottish Water can therefore become more efficient by reducing its cost to deliver an acceptable level of service or by improving its service to customers without increasing its costs.

The last Strategic Review of Charges covered the period 2002-06. In November 2005 we shall publish our second full Strategic Review of the Scottish water industry. The Review will outline the price and revenue implications for customers of Scottish Water for the period 2006-10.

This is the second of a series of five information and consultation documents which we are publishing between July and September this year, and which will set out our proposed methodology and approach for the Review. All of the documents that we have published, and will publish over the coming months concerning the Review, reflect our intention to provide an open and transparent process. This is in accordance with our commitment to the Better Regulation Task Force principles of proportionality, accountability, consistency, transparency, and targeting².

In this document we outline the background to our work in assessing the appropriate level of prices. It divides into two parts;

Section 1 sets out and explains the background of the Review and the current regulatory framework; and

Section 2 discusses the changes to the regulatory framework that are anticipated in the near future and the impacts that these changes might have both for regulation and for customers.

We are also planning to hold a series of workshops and stakeholder information days where interested parties may express their views in person. Details of these events were contained in *Our work in regulating the Scottish water industry: Setting out a clear framework for the Strategic Review of Charges*, which was published in July 2004 and is available on our website.

Economic regulation

Prior to setting out the framework for the next Strategic Review of Charges, it is important to explain the role of regulation within the water industry in Scotland.

The purpose of regulation is to seek to ensure that monopoly businesses act in the customer interest. Customers should not have to pay higher prices or accept lower levels of service because they are unable to choose their supplier.

Network utility industries tend to be monopolies because the cost of replicating the network is excessive. Economists describe them as involving a significant 'natural monopoly' element. A 'natural monopoly' refers to the situation where there is only one firm supplying a product in the market, but this is not the result of the behaviour of the firm. Instead, it arises because it is the sensible way to organise the industry and it is in the best interests of customers.

However, the behaviour even of natural monopolies may work against the customer interest if unchecked. There are two ways in which this might happen.

First, if the service is essential and the customer has no choice about where to purchase it, the monopoly has an incentive to charge an excessive price and to make excessive profits.

Second, in the absence of competition the monopoly faces no incentive to innovate and improve its efficiency over time.

Economic regulators³ seek to establish a tight budgetary constraint on the regulated body. In other words, clear

² The Better Regulation Task Force was established in September 1997. It is an independent body that advises Government on action to ensure that regulation and its enforcement accord with the five Principles of Good Regulation. For further information see <http://www.brtf.gov.uk>.

³ Regulation of a public sector corporation is not unique. Postcom fulfils a similar role to WICS in its regulation of the Royal Mail. The Civil Aviation Authority (CAA) also has economic regulation responsibilities for the locally owned Manchester Airport.

statements are made about the outcomes for customers that the body must deliver and about the amount of money that can be spent. This can be achieved by fixing the maximum return available (unless targets are beaten) or by limiting the total cash funds that may be consumed.

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

In a competitive market, companies face similar tight budgetary constraints in that they have to match their costs to the revenue they can win from customers. Regulation consequently provides a proxy for the discipline of competition.

The creation of Scottish Water

The *Strategic Review of Charges 2006-10*, unlike its predecessor, will focus solely on the activities of Scottish Water. In the last Strategic Review of Charges (2002-06), the creation of Scottish Water from the three previous water authorities was still subject to ministerial approval.

The three separate authorities remained in existence until the formation of Scottish Water under the Water Industry (Scotland) Act 2002 on 1 April 2002. Under sections 21-23 of the Act the functions, property, liabilities, and staff of the water and sewerage authorities were transferred to Scottish Water.

Scottish Water remains in the public sector, and is owned by and accountable to the Scottish Executive and Ministers. However, the structure and management of Scottish Water draws on the private company model. The combination of public sector ownership and private sector organisational structure is intended to ensure that the business is run in the public interest as efficiently as possible.

Scottish Water has completed two years in its new form and has made good progress in reducing its operating costs. To date, progress in the delivery of the capital programme is less encouraging. Customer benefits will only fully be realised when progress in improving the efficiency and delivery of the capital programme accelerates.

If a public sector organisation can match the level of efficiency of investment and service delivery that is achieved by the private sector, customers of that public sector supplier could expect sustainably lower prices than could ever be achieved by the private sector. This is because the public sector is consistently able to access a lower cost of capital. There can be no doubt that customers of Scottish Water benefit significantly from access to attractive terms for public government loans that are much cheaper than the private sector's cost of capital⁴.

It is important to note that this cost benefit will only truly be realised by customers if they are not exposed to operational risks and if the service is delivered efficiently. However, as regulator we must take into account that customers of Scottish Water are more immediately exposed than customers in England and Wales to the financial risks of the business. This is because there are no private equity shareholders.

The Strategic Review of Charges 2002-06

Our analysis showed that a sustainable water industry in the public sector would require action to be taken in the following areas:

- increased revenue to the minimum level consistent with meeting ongoing maintenance and environmental/ public health compliance;
- challenging but achievable efficiency targets;
- further improvement in customer service;
- harmonised and broadly cost-reflective tariffs;

⁴ We estimate that customers of Scottish Water probably benefit by around £44 million per year, because of a 2% saving on the annual cost of capital (about 4.5% on the average bill). We have calculated this on the basis of current total borrowing of approximately £2.2 billion.

- improved regulation and financial control;
- improved performance monitoring; and
- better governance.

The level of revenue

We showed that the Scottish industry had spent considerably more, in the past several years, than it received in customer charges. We explained that this was a problem because there was a likelihood that sustained investment at current levels will be required for the foreseeable future.

Continuing to increase net borrowing significantly to eliminate the gap between revenue and expenditure will only make matters worse. Borrowing may delay a price increase, but it will increase future bills by the interest payable on any additional borrowing. In providing our advice on the level of revenue, we took into account a clear customer concern that the industry had “to get its house in order” and that, as a commodity business, “it should learn to live sustainably without real increases in price”. We believe that the revenue increases that were implemented will ensure that we have a more sustainable industry in the future and that customers will see the benefits in steady prices. If Scottish Water continues to make progress in reducing its costs, it is possible that prices will not need to increase in real terms.

Challenging but achievable efficiency targets

The charges paid by customers in the public sector model are a direct function of the efficiency of the water industry in Scotland. Unlike in the private sector, 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.

We set three separate efficiency targets to cover operating costs, capital expenditure, and the potential

savings resulting from the merger of the three authorities. These efficiency targets were challenging but achievable. After two years, we can see real progress in reducing operating costs. Scottish Water is also confident that the creation of Scottish Water Solutions will improve both the timeliness and the efficiency of the delivery of capital investment.

The total annual value to customers if Scottish Water achieves the efficiency targets is in excess of £400 million a year by the end of the current regulatory period in 2005-06. Such an achievement would result in customers’ bills being some 40% lower than would otherwise have been the case⁵. These efficiencies are important because a sustainable water industry needs to be affordable both now and in the future.

Harmonised and broadly cost-reflective tariffs

When the Minister for the Environment, Sport and Culture, Sam Galbraith, MSP announced his intention to merge the three water authorities, he highlighted the harmonisation of charges as an important benefit. There were clearly significant anomalies in the charges that resulted from the three-authority model. It is, for example, much cheaper to supply Dundee than North Fife, yet charges were much higher in Dundee. It was more expensive to serve south Ayrshire than the western Central Belt, yet charges would be the same. We considered that a harmonised charge across Scotland was equitable for all customers. To do otherwise would have been to sanction a postcode lottery in charges for water. It would also break with normal practice in the pricing of utility services – ie to harmonise prices across the whole of a company’s area.

There has been some comment about our recommendation that charges for businesses should also be harmonised across Scotland. There were three reasons why we considered that this was important.

- The merger of the three authorities only made sense if cost savings, investment prioritisation and a single management structure were to be introduced. This would remove the justification for differential

⁵ This takes no account of any rebalancing between revenue and debt.

pricing for the three former areas. The choice therefore is between wholly cost-reflective charging (which will disadvantage the smallest and most rural) and fully harmonised charging.

- Businesses, like households, should not be asked to pay more solely because of their location.
- The distinction between some households and non-domestic customers was blurred, for example people who work from home, farms and crofts, owners or managers with accommodation in hotels or on school and business sites.

It still seems to us that it would have been difficult for Scottish Water to defend having different pricing regimes in different parts of Scotland.

Regulation and financial control

Over the past four and a half years we have dedicated significant resources to establishing a robust and objective regulatory reporting regime. We were fortunate that we could draw on the information contained in the Annual Return to write the *Strategic Review of Charges 2002-06*. This was the first time that such standardised information had been available. In the past two years we have made a considerable effort to improve further the overall quality of management information. This will be crucial to improving the financial and customer service performance of the industry.

Improved monitoring

Monitoring performance is central to regulation. This explains why we sought ministerial approval for the annual reports on the performance of the industry in Scotland and for a joint project with the quality regulators to agree how the outputs of the capital investment programme should be monitored. Increased information about performance is only valuable if, as a result, customers get a better level of service or the costs of the industry can be sustainably reduced.

Performance monitoring has developed significantly in last the two years. This monitoring takes two forms:

ongoing collection and analysis of information; and publication of annual reports on:

- Costs and Performance;
- Investment and Asset Management; and
- Customer Service.

These reports are objective analyses of the current performance of the industry in Scotland. We believe that our performance monitoring has already brought results. Scottish Water performed much better in its second year than initial drafts of its business plan suggested were possible. Our monitoring of the capital programme will also ensure that we can manage the transition from the *Quality and Standards II* to the *Quality and Standards III* period effectively. This will ensure that there will be no question of customers paying twice for the same promised improvement.

Better governance

We believed that better governance would be vital if the performance of the Scottish industry was to improve. It is encouraging that the Scottish Executive has adopted many of our recommendations from the last Review.

We made **five** principal recommendations. These recommendations and the current position are outlined below.

Recommendation:

There should be 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.

Current position:

The Scottish Executive is introducing a much clearer regulatory framework. Ministers will take clear decisions on the levels of investment and investment priorities. They will also provide guidance on how customers should pay for water and where they want to see cross-subsidies.

Scottish Water will have to draft a business plan that takes full account of the guidance from Ministers and outline their strategy objectives and views on prices for the next regulatory period. This business plan will have to be approved by the Board. The Board will have to present this plan to the economic regulator. Ministers will use a first draft of this plan to inform the guidance that will underpin the second draft.

Recommendation:

There should be 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.

Current position:

The Board of Scottish Water has eight non-executive members. These members bring extensive experience of different business sectors and sizes. In particular, they have significant expertise in utilities, asset management and finance. The Board can also draw on important expertise in large change programmes and human resource issues.

Recommendation:

The right balance should be struck between executive and non-executive directors. The Board is crucial in supervising the drive for efficiency.

Current position:

There are eight non-executive and five executive members of the Board.

Recommendation:

There should be transparent and appropriate incentives and penalties for executive board members and for senior management to ensure that the right calibre of professionals is attracted to the industry

Current position:

Senior management can earn bonuses. The remuneration committee of the Board sets these bonuses based on performance criteria established at the start of the year. In Scottish Water's Annual Report for last year, information was provided about how individual bonuses had been calculated.

There may still be room to improve the transparency of the incentive system. Best practice would suggest that the performance measures that will be used to determine bonuses will be published in advance and should be independently measurable and verifiable.

Recommendation:

There should be clear setting of the risk profile by the owner, followed by management of risks by the board to the criteria established by the owner.

Current position:

The strengthening of the governance and regulatory framework described above should ensure that this recommendation is met.

Inevitably there were some unexpected consequences of the actions that we recommended. One example would be the size of the percentage increases in bills for some non-domestic customers. While we recognise the concerns of these customers, it is not clear that we could have acted differently. We have to balance the interests of all customers and every customer who pays below the average cost of supply for the service that they receive is gaining at the expense of other customers. It is important to remember that even if the difference in tariffs had been reduced by half, water customers in the North would have been paying some 40-50% more for the water that they consumed.

The methodology for the 2006-10 Strategic Review of Charges will build on the solid foundation created by our work in 2001. We will use the improved information that is now available to broaden and deepen the analysis that we were able to complete for the last Review.

Resource accounting and the Strategic Review of Charges 2002-06

In reviewing the outcome of the *Strategic Review of Charges 2002-06*, it is important to explain the impact on customer bills of the introduction of resource accounting. In recent months, this topic has been discussed in detail by the Parliament's Finance Committee. We believe that the introduction of resource accounting did not have an impact on the prices paid by customers. Indeed, the introduction of resource accounting led to increased scrutiny of the value of assets owned and the depreciation policies used by the industry. This will have contributed to the progress of the past few years towards a more sustainable public sector water industry that can continue to meet the expectations of customers.

Resource Accounting and Budgeting (RAB) was fully introduced in April 2001. The Minister's commissioning letter for the 2002-06 Strategic Review of Charges set public expenditure limits on a resource accounting basis. It also made clear that we should regard these as maximum limits and that we should demonstrate, by means of risk analysis, that our advice on charges was consistent with these maximum limits.

The introduction of resource accounting did not directly impact on the way in which either the three authorities or Scottish Water managed their businesses or prepared their accounts. The three authorities had always prepared their accounts on an accruals basis. Resource accounting did change the financial control figure that the Scottish Executive used. Instead of monitoring the extent of new borrowing required (refinancing of existing debt at maturity does not count as public expenditure), the Scottish Executive began to measure consumption of resources and capital spending.

Clearly the way in which a company is monitored or analysed does not impact on either its accounts or its underlying business. Consequently, providing that the control total has been correctly adjusted to reflect the difference in how it is calculated, this should have

had no impact on the company or the prices that it needs to charge.

We were confident that the public expenditure control figures included in the letter were consistent with the approach that had been outlined by the Treasury and that they had been adjusted upwards to take account of the difference in the way in which the control figures were calculated.

Subsequent events have shown that sufficient public expenditure had been made available to cover any likely underperformance. The end-year flexibility allowed by the Scottish Executive has also allowed this expenditure to be used when required. We have to conclude, therefore, that the level of public expenditure that was made available by Ministers did not adversely impact on customer charges.

Performance monitoring

An important improvement in the regulatory framework for the water industry in Scotland in recent years has been the introduction of performance monitoring mechanisms. In England and Wales, Ofwat monitors and reports on the performance of the companies on a regular basis. Ofwat also sets targets for improvement that are, at least in part, driven by comparisons between the companies. Investors are very interested in these reports because they provide an objective source of information about the prospects of the companies. However, investor reaction to news from a company could alert Ofwat to an issue that may not yet have surfaced in a regulatory return.

In the public sector model, the absence of investor scrutiny makes our performance monitoring even more important. This explains both our recommendation to the Minister that we should publish annual performance reports, and the resources that we have invested in regulatory systems.

Shortly after the formation of this Office in November 1999, we signalled⁶ our intention to establish a mechanism to ensure that it would be possible to carry out rigorous comparisons between the water authorities

⁶ In the interim Strategic Review of Charges published by the Water Industry Commissioner for Scotland in early 2000.

and between the industry in Scotland and in England and Wales. The subsequent ‘information project’⁷ led to the creation of a Scottish version of the June return which is submitted to the Ofwat. This return provides a comprehensive set of financial, asset condition, capital investment and customer service indicators, which allow us to monitor and report on Scottish Water’s performance.

We included two key recommendations to strengthen performance monitoring further in our advice to Ministers contained in the *Strategic Review of Charges 2002-06*⁸.

- 1) To endorse a joint project between the Water Industry Commissioner, Scottish Environment Protection Agency and the then proposed (now established) Drinking Water Quality Regulator to ensure that consistent output measures and metrics are collected and monitored.
- 2) To require the publication by this 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.

We have also built up a range of other performance monitoring activities, which help to improve our understanding of how well Scottish Water is performing:

- Monthly financial returns – these financial reports provide a detailed breakdown of Scottish Water’s financial performance over the preceding month and progress against annual budgets;
- Quarterly returns on progress with the capital investment programme – provide an update on progress, at a project level, with delivery of the capital investment programme;
- Audits of Scottish Water’s investment appraisal process; and
- Customer service performance audits – provide an

assessment of Scottish Water’s performance across a range of customer service measures.

We are committed to ensuring that customers get better value for money and to this end we intend to work to strengthen our performance monitoring in the area of investment delivery. We will also need to adapt our processes to take account of future changes in legislation and the regulatory framework, such as the introduction of a competition framework and the development of regulatory accounts.

- The introduction of regulatory accounts

The Strategic Review of Charges 2006-10 will focus only on the core activities of Scottish Water in providing water and sewerage services to customers in Scotland. This change reflects the requirements of the Water Industry Act 2002, which restricts our role to promoting the interests of customers of the core business. We have begun to establish regulatory accounts, which will ensure that customers of the core business are only paying for services associated with core activities. This work will be completed during the current financial year.

- The introduction of a competition framework for the water industry in Scotland

The proposed changes to the competition framework contained in the Water Services (etc) Scotland Bill will also require a further level of accounting separation. This framework will require there to be a clear split between the retail (customer service and billing) costs and the wholesale (network management and operation of treatment plants) costs.

Both of these developments will improve the quality of information provision and hence the robustness of our analysis.

The ‘ten principles’

Successful performance monitoring, and hence successful regulation, relies on the existence of an

⁷ See Chapter 2, 2.2: ‘The collection and use of information’.

⁸ Strategic Review of Charges 2002-2006, Executive Summary Page 3 section c) ‘Key recommendations’.

agreed set of targets, which the regulated company (in this case Scottish Water) is required to achieve. Without agreement on these targets, performance monitoring and reporting becomes difficult and regulation will not be effective. This impacts directly on customers and stakeholders, as it is the existence of clear targets that drives regulated companies to tackle inefficiencies, deliver investment and achieve customer service improvements.

The Transport and Environment Committee of the Scottish Parliament reviewed the operating cost efficiency targets early in 2001. The Committee heard evidence from the three former water authorities and from the Scottish Executive, all of whom regarded the targets set out in the Review as achievable. It also heard from a range of other stakeholders, who did not express a view, and from the unions represented in the water industry. The unions regarded both the method of benchmarking and the resulting targets as unreasonable. After a long and detailed enquiry, the Committee concluded that the targets were challenging but fair.

The *Strategic Review of Charges 2002-06*, which was published in November 2001, advised on revenue caps both for the three authorities and for the proposed Scottish Water. The Review therefore established the regulatory targets for Scottish Water in the period to 2006.

Scottish Water is required to produce an annual business plan for approval by Ministers, which sets out the Board's strategic aims for the company and contains details of the key financial and delivery targets for the business.

In early 2003, Scottish Water submitted its proposed business plan for the three year period from 2003-04 to 2005-06. In March 2003, the Minister wrote to the Commissioner requesting that he consider representations from Scottish Water about its strategic business plan. In particular, the Minister noted that Scottish Water's proposed business plan suggested that Scottish Water's operating cost targets would be

different from those set out in the Strategic Review of Charges. This would have resulted in increased borrowing, with no extra benefits for customers and increases in future charges.

We received written representations from Scottish Water. We also met with Scottish Water to discuss these representations. In our response we pointed out that the operating cost projections contained in the Scottish Water strategic business plan would have led to price increases of around £40-£50 in 2006-07 for the average domestic customer. We explained that we considered this neither justifiable nor acceptable. We also concluded that Scottish Water's business plan did not provide a sufficient degree of financial sustainability to ensure the longer term success of the company. This is clearly not in customers' interests.

We had to find a settlement, which protected the customer interest, and would also be acceptable to Scottish Water. This led to the agreement of ten principles.

Principle 1

Operating costs for the whole year 2005-06 should be at a maximum of £265 million, which is £7 million above the £258 million WIC monitoring target set in the Strategic Review. The £7 million allows for factors that were unknown at the time of the Review and comprises £4 million additional allowance for the higher operating costs position inherited by Scottish Water and £3 million for the different legal status of lateral sewers in Scotland. This will provide a significant protection for customers against future unnecessary price increases. In reporting the operating cost performance of Scottish Water, the Commissioner will comment upon progress towards this figure.

Principle 2

Scottish Water's total debt at the end of the Strategic Review period may rise to a maximum of £2.47 billion. This level of debt includes an amount of up to

£112 million reflecting estimates of projected price inflation (above 1.5%) in the cost of capital goods. The range will increase to a maximum of £2.71 billion when the remaining £235.2 million (post-efficiency, £305.5 million pre-efficiency) of 'red'⁹ projects in the WIC 18 capital investment programme are approved by all stakeholders for inclusion in the programme

Principle 3

Scottish Water and the Commissioner will agree schemes of charges for both 2004-05 and 2005-06 in the near future, in such a way as to include price caps that are consistent with the revenue caps agreed in the Strategic Review. The purpose of this provision is to provide customers with a greater measure of certainty about their forthcoming bill. In addition, Scottish Water and the Commissioner will establish a mechanism to adjust future schemes of charges for over-collection and under-collection of revenue.

Principle 4

A Reporter of regulatory information will be appointed as soon as practicable. The Reporter will operate in a fashion similar to Reporters in England and Wales. The Reporter should be appointed by the Commissioner and would be chosen from amongst persons that have served at least three years as an Ofwat-named Reporter. The Executive will meet the cost of the Reporter.

Principle 5

Measurement of Scottish Water's comparative and improving efficiency will take place on the basis of the method established in the Strategic Review of Charges. Appropriate costs (subject to audit by the Auditor General) incurred in the pursuit of activities not undertaken in 2000-01 will be removed from regulatory operating expenditure to the extent that these costs are funded by revenues from these new activities.

Principle 6

Subject to the agreement of the Auditor General, the Commissioner and the Auditor General for Scotland will work closely to establish the nature of prospective regulatory adjustments, prior to the Auditor General commencing audit of Scottish Water's accounts. It is intended that the broad nature of forthcoming regulatory adjustments may be set out in a note in the accounts in addition to (but not substituting) information contained within the existing accounting requirements. The Commissioner will request that the Auditor General for Scotland audit the process by which the Commissioner makes adjustments to information contained within the accounts and regulatory return made by Scottish Water to the Commissioner. After consulting the Commissioner and Scottish Water, the Executive will seek the views of the Director General of Ofwat on the nature and scope of adjustments that should normally be made to audited accounts for purposes of regulatory comparison

Principle 7

Scottish Water will agree to work with the Commissioner to put in place a range of measures to assist the improvement in their relationship. This is likely to include various matters, including for example, the sharing of reports prior to publication (for the purposes of factual comment), the provision of regulatory and other information to the media, and other mutual mechanisms for resolving routine working issues as they arise.

Principle 8

Non-core activities that are new in nature or additional in extent to those passed to Scottish Water by the former Authorities may be pursued by Scottish Water (subject to the approval of Scottish Ministers) on the basis that they are funded by performance in excess of the agreed minima, taking into account progress towards the target for the end of the period.

⁹ 'Red' projects are projects originally included in *Quality and Standards II* that DWQR and SEPA had decided were no longer required. New outputs will be substituted.

Principle 9

The Executive will investigate setting up a prospective appeal mechanism to the Competition Commission.

Principle 10

Scottish Water will engage with the Commissioner in improving the quality of data supplied to the Commissioner.

In reaching an agreement on the ten principles, we were adamant that any proposal should be consistent with the customer interest. We believed that this process should either improve our ability to undertake regulation, or improve the likelihood that Scottish Water would achieve its efficiency targets. The ten principles achieve these objectives by providing a framework for improving regulatory information and by establishing a common understanding of Scottish Water's targets.

The use of borrowing in the Scottish Water Industry

There has been a great deal of discussion about whether or not the industry should borrow more and reduce prices to customers. It is important to look not only at the short-term price benefit that could be achieved by increasing borrowing but also to consider the increased exposure to risk, the potential disincentive to improve efficiency and the future level of prices before concluding that borrowing a lot more now is in the interests of both present and future customers.

The Scottish water industry is cash negative: that is to say it spends more than it receives in customer charges. This situation is likely to continue for the foreseeable future. As debt increases, so too does the total interest bill that must be met by customers. Managing debt at prudent and sustainable levels is therefore critical if the industry is to be able to respond to operational shocks.

A company will borrow when it is short of cash. This may be for short-term operational reasons (eg to cover working capital until goods or services are paid for) or for investment. If a company borrows for operational reasons, the company has to budget for the interest costs and the repayment of principal. If a company uses

debt as a source of funds for investment, management has to make sure that the additional return on the investment covers the interest payment and, ultimately, repays the capital.

In either case, the company is committing its future income to pay for today's cash resources. It is important to remember that debt is not an additional source of revenue.

Consideration of the prudence of increasing debt is more complicated in a regulated business. An economic regulator seeks to ensure that customer charges are set at the lowest level consistent with a sustainable business. He will therefore typically only allow an increased return (ie increased revenue from customers) to be earned by a company if there has been a net increase in the total asset base. As such, borrowing any more than this net increase in the total asset base would not be prudent. If a company continued to borrow in excess of the net new assets created, it would not take long for the revenue that its regulator allowed to be less than its outgoings (not including new investment). In a private sector context insolvency would follow.

In a public sector model, the trade-off between debt and equity returns is not an issue. All retained earnings will remain in the business and will be used to the benefit of customers. In a regulatory capital value model, customers pay a charge that depends upon the level of investment, the depreciation of the asset base, a rate of return on the regulatory capital value and allowable operating costs. The level of debt does not influence charges directly.

As new investment is added each year, the total value of the regulatory capital value will increase each year. Charges will gradually increase over time to reflect the larger capital value that needs to be remunerated. Customers do not therefore pay for the use of an asset before it has been added to the regulatory capital value. If the proportion of debt to regulatory capital value stays the same, there is no inter-generational wealth transfer. Moreover, if the cost of capital allowed on the regulatory capital value is the same as the borrowing cost of the public sector company, there should be no advantage to increasing debt (beyond increases allowed as the regulatory capital value increases).

Debt commutation

Many commentators have asserted that the Scottish water industry was unfairly treated in the amount of debt commuted at its reorganisation in 1996. The argument is that in England and Wales the water authorities had all of their debt written off before they were privatised, whereas less than half of the total water and sewerage debt accumulated by the Regional and Island Councils was commuted. This assertion does not bear scrutiny. Indeed, the Scottish water industry seems to have received a significantly better deal than the industry south of the border.

At privatisation in England and Wales, net debt of £4.95 billion was commuted^{10,11}. In addition, the Treasury provided a cash injection (known as the 'green dowry') of £1.57 billion. The total cost of the transaction before the proceeds from privatisation was £6.52 billion. This is equivalent to £275 for every household in England and Wales. Privatisation raised £5.22 billion. The net cost to the Treasury of the reorganisation of the water industry, therefore, was £1.3 billion. The net cost per household was approximately £55. The Treasury also transferred accumulated tax losses of £7.76 billion to the companies, but this did not have a cash cost to the Treasury.

Financial reorganisation in Scotland was more straightforward. When the three water authorities were created in Scotland, the Treasury commuted some £700 million of a total of £1,700 million of local Regional and Island Council debt relating to water and sewerage activities. This left £1 billion debt on the starting balance sheets of the three authorities. Clearly there were no receipts from privatisation to reduce the costs of the restructuring. The total cost to the Treasury from this reorganisation was therefore £700 million. This amounts to more than £330 per household. The cost to the Treasury was therefore around six times greater than that incurred reorganising the water industry in England and Wales.

At the time of the Strategic Review, the industry in Scotland had £1.7 billion in tax losses. These were

proportionately more than in England and Wales. These tax losses were transferred to Scottish Water by the Water Industry (Scotland) Act 2002.

It has also been argued that the Scottish water authorities were unfairly treated because of the high cost of debt after 1996. This argument again does not stand detailed scrutiny because the average interest charge on the debt compares very favourably with the returns that were offered to potential shareholders to ensure that privatisation was a success.

The public sector industry in Scotland will also continue to benefit from access to cheaper borrowing. The interest rate charged to Scottish Water is usually around 0.2-0.4% lower than the equivalent rate for the highest quality private sector debt.

The impression that customers in Scotland have been disadvantaged can only result from operational and capital inefficiency.

In our most recent Costs and Performance Report, we noted that out of an average domestic bill of £241, £80 or 33% was the direct result of inefficiency. This means that customers paid more than £300 million to finance inefficiency. The costs of this inefficiency were greater than the net new debt taken on by the three authorities. In real terms the customer has received no value for the extra debt accumulated and it follows that the industry's finances have been made less sustainable by this increase in borrowing.

Transparency in the level of debt

From a customer perspective, it is important that the industry is managed on a sustainable basis. This requires that management must face a hard budgetary constraint.

A hard budgetary constraint will also impact on the owner of a business. The owner needs to take difficult decisions in the event that performance (for whatever reason) lags behind what is expected. Providing some more short-term capital may be part of the solution but

¹⁰ £5.02 billion was commuted and £72.9 million of new debt issued in favour of the Treasury

¹¹ 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.

there will also be a need to ensure that other steps are taken to ensure that performance reverts back to an acceptable standard. The ten principles are a good example of such decisive action

Finance Committee Investigation

In recent months, the financing of the water industry in Scotland has come under scrutiny by the Finance Committee of the Scottish Parliament. Consideration of the findings of the Committee will form an important part of the next Strategic Review of Charges.

In November 2003, the Finance Committee agreed the following remit for an investigation by two of its members.

“To investigate the following issues:

- accountability – looking at the role of the Water Industry Commissioner, the relationship with Scottish Water, the Scottish Executive and local authorities;
- structure – looking at water charging and debt management;
- investment – looking at capital projects, the profile of procurement and borrowing, billing and financial management; and to suggest potential areas for the questioning of Scottish Water and the Water Industry Commissioner....”

The Committee published its report in April 2004. The Scottish Executive made an initial response almost immediately and a further response on 14 June 2004. We responded to the Committee at the beginning of June 2004.

Reasons for the investigation

There had been an increasing amount of press attention to water industry issues during 2003. The issues raised included:

- delivery of investment and an apparently increasing number of development constraints;

- disagreements between this Office and Scottish Water on its performance;
- the large increases in charges that some small businesses had faced – this had become a high profile issue, with representative organisations such as the Federation of Small Businesses and the Scottish Forum for Private Business raising concerns; and
- a paper written by Analytical Consulting Ltd and submitted to the Finance Committee, which suggested that public expenditure rules had been incorrectly applied and that customer charges were higher than necessary as a consequence.

The Committee's findings and our response

A copy of the Committee's report is available on the Scottish Parliament's website (<http://www.scottish.parliament.uk/finance/index.htm>). The Committee made twenty one recommendations as a result of its inquiry.

We welcomed the Committee's report and its scrutiny of the water industry in Scotland. In our view this report should help ensure that all customers will benefit from a more sustainable water industry.

We agree that the strengthened regulatory regime should be more clearly accountable to customers. The current role of the Water Industry Commissioner for Scotland, as defined by statute, is to advise Scottish Ministers and to approve schemes of charges proposed by Scottish Water so long as they are consistent with the advice provided to, and accepted by, Scottish Ministers. This advice is provided within a defined policy framework (for example, that there should be a link between domestic water and sewerage charges and Council Tax bands).

In evidence we suggested that economic regulation should work in broadly the same way as for other utilities. This model requires that Ministers provide clear guidance on social, environmental and public health priorities and that the regulator should then manage a transparent process, which leads to decisions on the

maximum prices that can be levied on customers. Scottish Water should have the right of appeal to the Competition Commission. This very clear process is likely to reduce the current uncertainty amongst stakeholders on roles and responsibilities.

The Committee also made a number of other observations. Their observations, and our responses, are detailed below.

28. It is clear that the optimistic forecasts of minimal price impacts from harmonisation of prices across Scotland were not realised. Efficiency gains from the greater economies of scale should have minimised any price impact. Instead between 2001-02 (the last year of the three separate authorities) to 2004-05 (the current year and harmonisation of prices at £338.31) customers in the East are paying 25.3% more (£68.31), customers in the West are paying 27% more (£71.91) while the North is paying marginally less -3.4% (-£11.87). This is at variance with the estimate provided by the WIC. The Committee is not convinced of the WIC's estimate and explanation of the impact of harmonisation on customers in the East and West

We can confirm that the estimate that we supplied to the Committee, on the impact of harmonisation on the value of the average domestic bill, is accurate. There would appear to be two principal reasons for the misunderstanding. Firstly, the Report includes a table that details changes in the Band D bill – this is significantly higher than the average domestic bill, which is between the Band B and the Band C levels. Secondly, the substantially increased level of investment included in *Quality and Standards II* resulted in an overall increase in prices that could only be partially offset by the efficiency targets that were set for capital and operating costs.

35. The Committee is concerned that there does not appear to be agreement between the WIC and Scottish Water on how much progress is being made with regard to efficiency savings and operating costs and is also concerned over

what the impact could be if the necessary savings are not met.

The Committee is correct to be worried about the impact on future prices of a failure to meet the efficiency targets that were set in the Strategic Review of Charges.

It is however not uncommon for there to be disagreement between the regulator and the regulated organisation about both the level of the efficiency target and progress towards that efficiency target. Our role is to monitor progress of Scottish Water on a fair and objective basis. Customers can therefore be assured that comments from this office will be supported by appropriate evidence and underpinned by a consistent methodology.

59. While the Committee understands the Scottish Executive's reasons for promoting the equalisation of domestic bills across Scotland, the consequences in terms of increased charges were not adequately explained to consumers and appear to have been underestimated.

Astonishingly, the impact of the harmonisation of business charges on low volume business users appears not to have been foreseen. No economic justification for business charge harmonisation was given either by Ministers or the WIC, despite its significant impact on firms adversely affected. The failure to openly debate and consult on harmonisation and the specific harmonisation methodology that was implemented for business users, as well as the failure to introduce such a significant change on a phased basis, has caused a great deal of distress to small businesses.

The desirability of harmonised charges was recognised in the discussion that followed Sam Galbraith's announcement to the Transport and Environment Committee in February 2001 of the Scottish Executive's intention to create Scottish Water.

We accept that many of those who faced sharp increases in bills believe that there was insufficient

debate and consultation about the change in tariffs. Any such change in tariffs is likely to be unpopular with those who end up paying more and accepted as right and proper by those who benefit. In this regard, while we can sympathise with businesses who were asked to pay more, we also believe it is important that we remember that there were many businesses that benefited from the change in tariffs and that they had been paying relatively higher (than others of a similar type and pattern of usage but located in another authority area) bills since 1996.

During our programme of consultation, we received many representations from businesses and business representatives that differential charging based on location was unfair.

In evidence, the Finance Committee heard that “..it is an unusual notion that would take a strategic asset like water and say that, no matter whether someone lives in Rannoch or the top of the Cairngorms, the same pricing policy will exist for all” (paragraph 57). However, other utility businesses operating in Scotland do precisely that. Scottish Gas and BT apply the same charges across the whole of Scotland, while the Scottish electricity companies (Scottish Power and Scottish Hydro-Electric) each apply the same tariffs throughout their respective areas. It would seem not unreasonable, therefore, for Scottish Water to apply uniform tariffs, regardless of location. Certainly considerable thought should be given to the implications of the location signals that would be given to developers of encouraging a major water user to locate, say, in North Fife (a high cost water area) rather than in, say, Dundee (a low water cost area).

80. The Committee recommends that to give the public greater confidence in the quality of the consultation carried out, both Scottish Water and the WIC should operate under clear consultation codes with consistent approaches to publication of responses. In particular, all consultation submissions made to the WIC should be made public before any of his statutory reports are released and the WIC should address the relevant issues raised by

consultees within the reports themselves. In this way, the public can be reassured about the conduct of the relationship between the WIC, Scottish Water, its customers and the Scottish Ministers.

We agree that the introduction of such a code would be of benefit. Our Office will prepare in draft and consult on such a code. It would be useful to formalise this in statute in the forthcoming Bill.

83. The Committee believes that it would aid the accountability and transparency of the WIC in the view of many customers if he had to give a formal response to submissions from the Panels, which could also be lodged with the Parliament.

We would agree that this proposal could bring benefits. There would, however, be a resource implication associated with preparing an appropriate detailed written response to all submissions.

84. The WIC is both financial adviser and guardian of the public interest but was unable to provide the Committee with a clear illustration of how the public interest is determined where different interests have to be balanced. For example, weighing lower prices to the customer against the long term sustainability of the water supply network is an important decision that has been taken with little public debate.

In our evidence to the Committee, we explained that our role is technical, not political nor representational of particular groups (as opposed to customers as a whole). This technical role should ensure that the aims of Ministers are delivered, for the lowest justifiable cost to all customers.

The Strategic Review drew on guidance from Ministers on the level of performance expected from the water and sewerage network. *The Quality and Standards II* process provided the vehicle for this guidance.

85. The Committee is concerned that there is a lack of transparency in the way in which the roles of

the WIC as regulator and customer champion are combined and that there is a perception in the minds of at least some stakeholders that there may be a conflict of interest between the WIC's stated role as a champion of current consumers and being a vital element in the drive for the water industry's long term efficiency.

The statutory duty of the Water Industry Commissioner for Scotland is to promote the interests of customers. Our principal weapon in promoting customer interests is to challenge the industry to improve its efficiency and to improve its level of service. The remit of the Office does not extend to supporting the interests of one group of customers when this would disadvantage others.

Throughout the regulated industries, the recognition of the potential conflict of interest between regulator and 'customer champion' to which the Committee seems to refer has led to the creation of separate customer bodies such as Energywatch, Postwatch, Rail Passengers' Council, WaterVoice and, in Scotland, the Water Customer Consultation Panels (WCCPs). We welcomed the creation of the WCCPs as it brings clarity to the role of promoting customer views and the representation of particular customer groups.

87. The current WIC told the Committee that a subsequent WIC may take a wholly different approach to providing advice on a charging structure. This is not conducive to long term planning for the industry, continuity of the office and neither does it display much thought to the representative nature of the WIC in making advice.

The nature of our role is to promote the interests of all customers now and in the future. WICS does not have a representative role; the WCCPS has a duty to represent the views of customers.

88. The Committee believes that an improved structure and support for the WIC is needed to ensure independent regulation and transparency across the industry. Modelled on some of the English and UK regulators, an

Office of the Water Industry Commissioner, including a non executive membership, could provide greater accountability and continuity for the Scottish water industry. Consideration should be given to whether certain decisions should be taken by the WIC in the context of advice from Ministers rather than the reverse.

We agree. We have been advocating for some time that, in the interests of customers, the water industry in Scotland should be regulated in a way that is more transparent and accountable, consistent with UK regulatory policy.

129. When the WIC was before the Committee, he implied that his financial limits were not particularly stringent in the light of what the English regulator did and in the light of the sorts of ratios that were achieved by water companies in the commercial sector in England and Wales. However, there was concern expressed by members of the Committee that the basis of comparison appeared to be different and therefore the Committee sought clarification from the WIC about the basis of comparison between financial ratio targets set in Scotland compared with those in England and Wales and found that there were very considerable differences between the bases on which these targets were calculated, invalidating the comparisons which had been suggested. In a letter to the Committee dated 27 February 2004, ACL highlighted that the basis used for Scotland is "revenue – less operating expenditure". Whilst broad financial ratio analyses can add clarity in making comparisons, they can be misleading where non-comparable bases are used to assess performance. The Committee found unacceptable the WIC's use of comparisons between Scotland and England and Wales without making clear the impact of different bases of calculation. Where different bases are used this should be fully explained to ensure transparency.

Having reviewed our oral evidence, we would agree that we should have been clearer about the basis of calculation of the respective ratios in Scotland and south of the border. The comparison was designed to indicate the ability of the industry in Scotland and south of the border to withstand shocks and, as such, it would not follow that the comparison was invalid.

Lessons learned from the Strategic Review of Charges 2002-06 and the response of stakeholders

The *Strategic Review of Charges 2002-06* highlighted a number of challenges:

- the need to improve efficiency;
- the potential threat of competition;
- the need to improve understanding of the condition and performance of assets; and
- the desirability of improving the financial sustainability of the industry.

The industry has responded well to all of these challenges and customers can look forward to much improved value for money as a result. Not surprisingly, some stakeholders have criticised the Review and some of the steps that have been taken to meet the challenges highlighted in our analysis.

The areas of criticism have included:

- the process of harmonising charges;
- the increase in fixed charges;
- the industry should have been allowed to borrow more;
- the efficiency targets were unreasonable;
- a lack of clarity in roles and responsibilities; and
- a lack of explanation.

In preparing the *Strategic Review of Charges 2006-10*, we are keen to learn lessons from the criticism that has been made. We do not expect that all stakeholders will like all of the contents of the next Review, but we are keen to improve the understanding of our role.

We believe that the *Strategic Review of Charges 2002-06* set a framework that was appropriate and in the interest of the customers of today and in the future. There has been a marked improvement in the industry's efficiency and in its understanding of its assets. We believe that the Review made a significant contribution to encouraging these improvements.

However, we do believe that there are a number of steps that we can take to improve the transparency, accountability and perceived proportionality of regulation.

Transparency

Improving process

In July we published *Our work in regulating the Scottish water industry: Setting out a clear framework for the Strategic Review of Charges 2006-10*. This described our work plan in some detail and highlighted all of the information that we collect from Scottish Water. It also gave information about the opportunities for stakeholders to learn more about our work and to ask questions.

Perhaps the most important part of the process begins with the publication of our draft advice/determination at the end of June next year. This will be followed by a period for representations about this answer from stakeholders. Our final advice/determination will be published at the end of November. These prices will take effect from the beginning of April 2006.

Better explaining our approach

We have arranged a large number of stakeholder information days. These half-day sessions will provide an opportunity for us to explain where we are in completing the Strategic Review of Charges. We hope that these sessions will also provide an opportunity for

stakeholders to raise their concerns or issues with us. We will respond to all such issues raised with us at a stakeholder information day.

Ensuring that stakeholders can understand the answer

There are three important ways in which we can ensure that stakeholders can understand the answer. Publishing all of the key inputs to the Review will be important. However, we will also endeavour to present the answer in a way that will allow stakeholders to understand what the answer means for them and for customers as a whole. We will also outline our reasoning and reference the evidence upon which we have relied to come to our answer.

We also note comments from some commentators that they found that our reasoning in the last Strategic Review of Charges was not complete. The next Strategic Review of Charges will provide sufficient information for all of the major findings of the Review to be replicated.

Providing opportunities for comment

There are three main ways in which we will provide stakeholders with an opportunity to comment. These are the stakeholder information days; the publication of our proposed methodology; and the period for representations after the publication of the draft advice/determination. Each of these will play a valuable role in allowing us to hear the views of stakeholders. We would encourage stakeholders to use these opportunities.

Accountability

Explaining the role of this office and other stakeholders

We believe that the Scottish Executive's proposals to strengthen the regulatory framework in Scotland will help improve both actual and perceived accountability. The establishment of a Commission should depersonalise regulation – a Commission arriving at a joint decision is always likely to be considered more accountable than an individual with a similar power.

The proposal to give the Commission the power to decide prices subject to ministerial guidance is welcome. This will ensure that authority and responsibility are aligned.

Proportionality

There has been a concern from some quarters (principally Scottish Water in its first year and the trades' unions) that our analysis lacked proportionality. The assertion was that we had adopted regulatory tools from south of the border and blindly applied these in Scotland, taking little or no account of the maturity, geography and asset base or of the public sector nature of the water industry in Scotland. Similarly there was a concern about how quickly we asked Scottish Water to narrow the efficiency gap.

We did explain our method for assessing how quickly Scottish Water should close the efficiency gap in some detail. Looking back, it may also have been helpful to re-emphasise the importance of spend to save in making our rate of catch-up less demanding.

In the *Strategic Review of Charges 2006-10*, we will pay particular attention to issues around comparability of companies, costs and levels of service. We will seek to set targets that are proportionate and take full account of factors that would both increase or reduce the targets.

Powers of determination

The Water Services etc (Scotland) Bill, introduced in June 2004, proposes a number of important changes to the regulatory framework. Its objective is to strengthen the regulatory framework for the water industry, and to ensure that there is a robust and transparent regime that operates in the interests of all customers. The Bill includes measures to improve the accountability and transparency of the regulator, including replacing the current individual Water Industry Commissioner with a body corporate, the Water Industry Commission for Scotland. The Bill then goes on to give the Commission powers of determination over Scottish Water's charges.

This 'power of determination' is a duty on the regulator to set prices. The Commission will operate subject to ministerial guidance. There are also proposals to allow

Scottish Water a right of appeal against the Commission's decisions to the UK Competition Commission.

The Competition Commission is an independent public body with the technical, economic and legal expertise to adjudicate in disputes between companies and their regulators. Its involvement helps to ensure that the charge setting process, carried out in the knowledge of a possible referral, is robust and transparent. If a case is referred to them, their decision will be binding. This check also ensures that regulators' decisions are subject to appropriate expert scrutiny.

We believe that this proposed right of appeal for Scottish Water would ensure that any challenges to regulatory decisions could be assessed in an objective and independent way.

Stakeholders could also seek a judicial review of the regulator's decisions. In principle, the purpose of judicial review is to guard against abuse of position by ensuring that the powers and duties of government and other public bodies are exercised consistently and within their legal bounds.

Effective regulation is in the interests of both customers and industry stakeholders. The creation of a Water Industry Commission for Scotland to take collective responsibility for the Commissioner's functions is in line with the restructuring proposed for the England and Wales water regulator. It is also consistent with the Board structures already established for other regulators. Like other sectors, the Commission will benefit from a high level of relevant experience from its future non-executive members.

The proposals regarding the introduction of powers of determination contain some material differences from the equivalent powers in England and Wales. From the standpoint of customers, the most significant difference involves Scottish Water's ability to borrow money. In most other regulated sectors, companies are freely able to access debt, subject only to conditions in the debt markets. Most other regulators do not have to adjust prices to take account of constraints on new borrowing.

The current proposals for Scotland would mean that Scottish Water is still subject to public expenditure limits. It is possible that in the future, it may be prudent for Scottish Water to borrow more than Ministers may be able to allocate in public expenditure. This would lead to an increase in customer charges beyond that decided in the relevant Strategic Review of Charges.

Core and non-core services

In the Water Industry (Scotland) Act 2002 our remit was changed to cover only Scottish Water's core activities and customers. The *Strategic Review of Charges 2006-10* will therefore establish the funding requirements for the core business of Scottish Water – the provision of water and waste water services in Scotland. The targets will not include funding for any non-core activities such as providing domestic plumbing services or delivering services beyond Scotland.

We believe that this separation of core and non-core business is in the customer interest.

In the *Strategic Review of Charges 2002-06* we had reviewed the experience of the privatised water and sewerage companies in England and Wales in generating additional sources of business from non-core activities. We also looked at the development of non-core activities in Scotland and their success or otherwise. We concluded that investment in new business by Scottish Water would need to be approached very cautiously.

The financing for any new ventures in Scotland, whether a small opportunity for a start-up with potential for organic growth, or an acquisition, ultimately has to be obtained from customers of the core business or from the taxpayer. Our view was that commercial opportunities should be carefully assessed, because even if the venture appeared to generate a return relatively quickly, there may be hidden costs (such as costs to exit the business), which could adversely impact on customers' bills in the future. There is also a risk that senior management spend an undue amount of time on the newer activities.

The Water Industry Act 1991¹² sets out the duties, rights and powers of the companies in England and Wales. They have a duty to provide water and sewerage services but the legislation does not define exactly the limits on or extent of the core business. In addition to the legislation, companies in England and Wales operate under licence.

This requires that Ofwat has a view on what forms the core business. Its approach is set out in its Regulatory Accounting Guidelines. We expect to draw heavily on Ofwat's work as we seek to ensure that there is a detailed definition of core activities.

In order to ensure that we promote the interests of customers of the core business, we will have to take a number of steps.

- Clearly define core activities;
- Establish a set of rules governing transfer pricing between the core and non-core activities; and
- Ensure that reporting is consistent with these definitions and rules and that this reporting is subject to rigorous monitoring and audit.

We have begun work on introducing regulatory accounts for Scottish Water. Regulatory accounts use standards, breakdowns and definitions designed to allow the regulator to fulfil his functions. They are used in most regulated utilities in the UK. These regulatory accounts will ensure that we are able to monitor effectively the separation of core and non-core activities.

An important area of work in introducing regulatory accounts will be the definition of transfer pricing rules. We would again expect that these rules would be broadly similar to those used by Ofwat.

Introduction of a framework for retail competition

An important consideration in formulating our proposals for the *Strategic Review of Charges 2006-10* will be the

possible impact of the proposed framework for retail competition.

The Water Services etc (Scotland) Bill includes provisions requiring the Water Industry Commission to introduce and administer a regime to license retail competition for 'non-household' (business and commercial) customers. Subject to the Scottish Parliament approving these provisions we propose that the licensing regime should be in place in Scotland by April 2008.

Prior to that date, we expect that the Scottish Executive will require Scottish Water to establish a subsidiary to manage its 'non-household' retail activities, which the Commission will license from the outset. In these circumstances, we expect that retail competition will impact the whole of the period covered by the next Strategic Review of Charges.

Our analysis suggested that there were three principal risks faced by the water industry in Scotland as a result of the Competition Act.

- It was clear that the industry needed to improve its efficiency and allocate its costs accurately;
- We also believed that it would be better to establish a clear framework for how competition would work in the Scottish water industry. Inaccurate cost allocation or inefficiency represented a risk because it could lead a customer or a supplier to accuse Scottish Water of breaching the prohibitions under the Act; and
- Likewise, we considered that a framework, which made it clear what Scottish Water was allowed to do and clarified the policy position on environmental and public health protection, could also reduce the risk of a challenge under the Act.

We will set price limits for both wholesale and retail elements of the business that are consistent with our overall aim of minimising costs to customers while ensuring the long-term financial viability of the industry.

¹² Amended by the Competition and Service (Utilities) Act 1992.

Trade effluent

Another development that will potentially impact on the next Strategic Review of Charges is the proposed change to the regulation of trade effluent charges. To date, tariffs for trade effluent have not been included in Scottish Water's scheme of charges and we have not played any role in regulating them. Instead, Scottish Water, exercising powers under section 29(3)(j) of the Sewerage (Scotland) Act 1968 has set these charges. In practice this has meant that the total amount raised from customers in trade effluent charges has been limited to the difference between the agreed revenue cap and the amount raised from the tariffs approved in the scheme of charges.

The provisions of the Water Services etc (Scotland) Bill 2004 provide for the Water Industry Commission to determine charges for all of Scottish Water's core services. As trade effluent is a core activity of Scottish Water, trade effluent charges are within these provisions. Consistent with that approach, the Bill provides for the repeal of section 29(3)(j) of the Sewerage (Scotland) Act 1968, thereby removing Scottish Water's power to set trade effluent charges separately.

There are three types of waste water: surface water draining to sewers, foul sewage and trade effluent.

Surface water refers to the rainwater that drains from roofs, yards, pavements, roads and so on.

Foul sewage refers to waste water (either domestic or non-domestic customers) from toilets and washing facilities (sinks, wash basins, showers, baths, etc).

Trade effluent is liquid waste from industrial or other commercial activity. It can cover a wide variety of liquid waste. Trade effluent is more difficult to treat and can represent a hazard. Businesses must have the consent of the sewerage company before discharging trade effluent into public sewers.

Paying for trade effluent

Historically, trade effluent charges in the UK were based on the volume of the discharge. In 1976, the National

Water Council and the Confederation of British Industry agreed the Mogden formula as a basis for trade effluent charges. This formula sought to increase the cost-reflectivity of the charges that were made for the treatment of trade effluent. The formula sets a higher charge for more concentrated effluent that will require a higher level of treatment.

As part of the *Strategic Review of Charges 2006-10*, we will seek to consult with trade effluent customers, appropriate representative bodies and Scottish Water about the appropriate way to regulate trade effluent charges as part of the determination of charges that we will be required to make.

Business plans

Customers and other stakeholders are entitled to expect Scottish Water to have well-developed, sound and clear plans for the business going forward. We require a clear business plan to inform our Strategic Review.

A business plan is a company or organisation's statement of its strategy for the future. It should present clearly its forecast of revenue and costs. A good business plan should reflect the circumstances of the business. The water industry is a long-term business. It has to look well into the future in order to ensure that this essential service will be available for future generations and at an affordable cost. It needs to plan to deal with long-term demographic, social, economic and other trends.

In order to inform our analysis of revenue, we have asked Scottish Water to provide us with a business plan. The business plan is an important opportunity for Scottish Water to influence the outcome of the Strategic Review of Charges.

In England and Wales, Ofwat requires the companies to submit detailed business plans. We have introduced a similar business plan requirement in Scotland. Our requirements are broadly similar but we have adapted them to the Scottish context.

Scottish Water will be required to submit a first draft business plan and a second draft business plan to us and to the Scottish Executive. The process for each of

these submissions is essentially the same. The first draft business plan will enable us to do much of the preparatory work for the *Strategic Review of Charges 2006-10*. The second draft business plan will allow us to draw our conclusions on prices for the draft advice/determination of charges.

We expect Scottish Water to submit a draft business plan that contains a complete statement of its strategy. Our review will assess whether:

- the plan sets out a strategy consistent with the expectations on Scottish Water;
- the strategy has taken account of costs and benefits and considered possible risks;
- the plan shows a clear relationship between what is required of Scottish Water by legislation, guidance and stakeholders and its outputs;
- the outputs are clear, defined and measurable;
- the information is robust and consistent with our guidance on the business plan.

We will work with Scottish Water to ensure that the business plan meets our needs and can be used to inform the price setting process. We will require Scottish Water to publish at least a summary version of the first draft business plan and both a summary and full version of the second draft business plan. The publication of this plan and in particular the detailed investment programme will be important in reassuring customers that they will receive value for money.

Reporters

Successful regulation relies on high-quality information and analysis. This is especially true for the Strategic Review process where we will place high reliance on the accuracy of information provided to us by Scottish Water.

The agreement between this Office, Scottish Water and the Scottish Executive on the ten principles included the introduction of a Reporter.

Principle 4

“A Reporter of regulatory information will be appointed as soon as practicable. The Reporter will operate in a fashion similar to Reporters in England and Wales. The Reporter should be appointed by the Commissioner and would be chosen from amongst persons that have served at least three years as an Ofwat-named Reporter. The Executive will meet the cost of the Reporter”

In England and Wales it is water industry practice for Ofwat to use a consultant engineer (known as a Reporter) to help verify a company's return. The Reporter audits the information provided to the regulator by the company and highlights any issues or inaccuracies. We appointed a Reporter for the water industry in Scotland in December 2003.

The regulatory Reporter is Mr. David Arnell¹³ of Black and Veatch Consulting. We will request the Reporter to review all aspects of Scottish Water's information returns. This will include the audit of both Scottish Water's annual regulatory return and its business plan. In particular, we will ask the Reporter to review the proposed investment programme to ensure that Scottish Water's investment plans are robust. Such scrutiny has played an important role in improving the quality and reliability of information provided to Ofwat by the companies in England and Wales.

There were four reasons why we wished to appoint a Reporter.

- There was a need for an independent assessment of the quality and reliability of information provided by Scottish Water.
- We believed that a Reporter could assist in accelerating the improvement in information quality in Scotland.
- We believed that a Reporter could help Scottish Water ensure that proper processes for collecting, storing and using information were established.

¹³ Mr Arnell is also the Reporter for Northumbrian Water Services Ltd.

- We believed that a Reporter could assist us in defining 'core' and 'non-core' activities and ensuring that the 'retail'/'wholesale' split was robust.

Conclusion

In the last five years we have established a strong foundation for regulation of the water industry in Scotland. Within this framework, Scottish Water has already reduced its operating costs by some 20% and, by the end of the current Review period, we expect that it will have reduced operating costs by £145 million in real terms. Customers' bills will be some 15% lower than they would otherwise have been as a result.

We recognise that there are lessons that we can learn from the first full Strategic Review of Charges. This information and consultation document is the second in a series of five such publications that will explain our proposed approach to the next Review. Our approach draws on the Better Regulation Task Force principles of transparency, accountability, proportionality, consistency and targeting. We would very much welcome the views of stakeholders on our proposed work plan or approach. These can be sent to:

Katherine Russell
The Water Industry Commissioner for Scotland,
Ochil House
Springkerse Business Park
Stirling
FK7 7XE

or by email to
SRMethodology@watercommissioner.co.uk

The final date for comments is 29 October 2004.

Chapter 3

The calculation of prices

Introduction

We are committed to the principles of the Better Regulation Task Force: transparency, accountability, proportionality, consistency and targeting. Our approach to this second full Strategic Review of Charges covering the period from 2006-10 takes full account of these principles. In this third volume we discuss how we propose to calculate the prices that customers will have to pay in the next regulatory control period. We have identified a number of questions for consultation. These questions are set out at the end of the relevant chapters and are reproduced under chapter headings at the end of this Executive Summary. All responses to this consultation should be received by 31 October 2004. These should be sent to :

Katherine Russell
Water Industry Commissioner for Scotland
Ochil House
Springkerse Business Park
Stirling FK7 7XE

or by email to :

SRCmethodology@watercommissioner.co.uk

We will publish a summary of responses, and our conclusions, on our website www.watercommissioner.co.uk on 19 November 2004.

For many customers of water and sewerage services, price is the single most important issue. This volume therefore examines:

- the costs that have to be recovered by Scottish Water;
- the way prices are calculated;
- how adjustments to prices are made when circumstances change; and
- how financial risk is managed in the public sector.

Where costs are incurred

Rain water may well fall from the sky, but turning that raw water into a reliable, high-quality water and sewerage service is a costly and complex operation.

Treating water and transporting it through pipes to customers is asset intensive – there are more than 20 metres of water main for every household in Scotland. According to Scottish Water's 2003 regulatory return, it would cost some £32 billion to replace all of the water industry's assets in Scotland. This is more than £6,000 for every person in Scotland.

Customers, however, are not primarily concerned with how the service is delivered or the assets that are employed. They want a reliable and high-quality service to be available on demand. In particular, they want to be assured that the service they receive for the amount they pay represents value for money.

The Scottish Executive's consultation Paying for water services 2006-10

In June 2004 the Scottish Executive launched a consultation on the principles of charging for water. The consultation was prompted by the negative reaction of some customers to the introduction of broadly cost-reflective charging (including higher standing charges) and the harmonisation of charges across Scotland. Although this benefited many customers (households in the North, and properties with higher rateable values in the North and lower rateable values in the East), a large number of small business customers who did not use much water saw significant percentage increases in their charges and as a result were critical of the changes.

The Executive's proposals in *'Paying for water services 2006-10'* are presented in two sections: 'Proposed principles of charging' and the 'Application of principles'. The consultation makes proposals on the principles of charging in four areas:

- **Charging for services:** The Scottish Executive suggests that, subject to safeguards, customers should pay for the service they receive;

- **Harmonised charges:** The Executive believes that, since Scottish Water provides services on a national basis, it is right that customers should pay for those services on a consistent basis throughout the country;
- **Cost reflectivity:** The Executive suggests that charges for similar types of customer should broadly reflect both the fixed and variable costs of supplying those customers (subject to the principles of harmonisation and affordability); and
- **Making changes to charging structures:** The Executive proposes to gradually introduce changes in tariffs over a number of years.

The consultation also considers the application of the principles of charging. The issues it addresses include:

- **Cross subsidies:** A cross subsidy exists when one group of customers pays more (in percentage terms) relative to their cost of supply than another group of customers. The Executive differentiates between desirable cross subsidies (resulting from the policy to harmonise charges across Scotland or to link household charges to Council Tax bands) and unintended cross subsidies. The Executive has commissioned work to understand the nature and extent of any unintended cross subsidies. In the consultation, the Executive also seeks views on how quickly any such cross subsidies should be unwound;
- **Household charging:** The Executive proposes to discontinue the current system of discounts and to use the proceeds to provide more targeted support to those in receipt of Council Tax benefit;
- **Non-household charging:** The Executive proposes to introduce new methods of charging for unmeasured customers and for surface and property drainage in the 2010-14 regulatory control period;
- **The balance between charging and borrowing:** The Executive proposes to keep the total level of borrowing by Scottish Water broadly constant in real terms; and

- **Funding expansion of the public networks:** The Executive sets out proposals that will share the cost of growth in the network between existing and future customers.

Our response to the consultation

We agree with the principles of charging proposed by the Scottish Executive. The first three of these principles are fully consistent with the principles that we applied at the time of the last Strategic Review of Charges. On the proposals for making changes to charging structures we would note that there is no easy way to implement these changes. While we recognise that it is not desirable to increase bills sharply, we are also aware that introducing changes more slowly requires those who are currently paying more than their fair share to continue to pay (at least) a little more in the interim. We regard this as a political question and would welcome clear guidance from Ministers.

Depreciation

The effectiveness and value of assets declines over time and customers should bear these costs as they receive the benefit from use of the assets. Although effective asset management can help to reduce costs, asset replacement costs will continue to have a major impact on customers' bills.

The water and sewerage industry has two broad types of asset. These are termed infrastructure (essentially the water mains and sewers) and non-infrastructure (treatment plants, offices, vans, computers, etc). From a regulatory point of view, the depreciation policy of the water and sewerage business has to strike a balance between current and future customers. We therefore allow for an appropriate depreciation charge to be recovered from customers' charges. There are two types of depreciation charge: a standard depreciation charge on the non-infrastructure and an infrastructure renewals charge.

Infrastructure renewals charge

Infrastructure assets such as sewers and water mains usually have very long lives. It is particularly difficult to

assess these lives accurately. This is because different types of construction (each with a different expected life) have been interconnected throughout the network. For that reason we rely on the portfolio effect¹⁴ and treat the whole infrastructure network as a single system. The complete asset will never become obsolete or require replacement at any one time; instead, it is replaced in parts as different elements come to the end of their useful lives.

Traditional methods of depreciation for discrete assets, which have observable discrete asset lives, do not work. To overcome the problem, the industry has introduced infrastructure renewals accounting. Under infrastructure renewals accounting, an infrastructure renewal charge is charged to a company's revenue each year. The infrastructure renewal charge is calculated as the average of the forecast capital expenditure on the infrastructure assets over the next 15-20 years.

Non-infrastructure depreciation

We propose to use the same approach to non-infrastructure depreciation as Ofwat uses for the water and sewerage companies in England and Wales. The depreciation charge will be calculated using the straight-line method. We believe that current cost accounting using the Modern Equivalent Asset (MEA) valuation for a fixed asset is the most appropriate for regulatory purposes. This approach ensures that:

- customers bear reasonable costs for the use of assets;
- Scottish Water is fairly remunerated for its capital expenditure; and
- Scottish Water is provided with the incentive to invest in new technology and more cost-effective assets.

These assets will be grouped into five categories:

- very short (assets having a life of up to five years);

- short (assets having a life of six to 15 years);
- medium (assets having a life of 16 to 30 years);
- medium/long (assets having a life of 31 to 50 years); and
- long (assets having a life exceeding 50 years).

The management of financial risk in the public sector

Risk management is the process of identifying, evaluating and responding to risks. Water and sewerage businesses are exposed to operational, legal and asset risks that could affect their compliance with public health or environmental standards and to financing risks. In the *Strategic Review of Charges 2006-10* we will seek to minimise the exposure of Scottish Water's customers to these risks. One of the main ways in which we can reduce customers' exposure to risk in the public sector model is to adopt the Regulatory Capital Value (RCV) approach to price setting.

We are also keen to ensure that there are effective controls on access to borrowing. We have therefore commissioned a report from ING Barings on the privatised companies' access to debt. If there are no such controls, the incentives to achieve efficiency targets on time are reduced.

We propose to extend our risk analysis to include the financial ratios that we target in the financial model.

Managing financial risk in the private and public sectors

The purpose of regulation is to seek to ensure that monopoly businesses act in the customer interest. In the private sector, the regulator seeks to establish a balance between the interests of customers and those of finance providers. In doing so, it is the regulator's duty to ensure that an efficient business can fund its operations. In the public sector, the regulator focuses on ensuring that customers receive a value for money service, and on the

¹⁴ The portfolio effect is discussed in 'Principles of Corporate Finance' by Brealey and Myers. Please reference the seventh international edition from page 187 onwards.

delivery of environmental, public health and government policy objectives. These objectives apply over the short, medium and long term.

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

A properly tight budgetary constraint will focus management attention on delivering ongoing improvements in value for money to customers.

Other differences in financial risk

The private sector cost of capital is higher than Scottish Water's cost of debt. Ofwat has recently set a nominal, pre-tax cost of capital of 8.3% [5.1%, real, post-tax]. This compares with Scottish Water's average new borrowing rate of just over 4% nominal pre-tax. Indeed, shareholders of the privatised companies can improve their return further by ensuring that the company performs better than the targets set by the regulator. However, shareholders do also have to absorb risks that are currently borne by the customers of Scottish Water. These would include the costs of any external shocks such as the drought in summer 1995.

In the event of such a shock or underperformance by the business (whether caused by management or external operational factors) a private utility can:

- withhold dividend payments to shareholders;
- seek a rights issue; and
- obtain debt in the private markets.

Private utilities do not have the easy option of increasing charges to customers. The presence of private equity acts as a significant 'shock absorber', which protects customers of the water companies in England and Wales. This is because prices set by Ofwat will not

normally be influenced by a change in borrowing by an individual company.

The Glas Cymru model

It is not necessary to adopt an equity based or private sector model in order to manage financial risk. Welsh Water, for example, has established a structure that protects customers from financial risk, without a traditional shareholder acting as a shock absorber. Glas Cymru is a not-for-profit company limited by guarantee which is wholly debt financed. Glas Cymru has no shareholders. In this case the risk is borne by the providers of the debt finance.

If there is an unforeseen shock, which could have been avoided or limited through proper management, customers will not suffer because Ofwat is under no obligation to increase the cash value of the return on capital allowed to Welsh Water.

Current situation for Scottish Water

In contrast, if Scottish Water is faced with an unforeseen shock, it must either:

- seek unplanned public expenditure in the form of a loan; or
- increase charges to customers immediately.

Customers are currently particularly exposed to any shortfall in Scottish Water's performance against targets. This is because there are no transparent incentives to perform and its budgetary constraints are not truly tight. Scottish Water can seek to use contingency margins within public expenditure limits and the cost of this extra borrowing would be passed on to customers.

We believe that Scottish Water's customers are entitled to a similar level of protection from shocks as customers south of the border. We therefore propose to set prices on the assumption that Scottish Water has achieved both its operating and capital efficiency targets and has delivered the capital programme in full. We propose to

make adjustments to reflect any shortfall in performance in order to ensure that customers are not disadvantaged.

How we propose to determine charges for the 2006-10 period

The role of a regulator is to set prices that are sufficiently high – but no higher – to ensure the sustainable delivery of the desired level of service. We will therefore scrutinise costs carefully.

The costs faced by customers can be categorised into three main areas:

- running costs;
- costs associated with the use of existing and new assets; and
- costs of public private partnership (PPP) contracts.

We use a financial model to establish an appropriate level of revenue that is consistent with:

- meeting these costs; and
- ensuring that Scottish Water should be able to deliver the level of service to customers that will be defined by the Quality and Standards process¹⁵.

This model allows us to ensure that an appropriate balance is struck between current and future customers. We will also seek to ensure that customers in general are protected from unnecessary fluctuations in their charges.

In calculating prices for customers, we use a tariff basket to divide the identified revenue requirement between customer groups. The detail of how much each customer group will pay will depend on the result of the Scottish Executive's consultation, *'Paying for water services 2006-10'*.

The RCV method of price setting

At this review we are proposing to make some changes to our approach to price setting. We propose to introduce a Regulatory Capital Value (RCV) for Scottish Water. Scottish Water will receive an appropriate rate of return on this RCV. Efficient investment in new assets will be added to the RCV. Depreciation (reflecting the costs of using existing assets) will reduce the RCV.

These changes are limited to the approach to meeting the costs of new and existing assets. We do not believe that this revised approach has any immediate material impact on the prices faced by customers, on the resources available to Scottish Water, or on the implications for public expenditure. The changes are designed principally to allow greater transparency. They bring the approach to price setting for Scottish Water into line with that for the English and Welsh water and UK energy sectors. As such, we will be able to make more direct comparisons in financial ratios than was previously possible.

The RCV is a proxy for the current value of Scottish Water's above-ground asset base. This value will change over time to reflect the ageing of assets (the cost of which is recognised by the infrastructure renewals and depreciation charges) and investment in new assets.

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

The revenue that Scottish Water should be allowed is calculated as follows:

Return allowed on the Regulatory Capital Value + allowable operating costs + depreciation on non-infrastructure assets + the infrastructure Renewals Charge (IRC) + the costs of PPP contracts.

¹⁵ See the Scottish Executive's consultation document, *'Investing in water services 2006-10'*.

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

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

We will allow for asset costs in two ways, that is the allowed cash return on the RCV and an allowance for depreciation. The allowance for depreciation and the Infrastructure Renewal Charge ensures that sufficient funds are available to replace assets that are at the end of their useful lives.

The PPP contracts effectively swapped initial capital costs, financing and maintenance costs and operating costs over the life of an asset for a series of annual payments. We propose to scrutinise these costs carefully. Our analysis of the appropriate level of these PPP costs will be allowed in our calculation of revenue.

One important feature of the regulatory capital method of price setting is that we do not have to take decisions about how much extra borrowing Scottish Water should seek. The method of financing (whether from retained surplus or from new debt) will not have an impact on the price paid by customers. However, if debt increases as a proportion of the RCV, future customers will face either higher prices or a service that is less able to absorb operational or legislative shocks.

Monitoring of the RCV and the ratio of total debt to the RCV should therefore provide stakeholders with a useful indicator of the financial performance of the water industry in Scotland. Stakeholders can reasonably expect the RCV to increase in line with the profile that is established at the start of the regulatory period. Smaller increases would suggest that the capital programme is making less progress than was expected at the start of

the regulatory period; larger increases would suggest that better progress had been made.

If the capital programme is on target, the ratio of debt to RCV should indicate whether Scottish Water is making sufficient progress towards the efficiency targets that we set in the *Strategic Review of Charges 2006-10*. We propose to use our performance reports to monitor these financial indicators.

The introduction of price caps

In this Review, we also propose to determine a series of price caps rather than a general cap on revenue. We believe that the introduction of a price cap is in the general interest of customers. A price cap largely insulates customers from the impact of changes in the customer base or volumes of consumption during a regulatory period. We will translate the required revenue into a series of price caps for our tariff baskets. The weightings of these tariff baskets will reflect the guidance that we receive from Ministers as a result of the principles of charging consultation.

A customer will be better placed to understand the maximum price that they are likely to have to pay by looking at their use of the water and sewerage service and the price cap for the relevant tariff basket.

The introduction of regulatory accounts

In the last Strategic Review of Charges, we commented on the advantages to be gained from a proper accounting and legal separation between Scottish Water's core and non-core activities. We were therefore pleased when the *Water Industry (Scotland) Act 2002* limited the remit of this Office to promoting the interest of customers of the core business. This will require us to be able to distinguish between the core and non-core functions of Scottish Water. The current *Water Services (Scotland) Bill* would also require us to differentiate between Scottish Water's wholesale and retail functions.

Scottish Water's statutory accounts are not sufficient to provide the information that we now require. In particular, they only detail the financial performance of

Scottish Water as a whole and, as such, are unable to provide a specific breakdown of costs by activity.

Other regulators have overcome these limitations by introducing a set of parallel, regulatory accounts. These accounts are tailored to provide the specific information required for effective regulation. We propose to adopt the practice of other regulators by asking Scottish Water to complete regulatory accounts.

In particular we propose to adopt Ofwat’s regulatory accounting guidelines (RAGs) as the basis for our Regulatory Accounting Guidelines. Where we amend or develop these guidelines for application in Scotland we will do so simply to ensure that they are fully consistent with Scottish Water’s statutory duties. However, in so doing, we will endeavour to ensure that they remain as consistent as possible with the original Ofwat guidelines. This will be important to our detailed comparison of the financial performance of the industry in Scotland.

Financial modelling

We have built a financial model to allow us to calculate the revenue that Scottish Water requires to carry out its core functions. There is also a tariff basket model, which translates the revenue collected from customers to the tariffs they will pay. Ernst and Young LLP has audited the financial model.

The model is constructed in Microsoft Excel© and consists of a series of linked spreadsheets. The model goes forward to March 2025. We have also developed a detailed user manual which will be available on our website.

Input information

We require robust and detailed information for the financial model. We provided Scottish Water with the input tables for the financial model as a part of the business plan guidance, which we issued in June 2004.

The model also contains financial assumptions, including information on interest rates and inflation

expectations. In the Strategic Review we propose to use two indexes to measure inflation, namely:

- the Consumer Price Index (CPI) for all non-asset costs; and
- the Construction Output Price Index (COP1), to assess the impact of increases in prices on investments.

Other proposed assumptions are outlined in Table 1 below:

Table 1: Other proposed assumptions in the financial model

Title	Assumption	Value
Trade debtors	Number of days	35
Stocks	Percentage of operating expenditure excluding PPP	2%
Prepayments and accrued income	Percentage of revenue	5%
Other debtors	Percentage of revenue	2%
Trade & capital creditors	Percentage of capital expenditure	17%
Accruals and deferred income	Percentage of operating expenditure including PPP	30%
Other creditors	Percentage of operating expenditure including PPP	7%

Financial ratios

One of the key considerations of our modelling is the financial sustainability of Scottish Water. The model will automatically calculate key financial ratios. Our proposed move to use the Regulatory Capital Value method of price setting will allow us to make direct comparisons of Scottish Water’s financial sustainability with that of the companies south of the border. We will compare Scottish Water’s financial ratios (as far as possible¹⁶) with those used by Ofwat in its last two price reviews.

Ofwat set out a list of the financial ratios that it had taken into account in setting price limits at the 1999 review in its report, ‘Final determination: Future water and sewerage charges 2000-05’. These ratios are shown in Table 2.

¹⁶ For example, comparisons using equity are unique to the private sector and account needs to be taken of the PFI contracts in Scotland.

Table 2: Ofwat's target ratios for 2000-05

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

In 'Future water and sewerage charges 2005-10: Draft limits', Ofwat outlined the financial indicators that it has used to set prices for the next regulatory period. Table 3 shows these ratios.

Table 3: Ofwat's draft target ratios for 2005-10

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

How we propose to use these ratios in the Strategic Review of Charges 2006-10

Where Ofwat has stated that a target is "around" a certain level, we assume that the ratio for Scottish Water should be within 25% of the target. We would change price limits to ensure that Scottish Water remains compliant with each of these ratios, except debt/RCV (leverage). This is because Scottish Water has no equity finance.

We also propose to publish the two debt payback period ratios and the cashflow to capital expenditure ratio that Ofwat used for the 2000-05 regulatory period. It would be desirable for Scottish Water to remain within these targets. However, we will not change price limits to ensure compliance with the targets for these ratios. This reflects the capital market's view that these ratios are

now outdated. We believe that it is useful to continue to monitor these ratios to ensure consistency in our approach to financial sustainability.

Setting an initial RCV

There are four broad approaches that regulators can use to establish the initial RCV of a regulated utility in the private sector:

- **An accounting approach.** The RCV takes into account the asset value of the company;
- **A market value approach.** The RCV adopts the value placed on the company by the financial markets;
- **A comparator approach.** The RCV is set through comparison with a similar company that has an RCV; and
- **A discounted cash flow approach.** The RCV is calculated by using financial valuation techniques.

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

However, there are precedents for the establishment of a RCV for a public sector organisation¹⁷. For example, in Australia regulators have tended to use asset based approaches. We could potentially set the RCV by one of four common asset based approaches:

- **Depreciated actual cost:** this approach is straightforward to implement but will tend to understate (possibly significantly) the replacement costs of assets;
- **Depreciated indexed historical cost:** this approach is certainly preferable to depreciated actual cost, but it does not take account of changes in technology;
- **Depreciated Optimised Replacement Cost (DORC):** this approach is theoretically the best asset based approach; however, it is very

¹⁷ See the Scottish Executive's consultation document, 'Investing in water services 2006-10'. Manchester Airport has a regulatory capital value set by the CAA.

information intensive and can be regarded as quite subjective; and

- **Modern equivalent asset value:** this approach has many of the advantages of DORC, but is less subjective as it does not try to assess the reductions in cost that could be achieved by optimising the design of the water and sewerage network.

A second option would be for us to use a comparator approach. This would have the advantage of being consistent with the approach Ofwat used to set the initial RCV of the water only companies. To use this approach, we would need to identify companies that are broadly comparable to Scottish Water. Two sets of information would need to be available for the comparator company:

- First, a financial measure that is also available for Scottish Water should be available for the comparator. This financial measure could be the book value of debt, the book value of fixed assets or the current cost accounting value of fixed assets; and
- Second, a financial measure that is relevant to estimation of the RCV should be available for the comparator. If the comparator were regulated and had an RCV this could be the RCV itself. If the comparator had no RCV it could be an equity value for the firm.

The water and sewerage companies in England and Wales would provide the most obvious comparators for Scottish Water. We believe that there are a number of ways that we could look to set an initial RCV for Scottish Water based on comparison with the companies south of the border.

The options would include setting the initial RCV for Scottish Water by making comparisons with:

- asset bases (in terms of both value and structure);
- non-infrastructure capital investment;
- Welsh Water's debt to RCV ratio;
- companies' funding costs to RCV ratio (ie debt and dividends); and

- assets relative to the type and number of customers served.

The options would also include comparing the factors outlined above historically with those for Scottish Water today. This would reflect the opportunity that the companies south of the border have had to transform their operations.

The final option that we propose to consider is the discounted cash flow method of asset valuation. We would use our financial model to calculate the current value of Scottish Water. We are not, however, optimistic about this approach as we believe that it would be difficult to establish an appropriate discount rate.

Setting the allowed rate of return

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

In the public sector the regulator cannot set the rate of return based on his observation of the cost of capital in the market. Scottish Water's cost of debt is set by Government. As a public sector organisation it has no contributed equity capital, although it does generate and reinvest trading surpluses.

The allowed rate of return is the rate of return that we believe Scottish Water requires to meet the objectives that have been set by Scottish Ministers. If we set the allowed rate of return at too low a level, there is a risk that Scottish Water would not have sufficient funds to meet its obligations. This could result in debt increasing to unsustainable levels. This would penalise future customers to the benefit of current customers. Alternatively, it could result in delays to the promised environmental, public health or customer service benefits. Customers would certainly pay lower charges if the rate of return was set too low, but they would also receive a poorer service.

If we set the allowed rate of return at too high a level, customers will pay more than they need to. This would act as a disincentive on management to achieve efficiency targets. Failure to achieve efficiency targets means that customers pay more than is necessary in the medium term. Alternatively, if efficiency targets were achieved in full the level of outstanding debt would decline significantly relative to the asset value of the company. This would penalise current customers to the benefit of future customers.

The weighted average cost of capital

The market value of a firm is equal to the market value of the equity plus the market value of the debt. The Weighted Average Cost of capital (WACC) is the overall cost of capital for a firm. It takes account of the capital structure of the firm (ie the market value of its debt and equity) and the rates of return it pays on both its debt and equity.

In order to calculate a WACC a regulator therefore has to decide an appropriate rate of return for both debt and equity. He also has to assign an appropriate market value to the debt and equity of the firm. His calculation of the rate of return is further complicated by both taxation and inflation.

Debt and equity are treated differently for tax purposes. Interest charges are an allowable expense for the purpose of corporation tax. The corporation tax advantages of debt are recognised in the post-tax Weighted Average Cost of Capital calculation. This is shown in Figure 1.

Figure 1: Post-tax Weighted Average Cost of Capital

$$WACC = \left[r_D^* \left(\frac{D \times (1-t)}{D + E} \right) \right] + \left[r_E^* \left(\frac{E}{D + E} \right) \right]$$

Where:
 r = return
 D = debt
 E = equity
 t = corporation tax rate

The investor is therefore concerned with the real rate of return – that is the return after having adjusted for the effect of inflation.

The formula for calculating the real rate of return is shown in Figure 2.

Figure 2: Formula for calculating the real rate of return

$$\text{Real rate of return} = \text{nominal rate of return} - \text{inflation rate}$$

It is important to differentiate between the real rate of return (the return after inflation) and the nominal rate of return (the return before account is taken of inflation).

Applicability of WACC to a Public Corporation

Assessing the WACC for a public corporation is problematic. This is because the regulator cannot easily observe costs of debt or equity and, moreover, estimating the market value of the organisation is difficult.

Setting an allowed rate of return for Scottish Water

Scottish Water does not borrow directly from the capital markets nor does it borrow at commercial rates. Scottish Water does generate surpluses and therefore has retained earnings, which it can invest to achieve the outputs set by Scottish Ministers. It does not currently pay dividends and therefore all of the surplus generated can be reinvested for the benefit of current and future customers. These retained earnings differ from retained earnings in the private sector in that they are not reinvested with the specific goal of generating increased surpluses in the future.

To set an allowed rate of return for Scottish Water based on the same principles used by the regulators of private sector utilities, we would need to estimate an allowed rate of return on debt and an allowed rate of return on 'customer retained earnings'. Scottish Water should be allowed to earn a return when it uses customer retained earnings as a source of funds.

Although it may seem feasible to estimate a WACC for Scottish Water, issues arise because Scottish Water does not have debt or equity that is publicly traded. We

are not therefore able to establish a market-based measure of equity or debt returns for Scottish Water in the way that we would for a private sector company.

The WACC approach is further complicated because regulators have tended to regard the RCV as a proxy for the enterprise value (market values of the debt plus the equity) of the regulated business. The market value of the equity is therefore equal to the RCV minus the outstanding net debt.

The market value of the equity would normally be estimated using the dividend growth model or calculating the NPV of future cash flows. The dividend growth model cannot be used because Scottish Water does not pay dividends. The NPV approach requires an appropriate discount rate to be established in order to discount cash flows that will occur in the future. However, it would be difficult to justify the use of a discount rate that is different from the allowed rate of return. The NPV approach cannot therefore be used since we need a market value to establish the allowed rate of return, but need an allowed rate of return to use the NPV method of establishing a market value. There are, however, four approaches that we could consider:

Ofwat's assessment of the allowed cost of capital

At each periodic review Ofwat establishes an allowed Weighted Average Cost of Capital for the water companies south of the border. Ofwat's current proposed allowed rate of return for the water and sewerage companies is 5.1% real and post-tax.

A possible approach for Scotland would be to use Ofwat's allowed rate of return. We believe that such an approach would not be in the customer interest. Most obviously, the cost of Scottish Water's debt (both the current overall cost and the cost of new debt) is lower than Ofwat's estimate of the cost of debt for the companies south of the border. This would suggest that Ofwat's WACC would significantly overestimate the appropriate rate of return for the water industry in Scotland.

Long-term average borrowing rates

A second possible approach for establishing an allowed rate of return for Scottish Water would be to apply an average of observed historic real borrowing costs. This would have the advantage that it is relatively straightforward to apply. If we were to use this method, we believe that it would not be appropriate to allow extra costs associated with embedded debt to be recovered from customers.

There would still be a potential issue about the rate of return that should be allowed on customer retained earnings. Retained surpluses represent an important source of funds for Scottish Water.

The Treasury Green Book¹⁸

The 2003 edition of the Green Book reduced the HM Treasury estimate of the appropriate discount rate for public sector projects to 3.5% real. However, HM Treasury did not update the 6% real estimate for the cost of capital included in the 1997 edition of the Green Book.

A third possible approach to setting the allowed rate of return for Scottish Water would be to take the discount rate of 3.5% real as the allowed rate of return. There are two advantages of this approach. It uses a rate of return that is established by Government and it should therefore be sufficient for Scottish Water to fund its efficient operation. Secondly, this approach could cover both the debt and customer retained earnings portions of the Regulatory Capital Value.

However, setting an allowed rate of return at 3.5% real would currently be quite significantly higher than the observed cost of new debt to Scottish Water. This could have the effect of encouraging Scottish Water to increase its borrowing and may delay the necessary improvements in efficiency. The effect of this could be reduced if we regarded the 3.5% real rate as the return pre-tax rather than post-tax.

¹⁸ 'The Green Book' Appraisal and Evaluation in Central Government, HMSO, 2003

Hybrid approach

A fourth potential approach would be to apply a modified version of the WACC approach. We would combine an observed real cost of debt with an estimate of an appropriate rate of return on the customer retained earnings (the equity portion of Scottish Water's RCV) in order to produce an allowed rate of return.

The future real rate of interest on debt for Scottish Water could be estimated as described above. We propose that the pre-tax allowed rate of return on the customer retained earnings should be set at the post-tax allowed rate of return for debt. In real terms this rate is likely to be low. Valuing customer retained earnings in this way will replicate within a public sector capital structure the equity buffer that protects customers south of the border from operational or legislative shocks¹⁹.

An additional advantage of this approach is that there would be no incentive for Scottish Water to seek to change its current ratio of debt to regulatory capital value. If the return on the customer retained earnings is greater than the return on debt, Scottish Water would have an incentive to pay down debt. In contrast, if the return on the customer retained earnings is lower than the return on debt, Scottish Water would have an incentive to take on more debt.

This approach should also help stakeholders to monitor Scottish Water's performance. The level of its outstanding debt relative to its RCV should be in line with the forecasts that are included in the Strategic Review of Charges. If the level of debt to RCV declines, either Scottish Water has outperformed its efficiency targets or it has not delivered its capital programme as planned. Conversely, if the level of debt relative to its RCV increases, Scottish Water is either ahead of schedule in delivering the capital programme or has underperformed relative to its efficiency targets.

We currently favour the hybrid WACC approach outlined above.

Depreciation and additions to the RCV

The value of the RCV changes over time to reflect efficient new investment and depreciation of existing assets. Since the RCV is central to the determination of Scottish Water's revenue requirement, it is important that the initial RCV that we establish continues to be representative of the value of its asset base.

Revenue requirement = operating costs + Public/Private Partnerships (PPP) + Infrastructure Renewals Charge (IRC) + depreciation + cash return on the regulatory capital value

Depreciation and additions play a role in this calculation through the impact they have on the RCV, and, in the case of depreciation, as a separate component of the revenue requirement.

Treatment of additions to the asset base

Additions affect the price cap by increasing the RCV. As the rate of return remains constant (it is a percentage of the RCV), any increase in the RCV increases the amount of return allowed in Scottish Water's revenue requirement, and hence increases prices.

The key role of the RCV in price setting is to reflect the value of the physical assets used to provide a service to customers. When Scottish Water makes an investment in its assets – be it simply to replace or maintain assets that have worn out, or to enhance the asset base – this should be reflected in an increase in the RCV. In increasing the RCV, we are ensuring that the return earned on total assets will increase in recognition of the investment made.

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

It is very important, however, that customers are only required to remunerate justifiable expenditure. We

¹⁹ This issue is discussed in detail in Chapter 4.

therefore need to ensure that only appropriate and efficiently procured capital investment is added to the RCV.

Treatment of depreciation

The role of depreciation is a little more complicated. It can affect prices in two ways:

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

Depreciation can therefore influence Scottish Water’s revenue requirement either directly, or indirectly (by affecting the level of return).

Rolling forward the RCV

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

Figure 3 outlines how the change in the RCV is calculated for each year of the regulatory control period.

Figure 3: Rolling forward the RCV

Closing RCV (previous year)
+
Indexation
+
Capital expenditure (excluding IRE)
+
Additions
Infrastructure renewals expenditure (IRE)
-
Infrastructure renewals charges (IRC)
-
Grants and contributions
-
Depreciation
-
Disposals
=
Closing RCV

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

Interim determinations and logging up and down

In Scotland, a Strategic Review of Charges is carried out every four years, while in England and Wales a price review is carried out every five years. The period of time between regulatory reviews is referred to as the regulatory control period. At a regulatory review, the regulator sets price caps or revenue caps for the next regulatory control period.

In order to set price caps or revenue caps, the regulator forecasts the costs that the regulated company will incur over the next regulatory control period, if it carries out its functions efficiently. The revenues recovered by the company must be sufficient to cover these costs.

Ofwat uses two mechanisms to adjust the regulatory price settlement in the event that assumptions made at the periodic review need to be revised. The first is an ‘interim determination of the price limit’, which takes place during a regulatory control period. The second is the approach of ‘logging up and down’ at a regulatory review.

The proposed change in the regulatory framework to create a Water Industry Commission with a power to determine prices will, we believe, make it necessary to introduce both the possibility of an interim determination and the logging up and down process. This will ensure that Scottish Water is properly able to finance its functions and can recover the costs of any unexpected expenditure that results from uncertainty rather than underperformance. We propose to introduce a similar framework to adjust prices in Scotland.

What are ‘interim determinations’?

An interim determination is a reconsideration of a firm’s price limits that is undertaken between formal price reviews. The reconsideration is carried out in the light of

a particular set of circumstances or factors that were not taken into account at the last review. Either the firm or the regulator may initiate an interim determination. If Ofwat knows that there is significant uncertainty about a particular area of the periodic review, it can notify an item. This allows either the regulator or the regulated company to revisit the price limit if better information becomes available. An example would be the rate at which households opt for meters. An example pertinent to Scotland may well be the split between the wholesale and retail businesses.

What is logging up and down?

Whereas an interim determination occurs between reviews, logging up and logging down is an adjustment that takes place at the end of the regulatory control period to reflect differences in cost from the original determination. Such differences will have an impact on prices only in the next regulatory period.

Price caps and tariff baskets

We propose to establish tariff baskets to cover the core services provided by Scottish Water. The use of tariff baskets will also help to ensure that the principles of charging determined by Scottish Ministers are applied in a transparent way. They will also bring the price setting process more into line with the other utility regulators in the UK, such as Ofgem and Ofwat.

The detail of the tariff baskets will be available on our website early in 2005. This will give customers better access to information about bills and will help strengthen the regulatory regime.

Table 4 presents a summary of Scottish Water's tariffs.

Table 4: Summary of tariffs

	Type of tariffs		
	Fixed £ per annum	Fixed – based on rateable value (pence per £ of RV)	Volumetric (pence per m ³)
WATER			
Unmetered domestic	✓		
Metered domestic	✓		✓
Unmetered non-domestic	✓	✓	
Metered non-domestic	✓		✓
SEWERAGE			
Unmetered domestic			
Wastewater (including foul and surface water drainage)	✓		
Metered domestic			
Sewage	✓		✓
Surface water drainage	✓		
Unmetered non-domestic			
Sewage	✓	✓	
Surface water drainage		✓	
Metered non-domestic			
Sewage	✓		✓
Surface water drainage		✓	
Trade effluent	✓		✓ ²⁰

A definition of tariff baskets

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

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

²⁰ Trade effluent is charged for using both volume and strength.

Table 5: The use of weighted average tariffs

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

The weighted average increase provides a reasonable indication of the impact on customers, as it takes account of the relative size of the impact from each tariff change. We would scrutinise very carefully any material divergence in tariff changes within a basket.

It is important to emphasise that changes in the current balance of tariff baskets will be made to reflect the outcome of the Scottish Executive's consultation, 'Paying for water services 2006-10' and the ministerial guidance which we will receive in January 2005.

Our proposed approach to tariff baskets

In England and Wales tariff baskets are defined in condition B of the companies' operating licences. Scottish Water's duties are set out in statute and there is no equivalent licensing regime in Scotland. We therefore propose to describe our proposed tariff baskets in detail in our *Strategic Review of Charges 2006-10*.

We propose that there should be eight or ten separate tariff basket items:

- domestic unmeasured water;
- domestic unmeasured wastewater;
- non-domestic unmeasured water;
- non-domestic unmeasured wastewater;
- measured water (possibly split 20mm connection and other);
- measured wastewater (possibly split 20mm connection and other);

- surface water drainage (excluding unmeasured domestic); and

- trade effluent.

We believe that it may be worth considering the introduction of two separate tariff baskets to include tariffs (except surface drainage) for customers with a standard metered connection. There are four principal reasons why we consider that this may be worthwhile:

- measured customers with a standard connection are more like households than other measured customers;
- monitoring prices for this group separately should help to ensure that their interests are properly protected in the event that Parliament approves the current Water Services (Scotland) Bill;
- it should be easier to reflect the outcome of the 'Paying for water services' consultation in the tariff basket weightings; and
- the extra tariff baskets should improve the predictability of prices for a large number of smaller businesses.

There are two principal reasons why we should restrict the number of tariff baskets to eight:

- Scottish Water would have less flexibility in managing the expectations of its business customers; and
- greater complexity is introduced to price setting.

On balance we believe that the advantages outweigh the two potential disbenefits.

Treatment of large customers

Larger customers in England and Wales can benefit either from an inset appointment or negotiation on price with their existing supplier. Ofwat considers that pricing arrangements for larger customers could significantly

distort tariff baskets and put at a disadvantage those who can neither benefit from competition nor negotiate.

Excluding large customers from the tariff basket has the effect that shareholders pay for these discounts.

In the public sector model in Scotland, the cost of any discount to one customer has to be paid by all other customers. Special agreements should only be entered into when everyone gains from the agreement. We would therefore propose that special agreements remain in the tariff basket.

Standard customers

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

A customer's bill will vary depending on the relative use of the services provided. For example, the bill for a domestic customer with no meter will be based on the Council Tax band of the property, whereas charges for a business customer with a meter will be based on:

- the size of the water connection;
- the amount of water consumed;
- an assumed size of the waste water connection;
- the assumed amount of waste water discharged; and
- the rateable value of their property (for draining surface water from the property).

The customer's bill will be the sum product of the relevant factors and the appropriate tariffs.

Scottish Water has more than approximately 140,00 non-domestic customers. These customers will each require a quite different mix of services from the water and sewerage undertaker, so the impact of tariff changes will impact on their total bills in different ways.

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

Table 6 shows the standard customer descriptions that we used in the *Strategic Review of Charges 2002-06*. It also shows the proposed new name for these customers for the *Strategic Review of Charges 2006-10*.

Table 6: Standard customers used at the 2002-06 Review

Name in 2002-06 Review	Proposed name for 2006-10	Water		Sewerage		
		Meters	Volume (m ³)	Meters	Volume (m ³)	RV
Newsagent	High Street newsagent	1 x 20 mm	30	1 x 20 mm	28.5	£5,000
Garage	Garage	1 x 20 mm	100	1 x 20 mm	95	£10,000
Restaurant	Large restaurant	1 x 20 mm	500	1 x 20 mm	475	£100,000
Commercial	Large office	1 x 25 mm	900	1 x 25 mm	855	£750,000
Retail	Retail group	2 x 20 mm 20 x 25 mm 1 x 35 mm	4,500	2 x 20 mm 20 x 25 mm 1 x 35 mm	4,275	£1,700,000
Food manufacturer 1	Food manufacturer 1	2 x 25 mm 1 x 80 mm	50,000	2 x 25 mm 1 x 80 mm	47,500	£100,000
Food manufacturer 2	Food manufacturer 2	2 x 25 mm 1 x 50 mm 1 x 100 mm	100,000	2 x 25 mm 1 x 50 mm 1 x 100 mm	95,000	£260,000
Manufacturing	Large manufacturer /pharmaceuticals	1 x 150 mm	175,000	1 x 150 mm	166,250	£1,225,000
Brewers	Brewers	2 x 25 mm 1 x 100 mm 1 x 150 mm	600,000	2 x 25 mm 1 x 100 mm 1 x 150 mm	150,000	£500,000

Unmeasured customers

Our 2001 set of standard customers did not include unmeasured customers who pay according to their rateable value. We therefore propose to include four unmeasured non-domestic customers in our list of standard customers, as shown in Table 7.

Table 7: Proposed additional standard unmeasured non-domestic customers

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

Measured customers

Our review of the customer information provided by Scottish Water suggests that metered customers are reasonably well represented within the existing standard customers. We therefore propose to add only four additional standard customers.

The proposed additions are outlined in Table 8.

Table 8: Proposed additional standard metered customers

Name	Water		Sewerage		
	Meters	Volume (m ³)	Meters	Volume (m ³)	Rateable value
Warehouse	1 x 20mm	10	1 x 20mm	9	£500
Large house	1 x 20mm	110	1 x 20mm	104	Band H
High School	1 x 25mm	2,000	1 x 25mm	1,900	£18,000
Hotel	1 x 50mm	15,000	1 x 50mm	14,250	£75,000

Standard trade effluent customers

It is more difficult to define standard trade effluent customers than it is to define water customers or customers who discharge standard-strength sewage. There are just over 2,000 customers in Scotland who have trade effluent agreements. They range from a small garage to a large petrochemical firm.

The six additional standard customers that we propose are shown in Table 9.

Table 9: Proposed additional standard trade effluent customers

Standard customer name	Volume m ³		Load kg		Average Strengths mg/l	
	Annual	Daily	Total suspended solids	Biological oxygen demand	Total suspended solids	Settled chemical oxygen demand
Bakery	200	0.55	0.5	0.75	575	1600
Clothing manufacturer	12000	32.9	1	1	20	300
Abattoir	90000	246.6	150	250	600	1500
Electronics Business	550000	1507	15	50	10	75
Printers	10000	27.4	5	40	100	2500
Distillery	150000	411.0	7	55	15	200

Method for setting retail and wholesale prices

The proposed competition framework would allow new entrants to obtain a licence to provide retail services to non-domestic customers. These new entrants would be retail specialists who would buy water and sewerage services wholesale from Scottish Water. To determine appropriate wholesale prices we would first need to define the wholesale and retail activities.

Defining the retail and wholesale activities

Wholesale is the selling of goods or services to merchants, usually in large quantities and for resale to consumers. Retail is the selling of goods or services directly to consumers. Our initial view is that retail activities would include all matters relating to:

- retail pricing and tariffs;
- the billing process;
- collection of charges;
- debt follow up and debt management;
- meter reading, customer meter operations and ownership;
- call and correspondence handling;
- responses to customer enquiries, complaints or requests for information;
- key account management;
- liaison with the wholesaler to deal with customer issues; and
- marketing.

Scottish Water currently handles all aspects of the water and sewerage service. Its activities can be represented in a value chain. Retail is a relatively small part of what Scottish Water does.

Figure 4: Scottish Water's value chain

The Bill would require Scottish Water to establish a retail subsidiary. Scottish Water would be required to treat that retail subsidiary no differently from any potential new entrant.

We would expect that new entrants, as focused, specialist retailers, could improve the level of service offered to customers. For example, they could offer customers multiple payment alternatives (in method of payment and frequency), could combine the bills of various locations into one single bill (for multi-site customers), or could offer advice about how to reduce consumption. Further opportunities could exist if the retailer were already providing the customer with another utility service, as they would benefit from economies of scope, and could offer their customers a single bill that covers a number of utility services.

Possible approaches to setting wholesale prices

There are four approaches to setting wholesale charges that we intend to consider:

- the efficient component pricing rule;
- the long run marginal cost approach;
- accounting approaches; and
- comparator approaches.

The efficient component pricing rule

Economists developed the 'Efficient Component Pricing Rule' (ECPR) during the 1980s as a method of setting charges for access to an essential facility. The ECPR applies the concept of 'avoidable costs'. An avoidable cost is the cost that a company no longer has to bear if it ceases to supply a customer.

ECPR was developed to set an access price when the incumbent would provide retail services itself – not to set a wholesale price for an arm's length subsidiary company. The separation of Scottish Water's retail arm is important because otherwise there would be a risk of challenge from new entrants that the retail business [with access to cheap Government borrowing] has an unfair advantage.

The long run marginal cost approach

A second approach to access pricing would be to set the access charge at the 'long run marginal cost' (LRMC) of providing access to the network. The LRMC is a measure of those costs that could arise in the future if demand were to change. There are two potential problems with using LRMC. These are that there is insufficient information on the very long-term investment needs of the water industry in Scotland and the approach does not take account of central overheads. Modifying LRMC to take account of central overheads is possible but is likely to result in the same answer as the accounting approach.

The accounting approach

We would use our proposed regulatory accounts to define the accounting costs of the wholesale and retail businesses. These accounting costs would include all:

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

The comparator approach

We also propose to analyse other network utility industries that have wholesale and retail activities. In both the gas and electricity industries there has been structural separation between the vertical components of the businesses. The monopoly elements of the businesses have been separated from those elements that are subject to competition.

While we recognise that there are differences both in terms of cost structure and in the extent to which the industries have been opened up to competition, we believe that there could be important lessons to be learned. These would include:

- What does a gas retailer do that a water retailer does not?
- What are the costs of the gas retailer?
- Why should the water retailer's costs be different?

Proposed method

We currently favour the accounting approach to determining the wholesale price. In our view this approach is most likely to ensure that a proper balance is struck between the wholesaler and the retailer.

Connection charging regime

Throughout the utility industry, issues have arisen in relation to the allocation of costs for new connections between existing and prospective customers. In Scotland, the mechanism for establishing how costs should be shared between existing and prospective customers is currently being redefined by the Scottish Executive through changes set out in the *Water Environment and Water Services (Scotland) Act*. The outcome of this process will impact on customer charges in the period of the next Strategic Review.

For both existing and new customers, the allocation of the costs associated with new connections needs to be both equitable and transparent. This requires a careful assessment of the impact of connection charging regimes, particularly where network capacity is limited. For the water industry in Scotland, the impact of limitations of the network capacity on new development confirms the need for robust connection charging arrangements to be in place.

Scottish Water's current connection charging policy

For domestic (or household) customers, current legislation²¹ requires Scottish Water to provide a connection to the public network for either new or existing properties, where it is practical to do so at 'reasonable cost'. Scottish Water currently interprets reasonable cost for new households as being a maximum of £1,500 per property, split £1,000 for waste water and £500 for water.

For first-time household water connections, Scottish Water defines the reasonable cost threshold as £500. For first-time household waste water connections, a sliding scale operates based on the Council Tax band of the property, ranging from £1,995 for a Band A house to £5,985 for a Band H.

In effect, the existing customer base funds the contribution towards the cost of connection. The process for establishing the level of the provision is not, however, transparent and appears to have evolved through custom and practice.

For non-domestic (industrial or commercial) customers there is no direct equivalent of the reasonable cost contribution. However, for waste water connections only, Scottish Water currently provides a connection allowance of £23,600 per hectare of land connected.

A number of issues have arisen in relation to Scottish Water's connection charging mechanism, including the following key concerns:

- The cost to customers of the 'reasonable cost' contribution. This is equivalent to almost 2% of a customer's bill;
- The reasoning behind the reasonable cost contribution. In particular, it is not clear why customers, including the vulnerable, should fund the installation of water and waste water services to new houses. This is not consistent with the approach taken in the electricity, gas and telephone industries.

²¹ *The Water (Scotland) Act 1980, The Sewerage (Scotland) Act 1968, The Water (Scotland) Act 1980 and the Water Environment and Water Services (Scotland) Act 2003.*

- The impact of the connection charging policy on new development. This contribution would appear to increase demand that cannot realistically be met. Moreover, similar problems do not appear to exist to the same extent in other utility models where developers fund a larger proportion of the connection costs.

Our current understanding is that the Scottish Executive proposes to bring forward regulations under the *Water Environment and Water Services (Scotland) Act 2003* by the end of 2005. These regulations will revise the mechanism by which Scottish Water determines reasonable cost for both new development and first time provision. Consequently, these changes will have an impact on the period of the *Strategic Review of Charges 2006-10*.

The Scottish Executive is currently considering whether the introduction of an infrastructure charge (as is levied south of the border) is appropriate in Scotland. This could go some way to financing local network reinforcement work that cannot be attributed to specific development.

Questions for consultation

Chapter 3: An introduction to depreciation

1. Is the proposed approach to depreciation for the *Strategic Review of Charges 2006-10* appropriate? In particular:
2. Is the proposed method of determining asset life, through a five stage classification from 'very short' to 'long', adequate?
3. Is straight line depreciation the most appropriate mechanism for assessing the annual reduction in value of Scottish Water's assets?
4. Does the proposed use of MEA valuation provide a suitable method for estimating the economic value of Scottish Water's assets or would other methods give a better estimation?

Chapter 4: Managing risk in the public sector

5. Do respondents agree that we should extend risk analysis to cover the financial ratio comparisons?
6. Do respondents agree that access to borrowing should require Scottish Water to conform to the same disciplines and control, that apply in the private sector?
7. Do respondents agree that customers should not pay for a failure to meet agreed targets?
8. Are there other factors that we should take into account in minimising the risks to customers both now and in the future?

Chapter 5: How we propose to set prices

9. Do customers agree that the regulatory capital method of price setting will help to facilitate comparisons between the water industry in Scotland and south of the border? If not, what are the alternative methods they would suggest?
10. Do customers agree that it would be better to set a series of price caps rather than the current system of setting a single revenue cap?
11. Are there other actions we should consider to improve the transparency of the price setting process?

Chapter 6: Regulatory accounts and accounting separation

12. Do respondents agree with our proposal to require Scottish Water to submit regulatory accounts?

Chapter 7: Financial modelling

13. Do respondents agree with the financial assumptions that we propose to make?
14. Do respondents agree with our proposal to use the Ofwat ratios as the primary indicator of financial sustainability? If not, which ratios should we use?

Chapter 8: Establishing an initial RCV

15. Do stakeholders agree that there are broadly three ways to establish an initial RCV for Scottish Water?
16. Which method would stakeholders see as the most reliable, and why?

Chapter 9: Allowed Rate of Return

17. Do respondents agree that it would not be appropriate to adopt the rate of return allowed for the private sector water industry south of the border by Ofwat?
18. Do respondents agree that the hybrid approach described above should be used to set the allowed rate of return for Scottish Water? If not, what other method would respondents suggest? In particular how could the suggested method facilitate monitoring and avoid any incentive for any stakeholder to seek to change the ratio of debt to RCV?
19. Do respondents agree that we should make an allowance for embedded debt for this regulatory control period, but only make such allowances in the future if there has been a material change in the rate of inflation?

Chapter 10: Regulatory capital value – treatment of depreciation and additions

20. We would welcome the views of stakeholders on the content of this Chapter. There are no specific consultation questions.

Chapter 11: Interim determinations and logging up and down

21. Do stakeholders believe that there should be a process to adjust prices during a regulatory control period? If so, should we seek to introduce a process for interim determinations?
22. Do stakeholders believe that it is appropriate to adjust prices in the next regulatory control period to

reflect actual outcomes in the previous period? If so, should we seek to introduce a similar process to Ofwat's logging up and down?

23. What factors should trigger an interim determination? At what level of materiality should an interim determination be triggered?
24. Are there other relevant changes in circumstance that we should consider introducing?

25. What is the most effective method for consulting with customers about a potential price change?
26. Would customers prefer the regulator to revised prices downwards during a regulatory period (eg in the event of slow delivery of outputs) even if prices are likely to increase by a greater percentage in the future as a consequence?

Chapter 12: Setting price caps: the role of the tariff basket

27. Do you agree that the proposed approach for the tariff basket items is appropriate for Scotland?
28. Do you agree that we should introduce more tariff baskets than Ofwat?
29. Do you agree that we should establish tariff baskets for metered water and wastewater customers with a standard connection?
30. Do you agree that the proposed method for calculating the weighted average price increase is the most appropriate method to use? If not, which alternative method would be more appropriate and why?

Chapter 13: Standard customers

31. Is a target date of the end of December for announcing tariffs (which will come into effect on 1 April in the following year) acceptable, given that details about tariff baskets and their weightings will be included in the *Strategic Review of Charges 2006-10*?

32. We would like to hear your views on the proposed changes to the standard customers used in the *Strategic Review of Charges 2002-06*. Do you feel that our proposals will make it easier to identify the customer group represented? Are there any other changes you would like to see being made?
33. We would like to hear your views on the proposed additions and changes to the standard customers, as detailed previously. Do you consider that we have achieved broad representation of the customer types? Are there any other customer types that we should add to the lists?
34. Are there any other customer types that are not properly represented in the revised list?
35. Do respondents consider that the criteria that we propose to use in assessing different approaches to setting wholesale prices (ie that the approach should be theoretically sound, practical, consistent with Scottish Executive policy and flexible) are appropriate?
36. What are respondents' views on the ECPR, LRMC, accounting cost and comparator approaches to the setting of wholesale prices?
37. Do respondents agree that the split between wholesale and retail activities should be a notified item?

Chapter 15: Connection charging regime

38. Are there any lessons from England and Wales that you want to propose for application in Scotland?

Chapter 4

The scope for operating cost efficiency

Introduction

The role of this Office, as economic regulator, is to set a regulatory framework that provides incentives to Scottish Water to achieve efficiencies and improve customer service.

This is the fourth volume in a series of documents which explain and seek views on our proposed approach to the *Strategic Review of Charges 2006-10*.

In this volume we discuss:

- how the regulatory regime can create incentives to improve performance;
- how we propose to decide on the level of operating costs that Scottish Water should be allowed to incur; and
- how best to ensure that customers receive an appropriate level of service.

We have identified a number of questions for consultation. These questions are set out at the end of the relevant chapters and are reproduced under chapter headings at the end of this Executive Summary. All responses to this consultation should be received by 5 November 2004. These should be sent to :

Katherine Russell
Water Industry Commissioner for Scotland
Ochil House
Springkerse Business Park
Stirling FK7 7XE

or by email to :

SRCmethodology@watercommissioner.co.uk

We will publish a summary of responses, and our conclusions, on our website www.watercommissioner.co.uk on 19 November 2004.

We had planned to include our proposed method for assessing the scope for operating cost and capital expenditure efficiency in this volume. Unfortunately, there are a number of issues that are still outstanding in defining the current *Quality and Standards II* capital programme. With some reluctance we have therefore

delayed finalising our approach to assessing the scope for capital expenditure efficiency until we have a fully defined capital programme for *Quality and Standards II*. This area of work will now be covered in a fifth volume. We will extend the date for responses to the questions for consultation that are set out in Volume 5.

Incentive based regulation

Regulation seeks to limit the power of a natural monopoly and ensure that it acts in the customer interest. Regulation ensures that the monopoly:

- restrains prices, by setting price or revenue limits; and delivers acceptable levels of customer service.

Common forms of regulation

There are five main regulatory models:

- **Cost-of-service regulation:** in this model the regulator sets the return that can be earned on investment by companies. This enables a company to recoup, at a set rate, the costs and investments that it has put in to provide the services. There is no incentive for a company to minimise prices or to delay investment for as long as possible.
- **Price cap regulation:** price cap regulation (RPI-X) sets the maximum prices that companies can charge for their services for a period of years. This provides an incentive to a company to improve its efficiency. This is because it has to drive down costs in order to maximise profits.
- **Yardstick regulation:** yardstick regulation involves comparing the performance of a company with that of other companies in the same industry. The regulator uses these comparisons to set targets for other companies in the industry. Yardstick regulation is usually used in conjunction with either price cap or rate of return regulation.
- **Performance based regulation:** performance based regulation relies on establishing a reliable link between the profits of the regulated company and the performance measures set by the regulator. Price increases could be delayed or fines become payable if the company does not achieve the defined

performance targets. The company therefore has a strong incentive to meet the targets set.

- **Franchise regulation:** under franchise regulation, the regulator invites companies to bid for the right to provide services to the public. The company that offers the best price-quality package wins the bid and will contract to provide the services at a certain price and to a defined quality standard.

We believe that price cap regulation is the most applicable to the current position of the water industry in Scotland. The RPI-X approach is widely used in the regulation of utilities in the UK. Using this approach in Scotland will allow more direct comparison with the industry in England and Wales. This is important as it is through benchmarking the performance of Scottish Water with other water companies that we can determine the extent of efficiencies that are possible.

Providing incentives through regulation

In the context of regulated utilities, incentive regulation has been defined as “the use of rewards and penalties to induce the utility to achieve desired goals where the utility is afforded some discretion in achieving goals²².” In the case of the water industry, the “desired goals” would include:

- keeping prices to customers as low as possible;
- meeting environmental and water quality objectives;
- delivering the required investment programme;
- maintaining the long-term sustainability of the industry; and
- meeting customer service targets.

As part of its 2004 price review²³, Ofwat listed the general criteria that it considered should apply for incentive mechanisms. Ofwat stated that the mechanism should:

- be in the long-term interests of customers;
- offer meaningful and worthwhile rewards for genuine outperformance;
- offer adequate penalties for underperformance;
- provide timely rewards and penalties;
- stimulate continuous improvements;
- be known in advance;
- be straightforward in concept;
- follow simple rules;
- be simple to apply; and
- avoid retrospective changes.

We believe that these criteria are as relevant to the public sector as to the private sector water industry. Our proposed use of the RPI-X mechanism would seem to be consistent with these criteria.

²² Lewis, Tracy and Chris Garmon, ‘Fundamentals of incentive regulation’. PURC/World Bank International Training Program on Utility Regulation and Strategy, June 1997.

²³ Ofwat, ‘A further consultation on incentive mechanisms: Rewarding future outperformance and handling underperformance of regulatory expectations’, June 2003.

Table 1: Criteria for an effective framework for incentives

Criteria	How well does RPI-X fit the criteria?
In long-term interests of customers	Good. It is widely agreed that RPI-X works well in incentivising firms to improve efficiency in operation and investment. There are risks that firms may seek to cut corners in service delivery, but proper scrutiny from regulators and customer committees should reduce this risk.
Meaningful and worthwhile rewards for genuine outperformance	Good. Regulated companies in the UK have improved their efficiency. This suggests that regulated firms believe the benefits to be worthwhile. The context of 'rewards' for a public sector company may be different.
Adequate penalties for underperformance	We are not aware of any evidence showing the penalties for underperformance to be inadequate.
Timely rewards and penalties	Acceptable. A regulatory period of four to five years ensures that the incentive framework can reward (or penalise) managers who are responsible for outperformance (or underperformance). The period is not so long that there is an inordinate delay in transferring the benefit to customers.
Stimulate continuous improvements	Good. This can be further enhanced by implementing a rolling incentive mechanism.
Known in advance	Good. The targets for the regulatory period are set out in advance. The mechanism is well understood by all stakeholders.
Straightforward in concept	Good. The concept is relatively straightforward. Companies are motivated to meet and beat the targets set by the regulator.
Simple rules	Acceptable. In its initial form, simplicity was one of the merits of the framework. However, the rules have inevitably become increasingly complicated.
Simple to apply	Acceptable. No new information, which is not already collected either during the initial price-setting or through ongoing monitoring, is required. The rules are well documented.
Avoid retrospective changes	The incentive framework relies on consistency and transparency. These are two of the Better Regulation Task Force Principles that we have adopted.

Some commentators have suggested that RPI-X promotes short-term planning by utilities instead of encouraging the long-term investment planning that could sustain efficiency improvements and would be more beneficial to customers. We agree that there is a risk that regulated companies are likely to maximize their short-term performance. It would be desirable to ensure that regulated companies planned for the long term. We consider that transparent and consistent regulation are likely to be at least as important as other potential regulatory actions.

Our view is that there needs to be a balance between short-term and long-term pressures. It is important to both customers and to the service provider that we are clear about the long-term prospects for prices. It is equally important, however, that there is a current pressure to deliver value for money to customers. On balance, we believe that RPI-X does work in the

customer interest. If the regulator monitors service levels and asset condition and performance effectively, he can reduce the risk that a company seeks short-term benefits and stores up problems for the future. Regulatory consistency and transparency are essential, but so too is the strength of the regulatory framework. The regulated company must believe that the regulator can and will apply incentives or penalties.

In order to improve the transparency and consistency of the framework, we would also propose to introduce a rolling incentive mechanism. In its 1999 price review, Ofwat proposed a rolling incentive mechanism, which it believed would strengthen incentives for the companies. The mechanism allows companies to keep the benefit of outperformance of targets for a full five-year period, irrespective of when the savings are made. It is only after a period of five years that the benefit of any outperformance is passed to customers.

Employee incentives

It is important that the benefits of any outperformance encouraged by RPI-X regulation are shared appropriately between the various stakeholders. The periodic setting of prices will ensure that customers benefit in the medium term. There does, however, have to be appropriate incentives for Scottish Water's employees to outperform the regulatory targets.

The nature and scope of incentives for management and employees is clearly outside our remit. However, the potential benefits to customers of improved and sustained performance are important considerations for this office. From a customer perspective, we believe that incentives should be designed to encourage exceptional performance and should be consistent with the regulatory settlement. Management bonuses should also be seen to reflect improvements in the value for money that is achieved for customers.

Under RPI-X regulation, Scottish Water could be permitted to retain the benefits of outperformance of regulatory targets. It is important that this incentive is in the customer interest. We therefore propose to protect this interest by introducing the right to retain the benefits of outperformance on the condition that the Board

agrees to publish, in advance, the incentive framework for managers. The Board would also be required to ensure that achieving regulatory targets is a clear and discrete element of the framework.

This is not without precedent in quasi-public, regulated organisations. Two examples of other benefit sharing schemes indicate the scope of what is possible.

Glas Cymru²⁴: the remuneration of Glas Cymru's executive directors is designed in such a way that a high proportion of the maximum potential pay is linked directly to company performance. Half of the maximum bonus is based on financial performance (measured by growth in financial reserves) and the other half is based on how well the company delivers services to customers.

Network Rail Limited²⁵: Network Rail's Management Incentive Plan (MIP) is designed to: "create the potential to reward outstanding performance based on individual contribution and the overall success of Network Rail in meeting the objectives of the Business Plan."²⁶

Setting the allowed level of operating costs

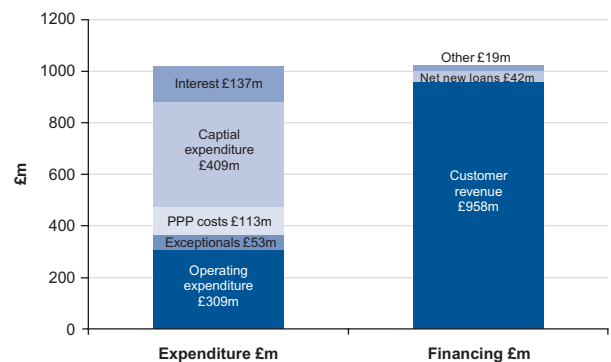
Operating expenditure comprises day-to-day running costs such as employment costs, electricity, materials, hired and contracted costs, local authority rates, insurance, software licences and vehicle running costs. Bad debt is also regarded as a running cost.

We do not include the following in operating costs:

- maintenance of the asset base;
- depreciation;
- infrastructure renewals charge;
- costs of Public Private Partnership (PPP) schemes;
- interest payments; and
- taxation.

Operating expenditure accounts for some 30% of revenue. This is illustrated in Figure 1, which shows that in 2003-04, Scottish Water's operating expenditure was £309 million.

Figure 1: Scottish Water expenditure and funding 2003-04



We collect information about the operating costs incurred by the water and sewerage service undertakers in the UK using a consistent breakdown of operating expenditure. This facilitates comparisons with other water and sewerage companies.

Underlying operating expenditure

In order to ensure that our comparisons are objective and fair, we exclude one-off items of expenditure that can affect reported operating expenditure. Examples would include:

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

Base service operating expenditure

The baseline level of operating expenditure is the expenditure incurred in the base year. We will apply

²⁴ Source: Interim statement of Glas Cymru policy for the remuneration of directors, Glas Cymru Cyfyngedig Annual Meeting (2001).

²⁵ Source: Management Incentive Plan Statement – 2002-03, Network Rail Limited.

²⁶ Ibid.

future efficiency targets to this baseline. We will use the following process to set the baseline level of operating costs for the draft determination:

- We will use the 2003-04 statutory accounts and Annual Return information to establish the total level of Scottish Water's operating expenditure in that year.
 - We will identify exceptional and atypical costs and subtract them from total operating expenditure. This will allow us to establish the normal ongoing costs of running the business.
 - Finally, we will assess whether there is anything unusual about Scottish Water's cost allocation in 2003-04. We will compare Scottish Water with the companies in England and Wales to ensure that its cost allocation practices are consistent with those in England and Wales. If necessary, we will make appropriate adjustments to Scottish Water's operating expenditure.
- 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 operating expenditure, rather than relying on estimates from contractors/manufacturers or on an arbitrary percentage of the capital 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 operating expenditure and capital investment?
 - Where appropriate, have single authority solutions been investigated?
 - Has the authority quantified potential savings to the baseline operating expenditure, which arise from upgrading works or systems, and offset increases in new operating expenditure?

We are due to publish the final determinations in November 2005. We will therefore have information for 2004-05 at that stage. We therefore propose to revise our assessment of the baseline using information for 2004-05.

New operating expenditure

Scottish Water incurs 'new' operating expenditure to deliver improvements in:

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

Such new operating costs are added to the baseline that we described above.

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

Like-for-like comparison

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

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

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

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

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

making changes to existing assets to modify the way in which they operate.

Calculating relative efficiency

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

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

Ofwat's methods of benchmarking

Ofwat uses econometric modelling to establish a relationship between the costs incurred by the companies and a number of cost drivers. These cost drivers take account of both engineering and economics. Ofwat developed these models jointly with Professor Mark Stewart of Warwick Business School in the early 1990s. They have subsequently been updated and improved.

The Competition Commission endorsed the models in August 2000, following a detailed review, and in January 2000 Ofwat's approach earned wide endorsement as an example of best practice from the Performance and Innovation Unit of the UK Government Cabinet Office.

In January 2004, Ofwat published a revised suite of models for comparing operating expenditure. The 2004 models have been re-estimated using 2002-03 information from the companies south of the border and will be used as part of the 2004 price review. There are nine models for operating expenditure²⁷:

²⁷ There are eight econometric models for assessing capital maintenance efficiency, hence the 17 models referred to by the Performance and Innovation Unit in its report

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

The purpose of each model is to establish a relationship between the costs reported by the companies and external cost drivers. The models themselves take different forms. These are summarised in Table 2.

Table 2: Summary of econometric models and explanatory factors

Model	Model type	Explanatory factors
Water resources and treatment	Linear model for unit cost	Population, number of sources, distribution input, proportion of supplies from rivers.
Water distribution	Log unit cost	Population, proportion of total mains length with diameter > 300mm.
Water power	Log linear	Distribution input, average pumping head.
Water business activities	Log linear	Number of billed properties.
Sewer network	Log linear	Sewer length, area, resident population, holiday population.
Large sewage treatment works	Log linear	Total load, use of activated sludge treatment, tight effluent consent for both suspended solids and BOD ₅ .
Small sewage treatment works	Unit cost	Works size, works type, load.
Sludge treatment and disposal	Unit cost	Weights of dry solids, disposal route.
Sewerage business activities	Unit cost	Number of billed properties.

Water resources and treatment

This model predicts the costs associated with water resources, the treatment process and the operating environment.

Table 3: Ofwat's model for water resources and treatment operating expenditure

Water resources and treatment		
Modelled cost:	Resources and treatment functional expenditure (£m) less power expenditure (£m), less Environment Agency charges (£m), divided by resident population (millions)	
Explanatory variables	Coefficient	Standard error
Constant	1.485	1.927
Number of sources divided by distribution input (Ml/d)	16.770	6.268
Proportion of supplies derived from river sources	5.124	2.449
Statistical indicators:	Number of observations: 22	R ² : 0.274

(Resources and treatment expenditure less Environment Agency charges less power expenditure) / resident population = 1.485 + 16.770 x (number of sources / distribution input) + 5.124 x (proportion of supply from rivers)

Water distribution

At the 1999 price review, Ofwat carried out a thorough review of the potential cost drivers for water distribution. Analysis showed that the length of large diameter mains (300mm diameter or more) was statistically significant. This result is not surprising given that repairs, maintenance and inspection on large mains are likely to incur much greater costs than those on small mains.

Table 4: Ofwat's model for water distribution operating expenditure

Water distribution		
Modelled cost:	Log to base e of (distribution functional expenditure (£m) less power expenditure (£m), divided by resident population (millions))	
Explanatory variables	Coefficient	Standard error
Constant	-5.203	0.160
Length of main greater than 300mm diameter / total length of main	5.165	1.943
Statistical indicators:	Number of observations: 22	R ² : 0.261

Log to base e of ((distribution functional expenditure less power expenditure) / resident population) = -5.203 + 5.165 x (proportion of large diameter mains)

Water power

This model is based on the physical relationship between the amount of water pumped and the energy required. It incorporates both vertical lift and the energy required to overcome friction in pipes.

Table 5: Ofwat's model for water power operating expenditure

Water power		
Modelled cost:	Log to base e of power expenditure (£m)	
Explanatory variables	Coefficient	Standard error
Constant	-9.081	0.245
Log to base e of (distribution input (Ml/d) x average pumping head)	0.940	0.023
Statistical indicators:	Number of observations: 22	R ² : 0.989

Log to base e of power expenditure = $-9.081 + 0.94 \times \log \text{ to base e of (distribution input } \times \text{ average pumping head)}$

Water business activities

This model relates business activity costs (including customer services, scientific services and the charge for doubtful debts) to the number of billed properties.

Table 6: Ofwat's model for water business activities expenditure

Water business activities		
Modelled cost:	Log to base e of business activities expenditure (£m) plus doubtful debts (£m)	
Explanatory variables	Coefficient	Standard error
Constant	-3.916	0.255
Log to base e of number of billed properties (thousands)	0.949	0.040
Statistical indicators:	Number of observations: 22	R ² : 0.966

Log to base e of (business activities expenditure plus doubtful debts) = $-3.916 + 0.949 \times \log \text{ to base e of (number of billed properties)}$

Sewer network

This model expresses costs per unit length of sewer. It takes into account the amount of sewage being transported through the sewerage system. This is a function of area, since this will affect surface water drainage volumes. Costs associated with remoteness are also a function of area. Sewer network costs are also a function of population since this will impact on sewage volumes. The model also takes account of the higher costs expected in regions with a significant holiday population.

Table 7: Ofwat's model for sewer network operating expenditure

Sewer network		
Modelled cost:	Log to base e of sewer network expenditure (£m) less Environment Agency charges (£m), per kilometre of sewer for each area	
Explanatory variables	Coefficient	Standard error
Constant	-6.515	0.313
Log to base e of area of sewer district per kilometre of sewer	0.179	0.032
Log to base e of residential population per kilometre of sewer	0.432	0.169
Holiday population divided by resident population	0.715	0.501
Statistical indicators:	Number of observations: 64	R ² : 0.457

Log to base e of sewer network expenditure less Environment Agency charges per kilometre of sewer = $-6.515 + 0.179 \times (\log \text{ to base e of area of sewer district per kilometre of sewer}) + 0.432 \times (\log \text{ to base e of residential population per kilometre of sewer}) + 0.715 \times (\text{holiday population/resident population})$

Large sewage treatment works

The large sewage treatment works model covers those sewage treatment works serving a 'population equivalent' of at least 25,000. Population equivalent is a measure of the amount of sewage treated, both domestic and industrial, expressed in terms of the number of domestic customers required to produce a similar strength and volume of sewage.

Table 8: Ofwat's model for large sewage treatment works operating expenditure

Large sewage treatment works		
Modelled cost:	Log to base e of functional expenditure on sewage treatment at large works (£000) less Environment Agency charges (£m) and terminal pumping costs	
Explanatory variables	Coefficient	Standard error
Constant	-1.455	0.253
Log to base e of total load ²⁸	0.754	0.028
Tight effluent consent for both suspended solids and BOD ₅ ²⁹	0.060	0.051
Activated sludge used	0.353	0.054
Statistical indicators:	Number of observations: 369	R ² : 0.715

Log to base e of large sewage treatment works expenditure less Environment Agency charges and terminal pumping costs = $-1.455 + 0.754 \times (\log \text{ to base e of total load}) + 0.06 \text{ if tight effluent consent for both suspended solids and BOD}_5 + 0.353 \text{ if activated sludge used.}$

²⁸ For the purposes of this model, total load is estimated as population equivalent \times 120.

²⁹ Tight effluent consent is defined as 30 mg/litre or less suspended solids and 20 mg/litre or less BOD₅.

Small sewage treatment works

This model uses average unit costs across England and Wales.

Table 9: Ofwat's model for small sewage treatment works operating expenditure

Cost of small sewage treatment works										
This is a unit cost model. Each company's average annual expenditure divided by the total load treated at each works is compared with the weighted average industry cost.										
	Weighted average industry unit cost £000s/(kg BOD5/day)									
	Primary	Secondary activated sludge	Secondary biological	Tertiary A1	Tertiary A2	Tertiary B1	Tertiary B2	Sea outfall preliminary	Sea outfall screened	Sea outfall unscreened
Size band 1	0.78	1.04	1.00	1.07	0.72	0.69	0.92	10.89	-	0.32
Size band 2	0.33	0.83	0.59	0.62	0.38	0.49	0.55	-	-	0.05
Size band 3	0.33	0.46	0.31	0.43	0.33	0.30	0.39	0.43	0.04	0.01
Size band 4	0.30	0.21	0.16	0.20	0.29	0.16	0.19	0.01	0.10	0.01
Size band 5	0.24	0.14	0.11	0.14	0.16	0.10	0.12	0.01	-	-
Number of observations: 500										

Sludge treatment and disposal

This model compares the costs of sludge treatment and disposal to the volume treated and the possible methods of disposal. The model uses average unit costs across England and Wales.

Table 10: Ofwat's model for sludge treatment and disposal operating expenditure

Cost of sludge treatment and disposal								
This is a unit cost model. Each company's average annual expenditure is divided by the amount of sludge disposed to each disposal route and this is compared with the weighted average industry cost.								
	Weighted average industry unit cost £000s/(thousand tonnes of dry solids)							
Disposal route	Farmland - untreated	Farmland - conventional	Farmland - advanced	Incineration	Landfill	Composted	Land reclamation	Other
£000/ttds	-	198.2	255.9	161.6	208.6	205.2	140.7	118.4
Number of observations: 80								

Sewerage business activities

This model uses an average unit cost per billed property across England and Wales.

Table 11: Ofwat's model for sewerage business activities operating expenditure

Sewerage business activities	
This is a unit cost model. Each company's average annual business activities expenditure (plus doubtful debts) is divided by the number of billed properties. This is then compared with the weighted average industry cost.	
£/billed property	Weighted average industry unit cost 11.77
Number of observations: 10	

We only made one change to the Ofwat models in the *Strategic Review of Charges 2002-06*. This change concerned the small sewage treatment works model. We took the view that many of the small works in Scotland were significantly smaller than this and therefore developed a new size band for works with a population equivalent up to 100 – we called this size band 0. Size band 1 for Scotland now covered works with a population equivalent of between 100 and 250 (rather than 0 to 250, as in England and Wales).

We developed two new unit costs for Scotland – one for works in size band 0 and the other for works in size band 1 in Scotland. The unit costs of the very small works in size band 0 were high relative to those in the other size bands. This reflects the fact that it tends to cost more to treat loads at very small works. The small sewage treatment works model therefore continued to demonstrate economies of scale.

The alternative model

At the time of the last review we developed an alternative model to assess the efficiency of the water industry in Scotland. This model was used to check the results of the Ofwat econometric models. We were aware that the Competition Commission had concluded that, although the Ofwat econometric models were robust, alternative models could have a place in efficiency analysis.

In developing an alternative model we took particular care to use a different approach to Ofwat's econometric models so that the alternative model could provide an independent check on the results given by Ofwat's models.

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

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

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

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

We identified appropriate drivers for the costs that cannot be controlled by management. Tables 12 and 13 set out the cost drivers (for water and sewerage respectively) that we identified for each activity.

Table 12: Alternative model: cost drivers by activity for the water service

Activity	Cost drivers used in the model, associated with each activity				
	Assets operated	Asset attribute	Customers served	Volume	Other
Abstraction and treatment	Impounding reservoirs and lochs	Number and average size of each asset type	-	Annual distribution input ³⁰	Average pumping head ³¹ in abstraction and treatment
	Burns and springs				
	River abstraction				
	Boreholes				
	Water treatment works				
Distribution	Water mains	Length of network	Resident connected population	Annual distribution input	Average pumping head in the distribution system
	Water pumping stations	Number and average size of each asset type			
	Service reservoirs and towers				
Business activities			Number of billed water customers – domestic (unmeasured, metered) non-domestic (unmeasured, metered)		Annual number of water samples taken
Bad debt					Annual revenue billed

³⁰ Distribution input is the volume of water put into supply (including all leakage).

³¹ Average pumping head is the average lift through pumping of water put into supply. Pumping takes place as part of the abstraction and treatment processes, and within the distribution system, where treated water is provided to customers.

Table 13: Alternative model: cost drivers by activity for the sewerage service

Cost drivers used in the model, associated with each activity					
Activity	Assets operated	Asset attribute	Customers served	Volume	Other
Sewage collection	Sewers	Length of network	Resident connected population	Volume per head	Size of area served
	Pumping stations	Number and average size			
	Storm outfalls	Number			
Simple sewage treatment	Sea outcrops - unscreened - screened	Number and average size	-	Load ¹¹ treated	
	Preliminary treatment works				
	Primary treatment works				
	Public septic tanks	Number			
Complex sewage treatment	Secondary treatment works - using activated sludge process - using biological process Tertiary treatment works - using activated sludge process - using biological process	Number and average size		Load treated	
Processing sludge				Tonnes disposed (dry weight)	Disposal route (landfill, farmland, incineration, other)
Business activities	-		Number of billed sewerage customers - domestic (unmeasured, metered) non-domestic (unmeasured, metered)		Number of sewage samples taken
Bad debt					Annual revenue billed

We used information from Scottish Water and the water and sewerage companies about each of these cost drivers. The model also takes account of economies of scale. We do this by calculating the number of 'standard

assets' that each company has. The standard assets take account of the size and operating costs of the companies' assets.

We multiply the unit costs for each asset cost driver by the number of 'standard' assets to arrive at a predicted cost for each of the ten activities of the business. We multiply the unit costs for customers, volumes and other drivers by the information reported by the companies and by Scottish Water on these items. This results in an additional predicted cost for each of the ten activities. We then sum, for each activity, all of the relevant predicted costs. This tells us the average expected operating expenditure of that activity for each company and for Scottish Water.

We then combine the ten areas of the model to determine the overall predicted operating expenditure of each water and sewerage undertaker. Comparing this predicted cost with the actual cost reported by each undertaker gives us an initial indication of the level of efficiency.

The purpose of making adjustments to reported costs

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

We need to take account of all of these differences. For that reason, we ask Scottish Water to draw to our attention all factors (those not included in the models) that influence cost. This should include factors that both increase and decrease cost.

We want to ensure that our efficiency targets neither unduly penalise nor reward Scottish Water. Some commentators have argued that it is unfair to draw comparisons between Scottish Water's performance and that of the privatised water and sewerage companies in England and Wales. In particular, they question the application of Ofwat's econometric models in Scotland³². We believe that the fact that the Ofwat

³² See, for example, J Findlay, 'Financing the Scottish water and sewerage industry', paper to the Scottish Trades Union Conference, April 2004.

models have been successfully applied to companies as different as Severn Trent Water³³ and South West Water³⁴, and to both large water and sewerage companies³⁵ and small water only companies³⁶, confirms that the models can reasonably be applied in Scotland. While some new special factors may have to be taken into account, this does not invalidate the modelling process.

Commentators who question our benchmarking process cite the following differences between the industry in Scotland and that south of the border:

- Scotland's geography (its size, remote islands, long coastline and topography);
- its population settlement patterns (remote communities, concentrated dense urban areas);
- the extent of the assets required to serve customers in Scotland (long mains, small isolated treatment works);
- the quality of the assets inherited by Scottish Water (condition and performance of the mains, sewers, treatment works, pumps);
- the nature of the customer base;
- the fact that Scottish Water is in public ownership (political interest, Scottish Water's duty to Scotland, remit and freedom of management); and
- the short time that Scottish Water has had to mature and improve.

We believe that some of these factors may require us to make adjustments to the results of the models. To justify an adjustment, Scottish Water has to provide evidence in the following areas:³⁷

- What is the justification for the special circumstances which demonstrates a material difference from

industry norms? Scottish Water will need to set out whether the factors are the result of special obligations, the character of all or part of its customer base, or the result of historical development of the water and sewerage systems in its area of supply.

- What is the quantification of the impact of the special factors that demonstrate a net additional effect on Scottish Water's costs, over and above that which would be incurred without these factors?
- What has Scottish Water done to manage the additional costs arising from the special factors and to limit their impact?
- Are there other special factors that reduce costs relative to industry norms? If so, have these been quantified and offset against upward cost pressures?

Assessing the size of the efficiency gap

The term 'efficiency gap' refers to the difference between Scottish Water's actual reported operating costs and the costs reported by the comparator companies for providing a similar level of service. We need to distinguish between the efficiency gap that exists today and the gap that could exist in the future, as the companies in England and Wales are likely to continue to improve.

The efficiency gap is the difference between Scottish Water's actual costs and its adjusted predicted level of costs. We convert these differences to a relative scale in order to be able to complete the benchmarking. We call this the efficiency score. An illustrative example is presented in Table 14 opposite.

Table 14: Example illustrating how the efficiency score is calculated.

	Adjusted Observed £m	Predicted £m	Adjusted Residual		Efficiency Score
			£m	%	
A water & sewerage company	200.00	155.00	45.00	29.03%	129.03

³³ Severn Trent Water covers West and East Midlands and part of rural Wales.

³⁴ South West Water covers Devon and Cornwall.

³⁵ Thames Water has some 12 million customers.

³⁶ Bournemouth and West Hampshire Water covers just the water service for the Bournemouth area.

³⁷ These questions are adapted from Ofwat's letter to Regulatory Directors, RD35/98, 1998.

In this example, a company has reported operating costs of £200 million, after adjustments. The econometric models predict costs of £155 million for this company. It is therefore relatively inefficient. We first calculate the residual in percentage terms:

$$100\% \times 45/155 = 29.03\%$$

The last step in the comparison process is to rebase efficiency scores such that the average efficiency score of companies south of the border is 100. This simplifies the presentation of Scottish Water's score.

Assessing the future efficiency gap

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

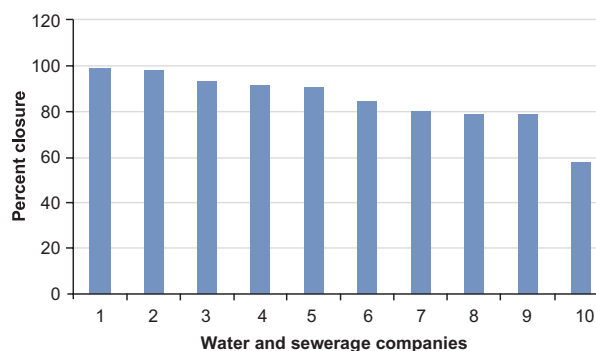
Ofwat published draft targets and incentives in August 2004³⁸, and will finalise them in November 2004. This will inform our assessment of the scope for improvement by Scottish Water over the period 2006 to 2010. We can then set targets for Scottish Water, which would close much of the expected efficiency gap in 2010.

Rate of improvement in efficiency

The final important area that we need to consider relates to the rate of improvement that we can expect from Scottish Water. In the *Strategic Review of Charges 2002-06* we examined evidence from England and Wales about the rate of progress achieved by companies during the 1990s. We assumed that Scottish Water should be able to match the pace of change achieved south of the border.

Our analysis demonstrated that during their best five-year period, the companies achieved an average closure of 85% of the gap to the leading company. Figure 2 is taken from the *Strategic Review of Charges 2002-06*.

Figure 2: Closure of efficiency gap by water and sewerage companies over five years



We propose to conduct a similar analysis to establish the rate at which Scottish Water should be required to improve during the 2006-10 regulatory control period.

Calculating total allowable operating expenditure

We are proposing to set targets in terms of total allowable operating expenditure (not including depreciation). We will set total allowable operating expenditure at a level that we believe is sufficient for Scottish Water to carry out its operations for each year of the regulatory period. This is the amount that will be funded through customer charges. It is made up as follows:

Total allowable operating expenditure
=
Baseline operating expenditure ³⁹
±
Assessed changes in baseline operating expenditure
-
Efficiencies in baseline operating expenditure ⁴⁰
+
New operating expenditure ⁴¹
-
Efficiencies on new operating expenditure ⁴²
+
Public Private Partnership operating expenditure
-
Efficiencies on Public Private Partnership operating expenditure
+
The impact of annual inflation on all of these components

³⁸ Ofwat Future water and sewerage charges 2005-10 – Draft determinations, August 2004.

³⁹ See Chapter 6.

⁴⁰ See Chapters 7, 8 and 9.

⁴¹ See Chapter 12.

⁴² See Chapter 13.

We will no longer refer to a monetary value for the total efficiencies required. However, if stakeholders want to count the total monetary value of the efficiencies required in this regulatory control period in order to compare it with that used in the *Strategic Review of Charges 2002-06*, for each year they should add the following then adjust for annual inflation:

- efficiencies in baseline operating expenditure;
- efficiencies in new operating expenditure; and
- efficiencies in Public Private Partnership costs.

Public Private Partnerships

The three former authorities decided to let a total of nine concessions for the building and operation of waste water treatment plants. These concessions were for a period of 25-30 years.

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

The results of the nine projects would appear to have realised considerable tangible benefits in the short term. It is open to question whether these benefits still apply.

The nine PPP contracts represent a capital investment on behalf of customers of around £550 million, which contrasted 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 are therefore only comparable on an

aggregate basis if the actual service delivered and the construction of assets are taken into account.

The nine projects are outlined in Table 15. The table also shows the projected fee payable to each consortium.

Table 15: PPP contracts with Scottish Water

Project name/ Company name:	Contract signed	Duration years	Construction costs (£m)	Annual fee in 2002-03
Almond Valley, Seafield and Esk Valley: Stirling Water (Seafield) Ltd	1999	30	£100m	£25m
Levenmouth: Caledonian Environmental Services Ltd	2000	40	£46m	£5m
Highland (Fort William and Inverness): Catchment Ltd	1996	25	£33m	£9m
Tay: Catchment (Tay) Ltd	1999	30	£84m	£17m
Aberdeen: Aberdeen Environmental Services Ltd	2000	30	£64m	£13m
Moray: Catchment (Moray) Ltd	2001	30	£60m	£8m
Dalldowie/Shieldhall: SMW Ltd	1999	25	£66m	£16m
Dalmuir: Scotia Water UK Ltd	1999	25	£37m	£7m
Meadowhead, Stevenston & Inverclyde: Ayr Environmental Services Ltd	2000	30	£59m	£12m
Scotland total			£549m	£112m

Financial and efficiency consequences

We analysed the value for money of the PPP contracts in 2001. The evidence suggested that these schemes were all delivered at a much lower cost for customers than would have been achieved by the three authorities under traditional procurement.

In the *Strategic Review of Charges 2002-06* we highlighted that there may be opportunities for Scottish Water to review the PPP contracts that it inherited. It seems clear that the implied operating costs of the PPP consortia are high relative to the expected level of operating costs associated with a waste water treatment plant of similar size. There would therefore appear to be

some scope for improved efficiency. Moreover, the recent and continuing significant improvement in Scottish Water's operating expenditure efficiency would suggest that it is now quite likely that Scottish Water could operate these plants at equal or lower cost than the PPP companies. It is conceivable, therefore, that Scottish Water could seek to take the operation of these assets back 'in-house'.

We have no doubt that the contracts represented good value for money at the time they were concluded. However, we consider that improvements in Scottish Water's performance have made it less certain that the PPP contracts represent value for money to customers today. It is important that we ensure that customers' bills are no higher than they need to be and, as such, we need to consider whether we can take any steps to ensure that PPP costs can be reduced. Possible options could be to set an efficiency target for PPP or to adjust the level of allowed revenue to reflect the efficient costs (financing and operating) of the services that are being delivered through PPP.

Our first proposed approach will be to look at the prices for which shares in the PPP concessions are changing hands and assess what this might tell us about the value for money that customers are currently receiving. Even if these prices are quite significantly lower than the apparent value to current customers, we would have to take account of the extent of the risk transfer that still remains with the PPP contractor.

The second proposed approach will be to look again at the operating and capital maintenance costs of the PPP company and, using the benchmarking techniques that we outlined in Chapters 8 and 9, assess the scope of any inefficiency. We will also use the capital maintenance models that we will describe in detail in Volume 5. Again, we would propose to take account of the value of any remaining risk transfer.

If we conclude that customers are currently paying too much for the services that are being provided (or will be by the end of the next regulatory control period) we would propose to take account of this in Scottish Water's price caps. This is clearly a move forward from the *Strategic Review of Charges 2002-06* where we did not

set an efficiency target on PPP. However, we did note at that time that it might be appropriate to apply such an efficiency target in the future.

Levels of service

Monitoring the levels of service

We monitor three broad aspects of service:

- asset performance measures;
- customer service measures; and
- public health and environmental performance measures.

Asset performance measures cover areas of service that depend on the water supply and sewerage infrastructure. They cover:

- pressure;
- planned supply interruptions;
- unplanned supply interruptions; and
- sewer flooding.

Customer service measures cover areas of service that depend on the management and employees of the organisation and the processes they use. Customer service measures cover:

- billing enquiries;
- written complaints;
- telephone contacts; and
- Public health and environmental performance measures.

Public health and environmental performance measures cover areas of service that relate to the service provider's ability to comply with the requirements for quality standards. These standards are set by the

respective quality regulators, DWQR⁴³ and SEPA⁴⁴. These measures include:

- meeting drinking water quality standards,
- complying with abstraction consents for rivers,
- complying with discharge consents at waste water treatment works, and
- the number of pollution incidents.

There are also a number of guaranteed minimum standards. Failure to comply with any of the guaranteed standards entitles the customer to financial compensation.

Encouraging improvements in the level of service

There are two possible approaches to regulating levels of service:

- Firstly, we could benchmark the performance of the regulated company against the performance of other companies in the same or similar industries. The results of this benchmarking would be published in order to provide the company with an incentive to improve performance in the future.
- Alternatively, we could set targets for some or all aspects of service quality. These targets should be quantifiable so that it is possible to measure whether the particular aspect of service has been delivered to the required standard.

Publishing the results of performance benchmarks is likely to encourage companies to improve their performance.

- Managers do not want to get a reputation for running a company that performs less well than other similar companies.
- Shareholders will be concerned about the impact of poor performance.

- The level of service adjustment applied by Ofwat at the price review should provide companies with an incentive to avoid being one of the worst performing companies and to aim to be one of the best performing companies.
- The threat of competition in certain aspects of the business, for example as a result of common carriage, retail competition or off-network solutions, should encourage companies to consider their level of service performance relative to other companies.

The benchmarking approach raises two issues:

- Are the incentives for performance improvement sufficiently strong?
- Are the incentives for performance improvement appropriate? Provided the overall performance measure reflects customer preferences accurately, this should not be an issue. However, this places an onus on the regulator to ensure that the performance measurement system is updated in line with any significant changes in customers' priorities.

The target setting approach is particularly useful in situations where there are no direct comparators for the regulated company, for example, in industries where there is one company and one regulator. In industries where comparators are available there may also be a role for targets. For example, it could be argued that it is appropriate to set Scottish Water a level of service target since it lags so far behind the companies south of the border.

The target setting approach also raises two issues:

- Is there sufficient information to set a target?
- Does the interaction between efficiency targets and levels of service targets weaken the regulator's ability to target reductions in costs?

There are many different aspects of customer service.

⁴³ DWQR – Drinking Water Quality Regulator – www.DWQR.org.uk

⁴⁴ SEPA – Scottish Environment Protection Agency – www.SEPA.org.uk

The cost of improving each aspect of customer service will vary depending on the level of service target that is set. Initial improvements may not be too costly to achieve, but further improvements are likely to become increasingly expensive. The regulator needs to understand these marginal costs and customers' willingness to pay if he is to set appropriate levels of service targets. We are not convinced that this would be consistent with our principles of transparency, consistency and proportionality.

The proposed approach for Scottish Water

We propose to develop our use of the benchmarking approach for quality of service regulation. The approach is tried and tested for the water industries in Scotland and England and Wales.

We have explained that we are proposing to set efficiency targets that are adjusted to take account of differences in the level of service. In this instance, we would accept claims for new operating costs designed to improve levels of service, provided there is a clear measurable output. We believe that this refinement of our benchmarking approach may capture some of the potential benefits of the target setting approach without the weaknesses.

Monitoring operating expenditure and levels of service

Framework for monitoring

The *Strategic Review of Charges 2006-10* is only the start of the regulatory process. During the regulatory control period we will monitor Scottish Water's progress in reducing costs and improving levels of service. We intend to build on the framework that we have already put in place to monitor performance, through:

- regular information submissions, comprising the Annual Return and more frequent updates of key performance indicators, and forecasts;
- independent audit of regulatory information;

- a process of query, challenge and confirmation of numbers;
- rigorous analysis of current and expected progress against targets;
- published reports; and
- the application of analytical tools which are designed to ensure that we can monitor real progress as opposed to apparent progress (for example, improvements that are due to the information for the annual return being calculated in a different way).

We will also monitor Scottish Water's progress relative to that of the companies in England and Wales. We will continue to use information from the companies south of the border. This information will include:

- companies' Annual Returns to Ofwat;
- comments on these returns by independent auditors, published by Ofwat;
- companies' published regulatory accounts;
- Ofwat's published analysis of companies' progress; and
- rigorous analysis of relative efficiency using our benchmarking tools.

Monitoring operating expenditure

Our monitoring will cover the following⁴⁵:

- baseline operating expenditure;
- new operating expenditure;
- Public Private Partnership (PPP) operating expenditure;
- year on year progress on each of the above against targets; and

⁴⁵ Chapters 6, 12 and 13 define and explain baseline, new and PPP expenditure, respectively.

- progress on baseline and new operating expenditure, relative to England and Wales.

Table 16 sets out our framework for monitoring progress on operating expenditure.

Table 16: Framework for monitoring progress on operating expenditure⁴⁶

Sources of information	Operating expenditure			Relative performance
	Baseline	New	PPP	Baseline and new ⁴⁷
<i>Scottish Water</i>				
Annual Return	✓	✓	✓	✓
Regulatory accounts (from 2005)	✓	✓	✓	✓
Monthly operating expenditure returns	✓			
Quarterly investment returns ⁴⁸		✓		✓
Independent comments by Scottish Water's Reporter	✓	✓	✓	✓
<i>England and Wales</i>				
Companies' annual returns				✓
Company regulatory accounts				✓
Independent comments by Reporters in England and Wales				✓
Ofwat's published annual reports				✓
Reporting progress	↓			
	Costs & performance reports			

Monitoring levels of service

We monitor the level of Scottish Water's customer service performance by using the overall performance assessment (OPA) that Ofwat has developed. We would propose to monitor improvements in customer service (financed by new operating cost) relative to the OPA or, if this is not appropriate, to some other clearly defined benchmark.

The OPA combines results for customer service measures with other information about performance in drinking water quality and environmental compliance to derive an overall score for the level of service.

Our framework for monitoring performance will focus primarily on the levels of service measures that comprise the OPA. We will also monitor performance against Scottish Water's Guaranteed Minimum Standards (GMS).

Table 17 sets out our framework for monitoring levels of service performance.

Table 17: Framework for monitoring levels of service performance

Sources of information	Guaranteed Minimum Standards	Overall performance assessment
<i>Scottish Water</i>		
Annual Return	✓	✓
Customer Service Performance Return	✓	✓
Quality Performance Assessments	✓	
Independent comments by Scottish Water's Reporter	✓	✓
<i>England and Wales</i>		
Companies' annual returns		✓
Independent comments by Reporters in England and Wales		✓
Reporting progress	↓	
	Customer service reports	

Conclusion

We believe that our framework for monitoring Scottish Water's performance is robust. The introduction of regulatory accounts in 2005 will further strengthen this framework.

We will continue to publish reports on progress made by Scottish Water, in order to inform stakeholders and encourage discussion and debate. These reports will pay particular attention to changes in the level of service that is provided to customers. They will also examine whether such changes are consistent with any new operating costs claimed by Scottish Water.

⁴⁶ The components of operating expenditure are defined in earlier chapters of this volume and are summarised in Chapter 14.

⁴⁷ Comparisons of relative performance exclude PPPs as there is no direct parallel in the water and sewerage industry in England and Wales.

⁴⁸ We use the quarterly investment returns to help monitor new operating expenditure because this expenditure is driven largely by Scottish Water's capital investment.

Questions for consultation

Chapter 3: Types of regulatory framework

1. Do stakeholders agree that the RPI-X framework is appropriate to the regulation of Scottish Water? If not, what alternative would you suggest and why?

Chapter 4: RPI-X incentive framework and benefit sharing

2. Assuming that an RCV approach is applied in Scotland in the *Strategic Review of Charges 2006-10*, is a cap required on the capital expenditure to be included in the RCV?
3. If so, should we implement a service-capping rule, similar to the one implemented by Ofwat in England and Wales⁴⁹?
4. Does the RPI-X mechanism provide appropriate incentives for Scottish Water?
5. Are there any significant differences between private and public companies, which we have not taken into account in this analysis?
6. Does our assessment of the importance of benefit sharing in providing incentives to Scottish Water to achieve efficiencies appear reasonable?
7. What level of transparency is appropriate for management bonuses in a public sector organisation?
8. Should management bonuses for Scottish Water be aligned with independently assessed regulatory and customer service targets?

Chapter 5: What is operating expenditure and why is it important?

No questions for consultation

Chapter 6: Establishing a baseline for operating costs

9. When setting operating expenditure efficiency targets, do respondents agree that we should use 2003-04 as a base year for the draft determinations and 2004-05 as a base for the final determinations?
10. We invite comments on the most appropriate figure to use for baseline operating expenditure in 2005-06 and the impact that different assumptions may have.
11. What factors do stakeholders believe could result in changes in baseline operating expenditure in the period 2006-10?
12. Do stakeholders think that our criteria for assessing Scottish Water's claims for changes in baseline operating expenditure are sufficient?

Chapter 7: Ensuring like-for-like comparisons of efficiency

13. Do respondents agree that our proposed "top-down" approach to benchmarking will provide the most appropriate method of comparing Scottish Water's performance?

Chapter 8: Ofwat's approach to assessing operating cost efficiency

14. Do respondents agree that the Ofwat econometric models for operating expenditure should be extended to Scotland for our *Strategic Review of Charges 2006-10*.

Chapter 9: An alternative method to assessing operating cost efficiency

15. What are your views on this alternative model?
16. What other approaches to the assessment of the scope for operating efficiency would you suggest? How would these work?

⁴⁹ Ofwat, 'A further consultation on incentive mechanisms: Rewarding future outperformance and handling underperformance of regulatory expectations', June 2003.

Chapter 10: Ensuring modelled results are objective and fair

17. Do you agree that it is appropriate to take into account differences in the scope of activities when determining Scottish Water's operating efficiency, relative to England and Wales? If so, which differences do you think are important to recognise and possibly take into account?
18. Do you agree that it is appropriate to take into account differences in levels of service when determining Scottish Water's operating efficiency, relative to England and Wales? If so, which differences do you think are important to recognise and possibly take into account?
19. How should we assess the cost of any such differences?

Chapter 11: The scope and timeframe for improvement

20. Do respondents agree with our proposed approach to assessing the rate at which any efficiency gap may be closed? If not, what approach would they suggest?

Chapter 12: New operating expenditure

21. Do respondents agree that the criteria that we adopted for assessing new operating expenditure at the *Strategic Review of Charges 2002-06* remain appropriate for assessing such expenditure for 2006-10?
22. Do respondents agree that there is greater scope for achieving efficiencies in new operating expenditure than in base operating expenditure?

Chapter 13: Public Private Partnership financing

23. Do respondents believe that we should set an efficiency target on PPP if we can identify that it is currently a more expensive option for customers? If not, why should customers be asked to pay more?

24. Do respondents believe that our approach to looking at the value for money of PPP is appropriate?

25. If we determined that an efficiency target was appropriate, should this be implemented at the start, during, or at the end of the next regulatory control period?

Chapter 14: Setting the allowed level of operating costs

26. What are the views of respondents on our proposals to set a level of allowable operating cost as the target for Scottish Water in each year of the regulatory control period?
27. What are the views of respondents on the scope for improved efficiency at Scottish Water? It would be helpful if stakeholders could express their views either with reference to the performance of the companies in England and Wales or to Scottish Water in isolation, and give reasons.

28. Do respondents have any views regarding Scottish Water's performance beyond 2010?

29. Do respondents believe that it is appropriate for us to set allowable levels of operating expenditure for Scottish Water such that the corporation has an incentive to outperform? If so, what are respondents' views on the split between efficiency targets and the incentive to outperform?

30. Should we seek to set separate levels of allowable operating expenditure for the 'wholesale' sewerage, 'wholesale' water and non-domestic retail components of Scottish Water?

Chapter 15: Regulating levels of service

31. What are respondents' views on the benchmarking approach and the target setting approach?
32. What are respondents' views on our proposed approach?

33. Are there any targets (eg leakage) that are appropriate in pursuing the benchmarking approach?

Chapter 16: Monitoring operating expenditure and levels of service

34. What are respondents' views on our proposed approach to monitoring Scottish Water's performance?

Chapter 5

The scope for capital expenditure efficiency

Introduction

This volume describes how we propose to set the level of expenditure that should be allowed to Scottish Water to meet the investment priorities outlined in the Minister's Guidance at the *Strategic Review of Charges 2006-10*.

Unfortunately we have had to delay publication of this volume from September 2004 until now. We considered that it was not in customers' interests to publish our approach to assessing capital efficiency for the next regulatory control period until outstanding issues relating to the capital expenditure programme from the current regulatory control period had been resolved.

We welcome responses from stakeholders to the specific consultation questions that are set out at the end of each chapter, as well as any other comments they might wish to make. Responses should be sent to:

Katherine Russell
Water Industry Commissioner for Scotland
Ochil House
Springkerse Business Park
Stirling FK7 7XE

or by email to :
SRCmethodology@watercommissioner.co.uk

Responses should arrive by 17 January 2005. We recognise that the period for consultation is short. This is, however, a direct result of the difficulty that we have had, and continue to have, in defining the baseline investment programme for the current regulatory control period. We apologise for any inconvenience which the shorter consultation period may cause.

Capital expenditure in the Scottish water and wastewater industry

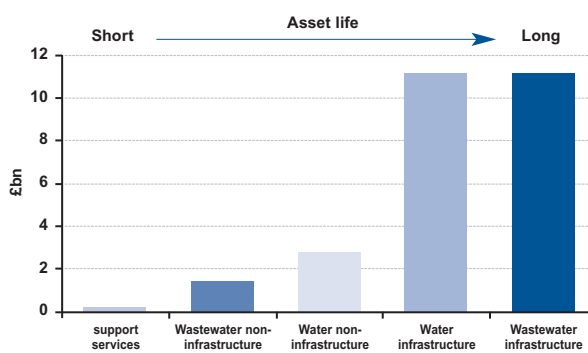
The assets required to deliver a water and wastewater service can be divided into five broad types:

- water infrastructure;
- water non-infrastructure;

- wastewater infrastructure;
- wastewater non-infrastructure; and
- support services.

Figure 1 illustrates the replacement cost and expected life of Scottish Water's assets.

Figure 1: Replacement cost and asset life by type of asset



Scottish Water is responsible for a larger geographic area than any of the water and wastewater companies in England and Wales. However, the asset bases either side of the border appear to have many similarities. This is illustrated in Table 1. The high proportion of the Scottish population that lives in the Central Belt and coastal communities may explain the possibly unexpected result.

Table 1: Comparison of the asset base

	Scottish Water	Ranking	Water and wastewater companies in England and Wales		
			Smallest	Mean	Largest
Length of water mains (km)	46,508	1st	11,226	27,706	45,674
Length of main per property (m)	18.74	5th	9.07	15.94	21.10
Length of sewers (km)	44,854	3rd	8,820	30,573	67,151
Length of sewer per property (m)*	13.34	7th	11.93	13.68	14.85
Number of water treatment works	371	1st	33	102	154
Number of wastewater treatment works**	616	4th	349	630	1,071

* Excludes lateral sewers as they are not part of the sewer network in England and Wales.

**Excludes 1,220 very small public septic tanks installations, which are uncommon in England and Wales.

Historic investment in Scotland

Investment in the water industry in Scotland began to increase significantly after the three former water authorities were established in 1996. This was delivered both by conventional procurement and by PFI.

The level of investment in England and Wales increased significantly after privatisation in 1989. By 1996-97, the privatised companies were investing some £3.5 billion per year.

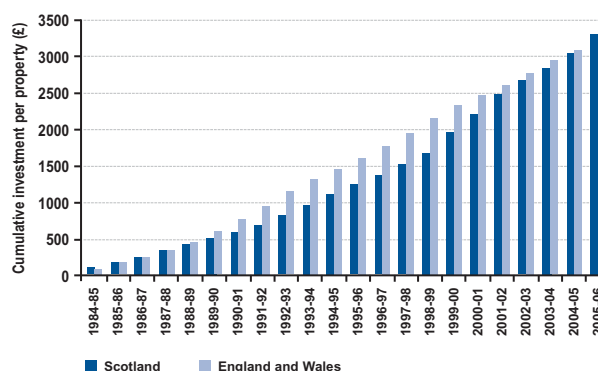
Investment in England and Wales has recently stabilised at around £3 billion a year. The *Strategic Review of Charges 2002-06* foresaw investment in Scotland stabilising at an average level of around £450 million each year.

We can compare the level of investment in Scotland with that in England and Wales using the measure of investment per property. Information about investment in Scotland is available for the years before 1996 from the capital account of local authority returns. This may actually understate the level of investment in Scotland as it will exclude any spending on assets from the revenue account.

Our analysis shows that investment per connected property in Scotland will have matched that in England and Wales over the period 1985-2006. Although investment in England and Wales was higher immediately after privatisation, the situation has reversed in recent years.

By the end of *Quality and Standards II*, the Scottish water industry is set to have invested more in cash terms for each connected property than was invested in England and Wales over a 10-year and a 20-year period.

Figure 2: Cumulative investment per property in Scotland and in England and Wales 1984 -2006⁵⁰



The conclusion from this analysis, therefore, is that if there is a significant backlog of investment in Scotland relative to that in England and Wales, it can only be a result of historical inefficiency, not a lack of investment funds. Customers in Scotland have paid for, and so deserve, an equivalent standard of service to that which customers in England and Wales receive.

Potential overhang from Quality and Standards II

It appears increasingly likely that the *Quality and Standards II* investment programme will not have been delivered in full by April 2006. The post-efficiency value of the programme is £1,808 million. Capital investment inflation is likely to increase the efficient cost of delivering this investment programme to approximately £1,930 million. Scottish Water has also been tasked with delivering a further £110 million of new outputs. This brings the total efficient cost of the investment programme for the current regulatory control period to around £2,040 million.

We have reviewed the quarterly Capital Investment Return that covers the period up to 30 September 2004. This review identified that a proportion of investment spending did not appear to relate to projects from the WIC18⁵¹ baseline. To the end of September, Scottish Water had invested £961 million, of which £693 million related to projects identified as *Quality and Standards II*. There was no identified expenditure relating to the agreed new outputs.

⁵⁰ Adjusted for inflation and for the effect of PFI investment. Efficiency adjustment is not included. The forecast expenditure in Scotland for 2004-05 and 2005-06 is based on figures supplied by Scottish Water.

⁵¹ WIC18 is a regulatory letter that was sent to the three authorities in May 2001. It asked for a detailed baseline for the *Quality and Standards II* investment programme of each authority.

In our agreement with Scottish Water, which determined how much spend-to-save should be included in the original investment programme, we agreed that £47 million of *Quality and Standards I* overhang inherited by Scottish Water could be included. This increased the identifiable baseline investment spending to £740 million.

The current regulatory control period ends in March 2006. This leaves 18 months before *Quality and Standards III* is due to start. If Scottish Water were able efficiently to spend £344 million in the remainder of the current financial year and £590 million in 2005-06, this would imply a total *Quality and Standards II* investment spending of £1,674 million.

We have analysed the small proportion of the programme that has been completed to beneficial use⁵² to date, and concluded that Scottish Water has delivered this element of the investment programme inefficiently. This inefficiency amounts to £10 million.

Our analysis suggests that a total of £1,664 million of *Quality and Standards II* outputs will have been delivered by the end of March 2006. This compares with a revised total investment programme of £2,040 million. Table 2 summarises the analysis.

Table 2: Analysis of likely Quality and Standards II overhang

Item	Quarterly Capital Investment Return analysis (£m)
<i>Quality and Standards II</i> spent to date (30/09/04)	693
Non-Quality and Standards II spent to date (30/09/04)	268
Total spending on investment	961
Check of Non-Quality and Standards II:	
Notified new outputs agreed (30/09/04)	0
Agreed <i>Quality and Standards I</i> carry-over into <i>Quality and Standards II</i> period (post-efficiency)	47
Total	47
Revised <i>Quality and Standards II</i> investment spending	740
Revised Non-Quality and Standards II	221
Total spending	961
Estimated maximum efficient investment spending for remainder of 2004-05	344
First half of 2004-05 investment spending	216
Total maximum estimated investment spending	560
Estimated maximum 2005-06 investment spending	590
Total expected <i>Quality and Standards II</i> investment spending (including new outputs)	1,674
Estimated inefficiency on completed projects	(10)
TOTAL EXPECTED QUALITY AND STANDARDS II OUTPUTS DELIVERED (INCLUDING NEW OUTPUTS) (a)	1,664
Baseline <i>Quality and Standards II</i> investment programme	1,810
Notified new outputs (WIC47)	110
Capital inflation above assumptions at Strategic Review of Charges	120
TOTAL REQUIRED INVESTMENT TO DELIVER OUTPUTS (b)	2,040
UNDELIVERED PORTION (b)-(a)	376

We outlined this analysis in our WIC51 letter to Scottish Water. Scottish Water has since substantially revised its regulatory return. Our review of the new information has not materially changed our view on the likely overhang. The revised information would imply that more of the money has been spent on *Quality and Standards II* projects. However, it appears likely that inefficiency or overhang from *Quality and Standards I* will have more than compensated for the extra money invested on *Quality and Standards II* projects.

We will continue to work with Scottish Water to understand the overhang from *Quality and Standards II* that will impact on the next regulatory control period. The output from this work will be a defined list of projects and status codes for the remainder of *Quality and Standards II*. This will need to be reconciled with the quarterly investment return for the period up to September 2004.

⁵² Beneficial use is the final stage of investment when outputs begin to be delivered.

If we are unable to agree the overhang with Scottish Water, we will use the information available from regulatory returns to set a baseline for the remainder of the current regulatory control period. We will only recognise spending as efficient if it appears on our baseline of projects.

The Minister's Guidance for the next regulatory control period is due at the end of January 2005. We will need to establish our baseline of the remaining *Quality and Standards II* projects if we have not been able to reach agreement with Scottish Water by 28 January 2005.

Investment programme deliverability

Our analysis suggests that there is a limit to the size of a capital programme that can be delivered efficiently. We have examined the capital programmes delivered south of the border and the improvement in capital efficiency that has been achieved in the past few years. We believe that there is a risk that having a capital programme that is too large could adversely impact on efficiency.

The *Quality and Standards II* investment programme was approximately £1.9⁵³ billion over four years. This total investment is equivalent to £833 per household in Scotland.

Five water and sewerage companies in England and Wales are either broadly the same size as Scottish Water or larger. Thames Water, Severn Trent Water and United Utilities are larger; Anglian Water and Yorkshire Water are similar in size to Scottish Water.

The following table compares the size of programmes delivered or defined by the companies with the *Quality and Standards II* programme.

Table 3: Summary of relative size of Quality and Standards II

	Largest four-year programme	Median four-year programme	Largest four-year programme per connected property
Thames	£2,200m	£1,992m	£540
Severn Trent	£2,773m	£2,078m	£782
United Utilities	£2,509m	£2,174m	£849
Anglian	£1,856m	£1,315m	£841
Yorkshire	£1,727m	£1,236m	£838
<i>Quality and Standards II</i>	£1,930m ⁵⁴		£833

This shows that *Quality and Standards II* was a very large investment programme. It was larger than the largest programme ever delivered by Anglian Water and Yorkshire Water (the two companies of similar size to Scottish Water). It is also very large in terms of investment per connected property.

In its first draft business plan, Scottish Water proposed that it should deliver a *Quality and Standards III* investment programme of approximately £2.2 billion during the next regulatory control period. This was in addition to approximately £260 million of *Quality and Standards II* that would not have been spent. This would equate to a total investment programme of some £615 million per year, or £2.46 billion over the four-year regulatory control period. This is equivalent to more than £1,000 per connected property.

The extent of the challenge that Scottish Water sets itself in its first draft business plan is demonstrated in Table 4. This shows the frequency with which the five largest companies south of the border have delivered four-year investment programmes of more than £1.6 billion.

⁵³ The original £1.81 billion investment programme included in the *Strategic Review of Charges 2002-06* increases to £1.93 billion as a result of higher than expected capital outputs inflation.

⁵⁴ See footnote 50.

Table 4: Delivery of programmes of more than £1.6 billion

Size of four-year investment programme	Size of programme per year	Number of occasions	Cumulative %
Over £2.6 billion	£650m	2	2.4
Over £2.5 billion	£625m	4	4.7
Over £2.4 billion	£600m	6	7.1
Over £2.3 billion	£575m	11	12.9
Over £2.2 billion	£550m	15	17.6
Over £2.1 billion	£525m	23	27.1
Over £2.0 billion	£500m	29	34.1
Over £1.9 billion	£475m	41	48.2
Over £1.8 billion	£450m	44	51.8
Over £1.7 billion	£425m	48	56.5
Over £1.6 billion	£400m	54	63.5
Under £1.6 billion	£400m	31	100.0

This reveals that Scottish Water's proposed investment programme is almost without precedent in the recent history of the water and sewerage industry in the UK. The privatised companies have delivered programmes of more than £2.4 billion on only six occasions, or 7.1% of all of the possible four-year periods. None of these larger investment programmes has been delivered recently, nor was it as large as the proposed programme of Scottish Water on a per connected property basis.

How Ofwat assesses capital expenditure efficiency

The methods that Ofwat uses to assess capital expenditure efficiency for the companies south of the border have been developed over a number of years. Ofwat uses these methods as part of its price setting process. We have used Ofwat's methods to monitor Scottish Water's progress towards achieving the efficiency targets set in the *Strategic Review of Charges 2002-06*.

Capital maintenance econometrics

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

The cost drivers that are included within the econometric models are known as 'explanatory factors'. There are nine models and they take different forms. These are summarised in Table 5.

Table 5: Summary of econometric models and explanatory factors

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

We will use these models to assess the predicted level of capital maintenance for Scottish Water. This is an important benchmark and will ensure that customers receive value for money both in the short and in the longer term.

Capital works unit costs

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

The cost base is a database of costs, termed 'standard costs', for a wide range of standardised projects, or units of work. We can compare the standard costs submitted by Scottish Water and the companies south of the border to assess relative procurement efficiency.

The cost base approach to assessing relative efficiency has been subject to detailed scrutiny by the Monopolies and Mergers Commission and by the Competition Commission. Both found the approach to be fit for purpose.

Ofwat reviews the submissions received from the companies in order to:

- ensure that the standard costs which are submitted comply with the specifications and guidance;
- ensure that the engineering judgement grades (EJG)⁵⁵ have been correctly applied and interpreted;
- confirm that companies have derived their standard cost estimates independently;
- subject all submissions to an independent audit; and
- ensure comparability between companies.

In its 2004 price determination, Ofwat allowed only one company-specific factor – an adjustment for regional variations in construction, labour and tender costs. Ofwat has based its assessment of these adjustments on a study of the building and construction cost indices that was published by the Building Cost Information Service and the Department of Trade and Industry.

Ofwat uses the lowest reported cost as the benchmark standard cost, provided it complies with the following criteria:

- the standard cost used to derive the benchmark closely complied with the standard cost specification;
- at least 3% of the industry (measured in terms of turnover) reported unit costs at or below the benchmark standard cost;
- the standard cost was sufficiently robust to warrant an EJG of B3 or better;
- single company standard costs were generally used to derive the benchmark for items commonly procured from a single source over a range of sizes;
- the relevant benchmark is independently endorsed by consultants to Ofwat, Babtie Group.

Adjusting the Ofwat approach for Scotland

There may be factors that influence investment costs which are not adequately reflected in the analysis techniques that we have described above. Our assessment needs to take account of any relevant factors that are beyond management control but influence costs. We therefore ask Scottish Water, as part of its business plan submissions, to draw to our attention all factors that influence cost. This should include factors that both increase or decrease cost.

We want to ensure that our efficiency targets neither unduly penalise nor reward Scottish Water. Some commentators have argued that it is unfair to draw comparisons between Scottish Water's performance and that of the privatised water and sewerage companies in England and Wales. They cite the following factors:

- Scotland's geography (size, remote islands, long coastline, topography.)
- Its population settlement patterns (remote communities and concentrated, dense urban areas);
- The extent of the assets required to serve customers in Scotland (long mains, small isolated treatment works);
- The quality of the assets inherited by Scottish Water (condition and performance of the mains, sewers, treatment works, pumps etc);
- The nature of the customer base.;
- The fact that Scottish Water is in public ownership (political interest, Scottish Water's duty to Scotland, remit and freedom of management); and
- The short time that Scottish Water has had to mature and improve.

We propose to assess special factors for capital expenditure in the same way as we assess special

⁵⁵ Engineering Judgement Grades - these are 'confidence' scores that are assigned to the information contained in the submission.

factors for operating expenditure. We will consider these and other factors carefully before determining the scope for capital efficiency.

In summary, Scottish Water has to provide evidence in the following areas to justify an adjustment to a special factor:

- What is the justification for the special factor? Scottish Water will need to set out whether the factors are the result of special obligations, the character of all or part of its customer base, or the result of historical development of the water and wastewater systems in its area of supply.
- How do the special factors impact on Scottish Water's costs?
- How has Scottish Water sought to manage the additional costs arising from the special factors and limit their impact?
- Are there other special factors that reduce costs? If so, have these been quantified and offset against the upward cost pressures?

The Scottish Executive's consultation: 'Investing in water services 2006-14'

Scottish Ministers will define the investment priorities for the water industry in Scotland. The Quality and Standards process identifies the priorities of customers, the quality regulators⁵⁶ and other stakeholders. Ministers sought views on these issues in its consultation, 'Investing in water services 2006-14'.

Quality and Standards III will determine the investment priorities for the period 2006 to 2014. Our *Strategic Review of Charges 2006-10* will only cover the first half of this period.

Total investment is limited by the following factors:

- **Customers' bills:** customers ultimately pay for investment and higher investment will result in higher bills.

- **Ability to deliver the programme efficiently:**

Scottish Water has a very large number of assets and individual investment projects tend to be relatively small. There is a limit to the size of investment programme that can be managed effectively by Scottish Water.

- **Capacity of the civil engineering market:** The civil engineering market in Scotland was recently estimated at £1.4 billion per year, with Scottish Water currently accounting for around one-third of this total.

It is important to be able to prioritise competing demands for investment. There will be demands to improve the levels of service to customers, to improve compliance with public health and environmental standards and to connect more properties to the water and sewerage network.

'Investing in water services 2006-14' sets out the Scottish Executive's views on the likely costs [based on Scottish Water's costing of the required investment] of different levels and types of investment. The consultation sought views on investment priorities and on whether or not bills should rise to pay for each type of investment.

The consultation proposed the following principles:

- cost-effectiveness;
- affordability;
- deliverability; and
- sustainability;

Capital maintenance

Capital maintenance is important to the on-going effective management of the assets. Replacing assets in a timely way is essential to maximising the cost effectiveness of the network's performance and maintaining the level of service to customers.

⁵⁶ The Scottish Environment Protection Agency (SEPA) and the Drinking Water Quality Regulator (DWQR).

The '*Investing in water services*' consultation outlined a number of different approaches to assessing the appropriate level of investment in capital maintenance and suggested that a 'serviceability' approach should be used. This involves identifying levels of service to customers then costing how much it would cost to maintain this level of service over the period.

Scottish Water estimated that maintaining current levels of service would cost around £275 million a year. Improving serviceability would cost around £340 million a year.

Growth investment

The consultation also sought views on investment in new development and first-time connections.

Estimates for business and housing developments vary. For example, it is estimated that between 120,000 and 230,000 houses will be built in the period 2006 to 2014. Scottish Water has estimated that the cost of connecting 230,000 houses to the public water and sewerage network is around £1 billion over the eight-year period. This cost will to some extent be met by a new charging regime for connections to the network⁵⁷.

Improving the environment and public health

In recent years we have begun to invest significantly in improving the water environment. The consultation identifies that much remains to be done. There are more than 30 separate legal drivers for investment. Many of these drivers relate to European Union Directives.

Scottish Water has estimated that it will cost around £2.5 billion to meet mandatory standards. A further £500 million would be required to demonstrate progress towards the guideline standards.

It was also identified that significant investment was required to remove harmful substances, such as trihalomethanes and lead, from the water supply. Scottish Water has estimated that it needs to invest around £1.65 billion to reach the regulatory minimum position by 2010.

Improving customer service

The consultation identified three high priority customer issues. These are:

- odour from wastewater treatment works;
- water pressure; and
- sewer flooding.

No estimates of the cost of dealing with odour are included in the consultation. Scottish Water estimated that it could substantially reduce the number of properties at risk of low pressure with an investment of £40 million. Scottish Water also suggested investment in reducing sewer flooding of £240 million.

The investments identified in the '*Investing in water services*' consultation are summarised in Table 6.

Table 6: Summary of costs in 'Investing in water services' consultation

Description	Cost (£ million)
Maintenance	
Water	925
Waste water	1,300
'Higher standards'	500
Extending public networks	
Deep connections in new developments	500
First time water	200
First time waste water	600
Environmental improvements	
Legal minimum	2,500
Progress towards guideline	500
Drinking water and water resources	
Regulatory minimum	1,650
'Reasonable aspirations'	1,750
Other priorities for customers	
Odour	Unknown
Pressure	40
Sewer flooding	240
Total	10,705
Amount per annum (total divided by 8)	1,338

⁵⁷ See Chapter 3 of this publication and Volume 3 of our methodology.

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

One of the disappointments of *Quality and Standards II* has been the difficulties faced by both stakeholders and customers in monitoring Scottish Water's delivery of the investment programme. This has resulted from the lack of clearly defined projects and associated outputs that comprised the baseline programme.

Quality and Standards II defined the investment programme for the period April 2002 to March 2006. In May 2001 we wrote our WIC18 letter to the three authorities. This letter sought to establish a baseline for the investment programme of each authority.

We did not envisage that the authorities would find it difficult to provide the information we required, as they had already provided detailed costs for *Quality and Standards II*. North of Scotland Water Authority and West of Scotland Water Authority were able to provide a relatively detailed investment programme. East of Scotland Water Authority, however, failed to provide the required level of detail. When Scottish Water was created in April 2002, this problem had still not been properly addressed.

A number of workshops were held in March 2003 where the key stakeholders examined the WIC18 programme lists, line by line, and allocated projects into two distinct categories. The 'red' category meant that the project was no longer required and was hence a candidate for replacement with an alternative project; while the 'green' category was for WIC18 projects that were still required.

The WIC18 experience has taught us that a fully defined capital investment programme must be in place at the outset of the next regulatory control period. Our discussions with the Scottish Environment Protection Agency (SEPA) and the Drinking Water Quality Regulator (DWQR) also lead us to conclude that the outputs to be delivered by each project must be clearly defined and quantified at the same time.

We propose that the baseline investment programme for *Quality and Standards III* should be published in full. This would help ensure transparency and accountability in the delivery of agreed benefits to customers and to the environment.

Defining the investment programme

Our requirement for a clear and detailed baseline for the *Quality and Standards III* investment plan is broadly consistent with those that are required by Ofwat for the companies south of the border.

The baseline is a key part of the regulatory contract between Scottish Water and its customers. The investment plan must be consistent with Ministerial Guidance⁵⁸. This Guidance will set out the Scottish Executive's detailed investment priorities.

Scottish Water's proposed investment plan can be split into three main elements:

- capital maintenance;
- quality; and
- supply/demand.

The level of definition that is possible for each of these three elements varies. Some projects can be specified in advance, while others may be more reactive⁵⁹. Capital maintenance projects tend to be more difficult to define than quality investment projects.

We will require a detailed list of all of the quality projects and supply/demand projects. The detailed list should also include all capital maintenance projects that have a value of more than £250,000.

Each investment project should have:

- a unique code;
- a unique name; and

⁵⁸ Initial guidance was provided by the Minister for Environment and Rural Development, Ross Finnie MSP, in a letter to the Chairman of Scottish Water and the Water Industry Commissioner dated 26 May 2004. Further guidance is expected in January 2005.

⁵⁹ Reactive projects are those associated with operational needs which arise at short notice; for example, replacing a piece of plant or section of pipe which has failed unexpectedly or where operational performance has declined over a short period of time.

- a geographical reference (place name and water supply zone/drainage area);
- a defined output.

All capital maintenance projects should identify clearly:

- the work proposed (its size, quantity and type);
- whether the project is planned or reactive;
- the cost; and
- an appropriate output measure.

The timetable for the delivery of projects should include:

- annual projected investment spend for each project – this should include any expenditure either before or after the regulatory control period;
- identification of key project milestones (for example when planning consent is granted); and
- the project's expected completion date.

We will require identical information for any overhang from *Quality and Standards II*.

Investment programme review

All regulators review the draft investment programmes that regulated companies provide. We propose to work closely with the Reporter, SEPA and the DWQR to review the investment programme proposed by Scottish Water. This is a first important step in ensuring that the proposed programme will meet the requirements of stakeholders and provide value for money for customers. It ensures that the scope of the proposals is appropriate to achieve the objectives set out by Ministers, and that the proposed expenditure is being effectively targeted.

It is important that we establish that the proposed programme will deliver the agreed outputs effectively. We need to be sure that our efficiency analysis is appropriate and consistent with our goal of improving value for money to customers. There is obviously no

point in delivering an ineffective investment plan efficiently.

We propose to use the following criteria in our review of the investment programme:

- Is the programme sufficiently defined to allow customers and stakeholders to monitor delivery? In particular, does it meet the level of definition set out in our guidelines?
- If delivered in full, does the proposed programme meet the objectives set out in Ministerial Guidance? If not, what are the omissions? If so, does it exceed the requirements? In particular, do the quality regulators, SEPA and DWQR, agree that the relevant quality objectives will be met by the proposed investment?
- Are there projects in the programme which do not contribute to the required objectives?
- Are there errors in the programme; for example, in the identification of projects and the associated outputs?
- Is the programme properly costed?
- Are the solutions proposed by Scottish Water appropriate?
- Do they represent best practice?
- Are the proposed solutions supported by the DWQR and SEPA?
- Have the projects in the programme been allocated measurable, defined outputs?
- Do the projects have clearly defined delivery dates?
- Are the delivery dates realistic, both in terms of individual project construction times and the overall capacity of the industry to deliver the programme efficiently?

The process of reviewing the investment programme will provide us with an indication of areas where there is

scope to reduce or increase the outputs required from Scottish Water.

The output from the review should be a properly costed, fully defined list of capital investment projects, which, if delivered in full, will meet the objectives set out by Ministers for the regulatory control period.

How we propose to handle capital maintenance investment

It can be difficult to determine the correct level of expenditure on capital maintenance. Too much investment is likely to result in assets being replaced unnecessarily, leading to higher prices and little benefit for customers. Too little investment is likely to mean a gradual decline in performance and customer service.

Approach to capital maintenance in Quality and Standards II

During the *Quality and Standards II* process, an 'asset stewardship' approach was used to define the appropriate level of capital maintenance. This approach uses three key parameters to identify the required level of capital maintenance:

- condition;
- performance; and
- age.

Although the asset stewardship approach provides a reasonably sound engineering assessment of the state of the asset base, the approach has a number of weaknesses. Most notably:

- the gradings assigned for condition and performance are subjective and the approach to grading may vary between companies;
- the information which underpins the gradings and the assessment of remaining life may be of varying age and quality;
- there is no assessment of the level of service that the asset provides to customers; and

- there is no assessment of the risks associated with failure of the asset.

In addition, the approach tends to overestimate the requirement for capital maintenance. This is because it overlooks the operator's capacity to:

- rationalise the assets (by assessing whether or not it is still required);
- adopt strategic solutions, by reorganising the network in order to reduce or remove the asset;
- use new technology; and
- implement cost-effective operational solutions to defer replacement.

At the last Strategic Review of Charges, we accepted the capital maintenance requirement identified in *Quality and Standards II* but we applied an efficiency target to reflect the scope for strategic asset management efficiency.

The serviceability approach

In its 1994 and 1999 price reviews, Ofwat used a serviceability approach when assessing whether the level of capital maintenance investment by the companies was appropriate. This involved monitoring a set of defined asset and customer service performance indicators for each company. If these indicators were broadly constant, or marginally improving, then it was assumed that the historic level of capital maintenance spend was about right. If the indicators showed a decline in performance, this indicated that the company had historically been investing too little in capital maintenance.

At the last Strategic Review of Charges we were not able to use the serviceability approach because at that time we did not have sufficiently good quality information about asset performance and customer service levels.

The companies in England and Wales felt that the serviceability approach did not take sufficient account of the risk of asset failure in the future. Ofwat proposed a

collaborative approach to addressing these concerns. The industry commissioned UK Water Industry Research (UKWIR) to devise a more strategic, 'top-down' approach to assessing capital maintenance. The result was the 'Common framework for capital maintenance planning'.

Ofwat set out a four-stage approach – consistent with the UKWIR Common Framework Approach – to assess the companies' capital maintenance requirements in the 2005-10 regulatory control period. The four stages are as follows:

Stage A Maintaining serviceability to customers to date

This involves understanding past performance, trends from the serviceability indicators, and company actions necessary to address serviceability issues. This 'backward looking' assessment is mainly informed by the serviceability indicators.

Stage B Is the future period different?

This involves understanding what would be different about the next regulatory control period that would necessitate changes in the typical levels of activity that have been sufficient in the past. This element is informed by the company's assessment of its economic level of capital maintenance. This should be based on the UKWIR approach and should be both forward-looking and risk-based.

Stage C Scope for improvements in efficiency

This involves assessing the relative efficiency of each company in terms of its approach to capital maintenance and capital works, its capital/operating expenditure balance and the potential for each company to improve its efficiency over the next price review period. This uses Ofwat's established approaches for determining relative efficiency and assessing each company's scope for further efficiency improvements.

Stage D Impact of the enhancement programmes

This requires an understanding of the implications of each company's quality investment programme on the base capital maintenance programme. This is informed by an assessment of whether the quality programme defers or removes the requirement for capital maintenance expenditure.

Our proposed approach to capital maintenance in the Strategic Review of Charges 2006-10

In assessing Scottish Water's capital maintenance requirements in the *Strategic Review of Charges 2006-10*, we will take account of:

- Ministerial Guidance on the overall objectives of the investment programme;
- the capital maintenance requirement identified in the *Quality and Standards III* process;
- the capital maintenance requirement identified in Scottish Water's first and second draft business plans; and
- the Reporter's assessment of Scottish Water's capital maintenance proposals.

We will also review Ofwat's comments on the companies' plans for capital maintenance in its final determinations⁶⁰.

Our approach to assessing the requirement for capital maintenance can be divided into three stages:

Stage 1 Review capital maintenance spending and the condition and performance of the asset base

We will update our analysis of the historic levels of funding for the industry in Scotland and draw comparisons with England and Wales.

⁶⁰ *Future water and sewerage charges 2005-10* – Final determinations – December 2004.

Stage 2 Assess Scottish Water's capital maintenance proposals contained in its first and second draft business plans

We will analyse Scottish Water's capital maintenance proposals to establish:

- whether the proposals match the Ministerial Guidance;
- whether Scottish Water has followed best practice – we will analyse whether it has adopted techniques consistent with the UKWIR common framework approach and best practice asset management;
- the validity of assumptions underpinning Scottish Water's proposals;
- the accuracy of Scottish Water's costing process; and
- the extent of overlap between the capital maintenance proposals and other elements of the investment programme.

Stage 3 The scope for efficiency in delivering the capital maintenance programme

Our proposed methodology for determining the scope for efficiency in the delivery of capital maintenance will include the following stages:

- an assessment of the level of capital maintenance expenditure required by Scottish Water, given its current asset base. This assessment will be carried out using Ofwat's capital maintenance econometric models;
- an adjustment to the required level of capital maintenance expenditure to take account of any circumstances specific to Scotland that could affect Scottish Water's costs; and
- an assessment of the scope for efficiency. We propose to use the cost base approach to determine the scope for efficiency and draw on the evidence gathered by Ofwat on the scope for continuing improvement. We propose to use the scope for

efficiency either to adjust upwards the results of the econometric models or to reduce the cost of the capital maintenance programme proposed by Scottish Water in its second draft business plan.

How we propose to handle investment in improving the level of service

Investment in improving the water quality and environment has, in recent years, been the largest driver of capital investment in the water industry in Britain. This is likely to continue for the foreseeable future. Quality investment is usually targeted at one or more of the following:

- environmental improvements, such as additional treatment of wastewater;
- improved drinking water quality, such as a reduction in the number of samples contains harmful bacteria; and
- increased levels of service for customers, such as reduced levels of sewer flooding.

If customers are to receive value for money it is vital that this large quality investment programme is:

- properly defined;
- accurately costed; and
- effectively and efficiently delivered.

Our approach to Scottish Water's quality investment programme

In assessing Scottish Water's quality investment proposals in the *Strategic Review of Charges 2006-10* we will take account of:

- Ministerial Guidance on the overall objectives of the investment programme, with particular reference to quality objectives;
- the quality investment requirements identified in the *Quality and Standards III* process;

- the quality investment requirements identified in Scottish Water's initial and final business plan submissions; and
- the Reporter's assessment of Scottish Water's quality investment programme.

We will require a detailed investment plan which defines:

- the projects that comprise the programme, by asset;
- the outputs that each project will deliver;
- the expected costs for each project; and
- expected delivery dates.

Our business plan guidance specifies the format of this investment plan.

The Reporter's assessment of Scottish Water's quality investment proposals will form a key part of our analysis. We have provided detailed guidance to the Reporter on the particular areas we wish his audit of the quality programme to address. These include an assessment of:

- whether Scottish Water has provided a consistent interpretation of legal obligations and the Ministerial Guidance;
- whether Scottish Water has included all of the agreed requirements of the quality regulators – we have also asked the Reporter to comment on Scottish Water's challenge of quality obligations placed on it by the quality regulators as part of *Quality and Standards III*;
- how Scottish Water has interpreted the Water Framework Directive and other key legislation which impact significantly on costs;
- the design criteria used by Scottish Water and whether these are consistent with the criteria used to develop the standards;
- Scottish Water's costing process;

- whether the additional operating costs identified from the quality programme are additional, reasonable and have been applied consistently; and

- whether Scottish Water has costed the quality programme in an incremental way, taking full account of any optimisation and synergy benefits;

- cost estimates for defined projects.

We will also assess the scope for efficiency in delivering the quality programme. This assessment of the scope for efficiency will take place in two parts:

- an assessment of the current capital expenditure efficiency gap; and
- an assessment of the on-going scope for improvement in capital expenditure efficiency.

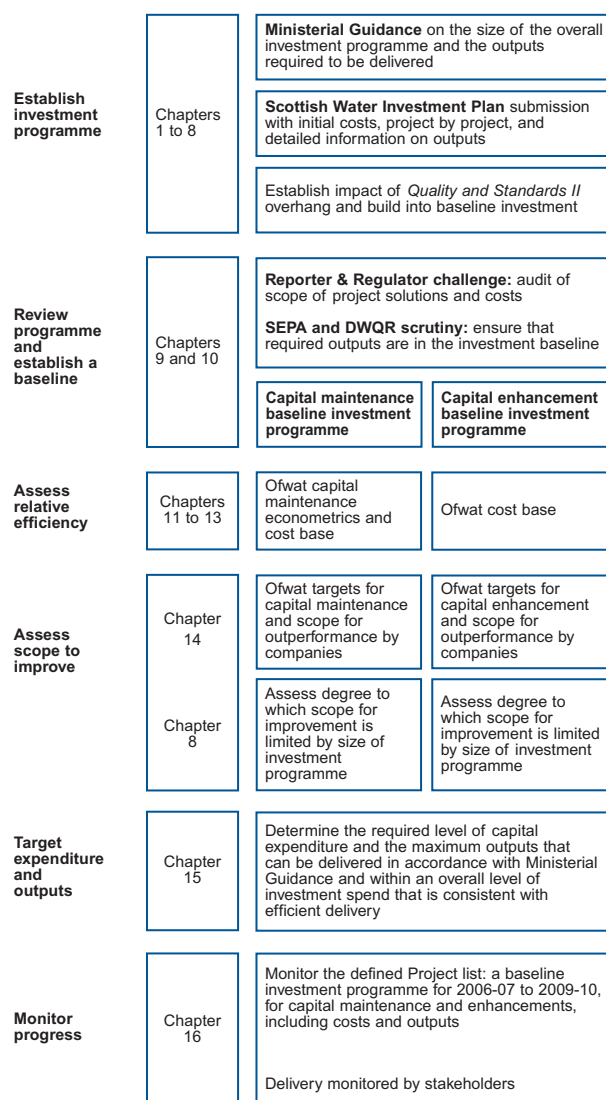
We will use the Ofwat cost base approach to determine the current gap in efficiency and will draw on the work undertaken by Ofwat to assess the scope for on-going improvement.

An overview of how we propose to set the appropriate level of capital expenditure to deliver the priorities outlined in the Minister's Guidance

We need to take account of a range of issues that will affect Scottish Water's ability to deliver its capital investment programme efficiently. These 'critical factors' are:

- the proportion of *Quality and Standards II* that will not have been delivered by March 2006;
- historical evidence on the size of investment programmes that are deliverable; and
- the incentive for Scottish Water to improve its performance.

Our overall approach is set out in Figure 3. This figure also highlights the appropriate chapter references in this volume.

Figure 3: Framework for capital investment targets

We propose to adopt a different approach to setting targets for capital efficiency in capital maintenance and in quality enhancement expenditure. However, in both cases, outperformance of targets will increase the resources that are available to add outputs to the baseline investment programme for the regulatory control period.

We set out our step-by-step process for each investment category below:

For both capital maintenance and capital enhancement

1. Establish a fully defined investment programme

Following Ministerial Guidance, Scottish Water will submit its investment plan in the agreed format for the second draft business plan. This format provides for a detailed list of projects and their associated outputs. It will also include a separate list that outlines in similar detail the proportion associated with *Quality and Standards II* projects that will not have been delivered by the end of March 2006. If we have been unable to reach agreement on the potential overhang by 28 January 2005 we will set an appropriate baseline.

2. Review the programme and establish a baseline

Scottish Water's investment plan will be scrutinised in detail by the Reporter, the quality regulators⁶¹ and this office. We will determine whether the programme meets the objectives set out by Ministers. The output from this process will be a detailed baseline programme, which will list the projects required to deliver the investment requirements for capital maintenance and quality enhancement priorities.

For capital enhancement

3. Assess current efficiency gap

We will use Ofwat's cost base approach to determine the size of the procurement efficiency gap between Scottish Water and the companies in England and Wales.

4. Assess scope for further improvement

We will consider the scope for further improvement based on the targets set by Ofwat.

5. Establish the total allowable expenditure for capital enhancement

We will use the results of Steps 4 and 5 to establish the total allowable expenditure for quality

⁶¹ SEPA and DWQR.

enhancement for each year of the next regulatory period.

For capital maintenance

3. Estimate the annual efficient level of expenditure for Scottish Water, consistent with the companies' recent performance

We will use the capital maintenance econometric models developed by Ofwat to estimate the cost of maintaining serviceability of the current asset base at average levels of efficiency.

4. Adjust the results to take account of special factors

We will consider any representations from Scottish Water that would justify additional funding for specific capital maintenance objectives.

5. Check the adjusted results of the econometric models

We will carry out a series of high-level comparisons to check that the adjusted results of the models do not underestimate Scottish Water's capital maintenance requirements.

6. Use the cost base approach to assess the current gap in capital expenditure efficiency

We will use the cost base approach described in Chapter 11 to determine Scottish Water's current capital efficiency position.

7. Assess the scope for further improvement

We propose to take account of Ofwat's expectations for improvement in capital efficiency when we set targets. Ofwat's has recently published its final determinations⁶² and we will draw on the evidence accepted by Ofwat to inform our analysis of the further scope for improvement. This will inform the targets that we set for each year.

8. Use the cost base results to set an appropriate level of capital maintenance spending

There are two ways in which we can use the results of the cost base analysis. Our approach will depend on the level of detail that Scottish Water is able to provide on its proposed capital maintenance investment programme.

If we consider that the programme is sufficiently detailed, we would propose to apply an efficiency target (calculated by analysis of the cost base) to the capital maintenance programme planned by Scottish Water.

If we conclude that the programme is insufficiently detailed, we would use the results of the cost base to increase the adjusted allowance for capital maintenance that is suggested by Ofwat's econometric models.

9. Set total level of capital expenditure and final baseline of projects with associated outputs

We will set a total allowance for capital expenditure and a detailed list of projects with associated outputs. This will be the baseline against which we would expect stakeholders and customers to monitor and judge Scottish Water's performance.

Questions for consultation

Chapter 2: The Scottish Executive's consultation: Investing in water services 2006-14

1. Do respondents agree that the final investment programme should be defined in detail at an asset level?
2. Do respondents agree that this investment programme should be placed in the public domain?

Chapter 3: Capital maintenance

3. Do respondents agree that the UKWIR common

⁶² *Future water and sewerage charges 2005-10* – Final determinations.

framework approach for capital maintenance provides a suitable mechanism for establishing Scottish Water's capital maintenance requirements.

4. Do respondents agree that our three-stage approach will allow us to establish whether Scottish Water's capital maintenance proposals are justified, well costed and meet best practice.

Chapter 4: Implications of the quality programme

5. Do respondents agree with our proposed approach to assessing Scottish Water's quality investment proposals?
6. Are there other factors that we should take into account to ensure customers receive value for money?

Chapter 5: Investment to balance supply/demand

7. Do respondents agree with our proposed framework for assessing Scottish Water's water resource and sewerage and sewage treatment planning?
8. Are there other factors that we should take into account to ensure customers receive value for money?

Chapter 6: Capital expenditure in the Scottish water and wastewater industry

9. Do respondents think that the scope for improvement is different between capital maintenance and capital enhancement and between water and sewerage?

Chapter 7: Lessons learned from establishing the baseline investment programme for Quality and Standards II

10. Do respondents agree that, based on experience from *Quality and Standards II*, a baseline investment programme detailing, at a project level, the deliverables from Scottish Water's capital expenditure is an essential pre-requisite for the *Strategic Review of Charges 2006-10*?

11. Do respondents think the investment programme should be published? If so, should it be published in full or should regional lists be provided?

12. Do respondents agree that an 'early start' programme for *Quality and Standards III* is not appropriate unless appropriate definition of the *Quality and Standards II* and *III* programmes is available?

Chapter 8: Investment programme deliverability

13. How do respondents believe we should treat the potential overhang from *Quality and Standards II*?
14. Should we learn from this experience in setting the investment programme for the next regulatory control period?
15. What factors should we take into account in establishing the deliverability of the investment programme?
16. Should we adjust the efficiency target if the proposed investment programme is very large?

Chapter 9: Defining the investment programme

17. Is the proposed degree of definition for the baseline investment programme sufficient?
18. If not, what other information should be captured, and why?
19. Would respondents agree with the rationale given in this chapter for the extent of definition of the baseline investment programme? In particular, is the reporting burden on Scottish Water appropriate?

Chapter 10: Investment programme review

20. Do respondents agree with our proposed use of the Reporter to carry out the process of verifying Scottish Water's capital investment proposals? If not, which other party do you think should be used for this exercise and why?

21. Do respondents have comments on our proposed verification process?
22. Does it meet the needs of customers and stakeholders?
23. Are the proposed areas of assessment sufficient to ensure that the programme is deliverable, takes full account of potential synergies and will meet the objectives set out by Ministers?

Chapter 11: How Ofwat assesses capital expenditure efficiency

24. What are respondents' views on Ofwat's methods for assessing capital expenditure efficiency?
25. What other approaches to the assessment of the scope for capital efficiency would respondents suggest? How would these work?

Chapter 12: Other ways to assess capital expenditure efficiency

26. Are there any lessons that we should learn from the experience of other regulators?

Chapter 13: Our proposed approach to assessing capital investment efficiency

27. Do respondents agree that there are benefits in using Ofwat's benchmarking techniques to assess the scope for Scottish Water to improve its capital efficiency?
28. What are respondents views on our proposed use of Ofwat's econometric models and cost base technique as the basis for establishing an efficient level of capital maintenance spend for Scottish Water? In particular, do our proposed adjustments to the econometric models appear appropriate? Are there other factors we should take into account?
29. What are respondents views on our proposed of Cost Base as the basis for establishing an efficient level of capital enhancement spend?

30. Are our proposed mechanisms for taking account of 'special factors' appropriate?

Chapter 14: Scope for and pace for improvement

31. Do respondents agree with our proposed approach to establishing the scope for improvement in capital efficiency?
32. Do respondents consider that we should treat capital maintenance and capital enhancement expenditure separately?
33. Do respondents agree that our proposals for introducing an incentive mechanism for outperformance will be in the interests of customers and stakeholders? Does the proposed mechanism provide appropriate incentives for outperformance, and does it share the benefits fairly between Scottish Water and customers? If not, which other mechanism would be preferable?
34. Do respondents agree that any future failure to meet efficiency targets should be funded by grant-in-aid from the Scottish Executive?

Chapter 15: Setting targets for efficiency in capital expenditure

35. Do respondents think that our proposed methodology for setting targets is robust?
36. Do respondents agree that we should take account of the 'critical factors' we have listed (*Quality and Standards II* overhang, limitations on the size of the programme and incentives to outperform) in setting investment targets for Scottish Water? Are there are other factors that we should take into account?

Chapter 16: Monitoring capital delivery

37. Do respondents think that the scope for improvement is different between capital maintenance and capital enhancement and between water and sewerage?

Appendix 1:

Volume 1 - Foreword

My role is to promote the interests of customers. In 2001, I set challenging efficiency targets for Scottish Water. In 2003 I challenged Scottish Water to build on its solid start. I am now increasingly confident that the next two years should see further significant improvement in the performance of the water industry in Scotland. By 2006, I expect that the operating costs of the water industry in Scotland will have been reduced by some £145 million annually in real terms. Customers' bills will consequently be around 15% lower than they would otherwise have been.

Rigorous, objective regulation is therefore beginning to deliver real value to customers. It is important that we build on the improving performance of the water industry in Scotland. This will ensure that value for money to customers will continue to improve and will be sustainable in the medium to long term.

I welcome the announcement by Ministers that the current regulatory regime should be further strengthened. These proposals are consistent with normal regulatory practice in other utilities and in the water industry in England and Wales. In particular, I believe that the introduction of a Commission will help to depersonalise regulation. I also believe that giving the power to the Commission to decide, rather than advise, on prices should improve the transparency of the role of regulation. The proposed rights of appeal that will be available for Scottish Water should be similarly effective in improving transparency.

Scottish Ministers have asked me to prepare the second full Strategic Review of Charges. This Strategic Review will cover the period 2006-10. In preparing the second full Strategic Review of Charges, I have the benefit of some four years of detailed asset, cost and customer information. I will also seek to learn from the experience of the last Strategic Review and the comments that I have received from individual customers and stakeholder organisations. If the Parliament approves the changes proposed by Ministers, it is likely that the final outcome of this Strategic Review will be the first

determination of prices for the water industry in Scotland by the new Water Industry Commission for Scotland.

My focus at this Strategic Review is to ensure that I establish a robust and transparent process and set prices that are no higher than necessary. I appreciate the need to explain to all stakeholders clearly what my Office is doing, and that is why I am keen to facilitate debate about the challenges facing the water industry in Scotland. For example, I have arranged a number of stakeholder information days, and would seek to encourage all interested parties to use these opportunities to have their say.

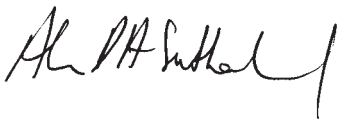
I am committed to the Better Regulation Taskforce Principles of accountability, transparency, proportionality, consistency and targeting. As such, I intend to publish the key information submissions that I receive from Scottish Water, as well as the tools that I will use to complete my analysis, including my financial and tariff basket models.

An important first step in facilitating debate is the publication of a detailed work-plan for the next two years. This plan contains details of all of the key milestones in the Strategic Review of Charges process, including the opportunities for stakeholders to contribute to the debate. I also hope that publishing this detailed timetable of activities will help Scottish Water by giving them advance notice of the inputs and information that I will require from them.

I will shortly be publishing a detailed description of the methodology that I propose to adopt for the Strategic Review of Charges. This methodology will explain the factors that I will take into account in determining efficiency targets, investment levels and customer service standards for Scottish Water in the next regulatory period. I would welcome comments from stakeholders both about those elements of the methodology where I propose to use current best regulatory practice and those areas where I believe there are a range of potential approaches.

Notwithstanding the cost reductions already achieved by Scottish Water, there will still be considerable scope for further improvement after 2006. My aim is to ensure that customers get value for money today without compromising future prices or the service levels that future generations will receive. To that end, I intend to set further operating and capital cost efficiency targets for Scottish Water. These will be challenging but achievable and will ensure that prices paid by customers will be as high as they need to be to ensure a sustainable industry – but no higher than they need to be.

In publishing this forward work programme, I am taking a first step in what I hope will be a fully transparent and detailed process, leading up to publication of final prices for water and waste water from April 2006. I hope that this document will help clarify my approach, so that all parties have a clear understanding of how I intend to set caps on the prices for water and sewerage services that will be paid by customers from 2006.



Alan D A Sutherland

Water Industry Commissioner for Scotland

July 2004

Appendix 2:

Volume 2 - Foreword

My role is to promote the interests of customers. In my first full Strategic Review of Charges in 2001 I outlined a number of challenges that faced the water industry in Scotland. Meeting these challenges required difficult decisions.

The creation of Scottish Water has brought benefits to customers throughout Scotland. Customers in all parts of Scotland are now paying less than they would have paid if Scottish Water had not been established. Years of worsening efficiency in the Scottish water industry have been halted, and the rate at which efficiencies are being made is beginning to improve significantly.

In 2001, I said that if the industry meets the challenges it faced, then by 2006 customers could expect that their bills would not have to increase in real terms in order for them to enjoy an environmentally and financially sustainable service. Scottish Water has made a good start in meeting the challenges that I set in my Strategic Review. I am therefore optimistic about the prospects for tariffs, although it is still too early to say what individual customers may have to pay. This will become clearer after the Minister provides me with guidance on investment priorities and the principles of charging. This guidance will reflect the response to the Scottish Executive's two consultations: *'Paying for water services 2006-10'* and *'Investing in water services 2006-10'*.

Notwithstanding its progress to date, Scottish Water has more to do if it is to meet the service and cost levels of the industry in England and Wales. I therefore intend to set further operating and capital efficiency targets for Scottish Water. These will be challenging but achievable and could further limit the prices faced by customers. Customers will expect to see similar progress in the level of customer service.

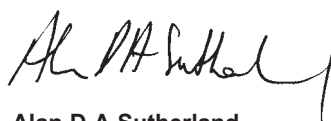
I will shortly be publishing a detailed description of the methodology that I propose to adopt for the *Strategic Review of Charges 2006-10*. This methodology will explain the factors that I will take into account in determining efficiency targets, investment levels and customer service standards for the next regulatory period. I will be particularly interested in whether stakeholders believe that we should set targets for improvements in customer service. I would also welcome comments from stakeholders both about those elements of the methodology where I propose to use current regulatory best practice and those areas where there are a number of potential approaches.

This is the second publication about our work in regulating the Scottish water industry. It covers the background to and the framework for the *Strategic Review of Charges 2006-10*. It is important to understand the background to the last Review, in order to clarify both the changes to the process that we are introducing and the initiatives to strengthen the regulatory framework that are proposed by Scottish Ministers.

I welcome the Minister's proposals that the current regulatory regime should be strengthened. These proposals are consistent with normal regulatory practice in other utilities and in the water industry south of the border. In particular, I believe that the introduction of a Commission will help to depersonalise regulation. I also believe that giving the Commission the power to decide, rather than to advise, on prices should improve the transparency of the role of regulation. The proposed rights of appeal that will be available for Scottish Water should also improve transparency.

A strengthened regulatory regime brings increased responsibility. Scottish Ministers have asked me to prepare this second full Strategic Review of Charges on the basis that the final outcome could be the first determination of prices for the water industry in Scotland by the new Water Industry Commission for Scotland. In order to ensure that the outcome is consistent with regulatory best practice, I will prepare this Review according to the Better Regulation Task Force Principles of accountability, transparency, proportionality, consistency and targeting. As such I intend to publish the key information submissions that I receive from Scottish Water, as well as the tools that I will use to complete my analysis, including my financial and tariff basket models.

I am keen to facilitate debate about the challenges that still face the water industry in Scotland. My office has planned a number of stakeholder information days over the next 18 months. I encourage stakeholders to come and to express their views. These views will help to inform the Strategic Review of Charges.



Alan D A Sutherland
Water Industry Commissioner for Scotland
August 2004

Appendix 3:

Volume 3 - Foreword

My role is to promote the interests of customers of Scottish Water. In 2001, I set challenging efficiency targets for Scottish Water. In 2003, I challenged Scottish Water to build on the solid start that it had made. I am now increasingly confident that over the next two years we will see further significant improvements in the performance of the Scottish water industry.

By 2006, I expect Scottish Water to have been able to reduce its inherited level of operating costs by some £145 million annually in real terms. Customers' bills will consequently be around 15% lower (over £40 a year for the average household) than they would otherwise have been.

Scottish Water has also made important progress in gaining a better understanding of its assets and costs. This should ensure that the efficiency of the industry in Scotland relative to that of the companies south of the border continues to improve.

Rigorous, objective regulation is therefore beginning to deliver real value to customers. However, it is important that we continue to build on this early success. I therefore welcome the Ministers' proposals that the current regulatory regime should be strengthened. These proposals are consistent with normal regulatory practice in other utilities and in the water industry south of the border. In particular, I believe that the introduction of the proposed Water Industry Commission for Scotland will help to depersonalise regulation. I also believe that giving the Commission the power to decide, rather than to advise, on prices should help to make regulation more transparent, and should improve people's understanding of the impact on their bills of decisions by Ministers and the regulator.

The proposed right of appeal to the Competition Commission that will be available for Scottish Water should also reassure stakeholders that the targets set in the *Strategic Review of Charges 2006-10* are challenging but achievable. I will shortly publish our proposals on how we will set targets for and monitor improvement in operating cost efficiency. This is in the interests of both current and future customers.

Scottish Ministers have asked me to prepare this second full Strategic Review of Charges on the basis that the final outcome could be the first determination of prices for the water industry in Scotland by the new Water Industry Commission for Scotland. In order to ensure that the outcome is consistent with regulatory best practice, I am preparing this Review according to the Better Regulation Task Force Principles of accountability, transparency, proportionality, consistency and targeting. As such, I intend to publish the key information submissions that I receive from Scottish Water, as well as the tools that I will use to complete my analysis, including my financial and tariff basket models.

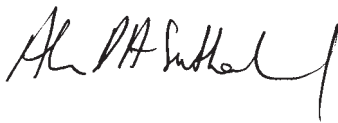
Notwithstanding the cost reductions already achieved by Scottish Water, there will still be considerable scope for further improvement after 2006. I want to ensure that customers get value for money today without compromising future prices or the service levels that future generations receive. To that end, I intend to set further operating and capital cost efficiency targets for Scottish Water. These will be challenging but achievable and will ensure that prices paid by customers are as high as is necessary to ensure a sustainable industry – but no higher than they need to be.

This is the third volume concerning our work in regulating the Scottish water industry. It describes our proposed approach to setting prices in the *Strategic Review of Charges 2006-10*. I propose to use the regulatory capital value method of price setting; this will ensure that stakeholders can more easily compare the financing of the industry in Scotland with that south of the border. It will also be easier to monitor Scottish Water's progress in delivering its capital programme and improving its operating cost efficiency.

Proposals by the Scottish Executive to introduce a licensing framework will bring benefits to all customers. I would expect that separating Scottish Water's retail and wholesale activities will increase the transparency of cost allocation within the business and identify further significant opportunities for efficiency. It is also likely that the customer service offered by the retail arm of Scottish Water is likely to improve in response to market pressures. This volume also discusses our proposed approach to the setting of a wholesale price.

The wholesale price needs to be set at a level that favours neither the retail nor the wholesale business of Scottish Water. I would welcome the views of stakeholders about how this can be best achieved.

I have included a number of questions for consultation. Responses from stakeholders will be important if I am to ensure that the *Strategic Review of Charges 2006-10* establishes proportionate and consistent targets for the water industry in Scotland. I am keen to facilitate debate about our proposed approach to the Review and, more generally, the challenges that still face the water industry in Scotland. I am therefore holding a number of stakeholder information days over the next 18 months. I encourage stakeholders to come to express their views. These views will help to inform the Strategic Review of Charges and will ensure that the process achieves the best possible outcome for customers.



Alan D A Sutherland

Water Industry Commissioner for Scotland

September 2004

Appendix 4:

Volume 4 - Foreword

I am committed to the Better Regulation Task Force principles of transparency, accountability, consistency, proportionality and targeting. In the previous volume of our proposed methodology for the *Strategic Review of Charges 2006-10*, I set out a new approach to price setting. The use of a Regulatory Capital Value will facilitate comparison of the financial sustainability of the water industry in Scotland with that of the industry south of the border. It will also highlight the direct impact that the level of operating costs incurred by Scottish Water will have on customers' bills. In this volume, we explain how we propose to scrutinise these costs to ensure that they are no higher than they need to be.

I had also planned to outline our proposed approach to establishing the scope for efficiency in the delivery of the capital programme in this volume. Unfortunately, there are still a number of outstanding issues concerning the definition and delivery of the *Quality and Standards II* capital programme. I have concluded, reluctantly, that it would not be in the customer interest to publish our proposals for determining the scope for capital efficiency until these issues are resolved. I have extended the deadline for responses to the issues raised in this current volume to 5 November 2004.

In the *Strategic Review of Charges 2002-06*, I set challenging but achievable efficiency targets for operating costs and capital expenditure. In 2003, I welcomed the solid start made by Scottish Water in improving its operating cost efficiency, but cautioned that more still needed to be done. I am pleased to say that Scottish Water appears to be rising to the challenge and it is likely that it will achieve the target of reducing operating costs to £265 million on a like-for-like basis by the end of the current regulatory control period. This will represent a reduction of some £145 million in real terms over four years. This improvement in Scottish Water's efficiency is to be welcomed; as a result, customers' bills will be some 15% less [more than £40 less for the average household] than they would otherwise have been.

It is, however, important to put this undoubted success in its proper context. In last year's Costs and Performance

Report, we explained that if Scottish Water achieved the target for reducing operating costs, and the companies south of the border did not outperform the targets set by Ofwat, then operating cost inefficiency would still cost the average household some £23 per year, or around 8% of its annual bill.

Companies also have an incentive to outperform the targets set by Ofwat in order to reward their shareholders. The efficiency gap is therefore likely to grow unless we set further targets. In August this year, Ofwat published its draft determination of prices for the companies south of the border. This draft determination takes account of the expected performance of the companies. Ofwat expects the average company to continue to improve at a rate of around 3% a year. This clearly implies that Scottish Water still has considerable scope to improve its operating cost efficiency. I do not believe that customers ought to have to pay the cost of such inefficiency.

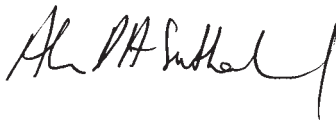
In this volume we explain in detail how we propose to assess the scope for efficiency in Scottish Water's operating costs. We propose to develop the comparisons that we have used during the last four years, using the Ofwat econometric models and an independent alternative model.

I am aware that some commentators have expressed reservations about our use of the econometric models developed by Ofwat. They assert that Scottish Water faces unique challenges and that the models do not take account of these. In this volume we have outlined how we propose to review and, if appropriate, take any such factors into account in our assessment of the scope for efficiency.

This volume also addresses important issues about levels of customer service. I am keen to understand whether stakeholders believe that we should set targets for the level of service that should be provided to customers, as well as the efficiency targets.

My focus at this Strategic Review of Charges is to ensure that I establish a robust and transparent process

and set prices that are no higher than necessary. I appreciate the need to explain clearly what my Office is doing, and that is why I am keen to facilitate debate about the challenges facing the water industry in Scotland and my proposals for the coming review. As part of that commitment, this volume explains in detail how to use the econometric models and where to find the input information. I have also arranged a number of stakeholder information days, and would encourage all interested parties to use these opportunities to have their say or to ask questions. These views will help to inform the Strategic Review of Charges and we will take full account of representations that are made to us in setting an efficiency target for operating expenditure for Scottish Water.



Alan D A Sutherland

Water Industry Commissioner for Scotland

October 2004

Appendix 5:

Volume 5 - Foreword

Unfortunately, it has been necessary for me to delay until now the publication of this volume of my proposed methodology for the *Strategic Review of Charges 2006-10*. This was because no baseline had been defined for the capital programme that was funded in the last Strategic Review.

I now have such a defined programme. There are still some important issues outstanding; these relate to the extent of this programme that will remain undelivered at the start of the next regulatory control period. However, I am hopeful that these issues can be resolved in the next few weeks.

In this volume I explain in detail my proposed approach to assessing the scope for capital expenditure efficiency. I propose to draw largely on the approach used by Ofwat. Importantly, I have provided Scottish Water with detailed guidance for its second draft business plan on the information that I will require on the proposed capital programme. I plan to publish this capital programme so that customers and other stakeholders can understand the investment that is planned for their area. This is in line with our commitment to the Better Regulation Task Force principles of transparency, accountability, consistency, proportionality and targeting.

I have now had the opportunity to consider Scottish Water's first draft business plan in some detail. This plan suggests that a price increase of 5% in excess of inflation over the four-year regulatory control period is required. The plan also forecasts a total capital programme of over £2.4 billion. My review of the plan suggests that prices do not need to increase in real terms in the foreseeable future. There are two principal reasons why I believe that price increases can be held below the rate of inflation. The first is that Scottish Water's first draft business plan understates the scope for improvement in efficiency.

The second is the level of proposed capital expenditure. I have analysed the capital programmes of the companies south of the border and it is clear that the current *Quality and Standards II* investment programme is very large (larger indeed than that delivered by any similar sized company south of the border). Although Scottish Water has taken important steps to improve its understanding of its assets, such a

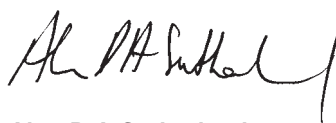
significant increase in the capital programme for the next regulatory control period is likely to represent a major challenge.

Paradoxically, increasing the size of the capital programme may actually result in fewer outputs being delivered. This would not benefit customers, the environment or public health. My analysis shows that the companies south of the border have improved their efficiency considerably at a time when they have been required to deliver slightly smaller capital programmes.

I expect to receive Guidance from the Scottish Ministers in January 2005. This Guidance will outline their investment priorities after considering the response to the *Quality and Standards III* consultation. This Guidance will underpin my draft determination of the price caps that should apply to Scottish Water for the next regulatory control period.

My focus at this Strategic Review of Charges is to ensure that I establish a robust and transparent process and set prices that are no higher than necessary.

I appreciate the need to explain what my Office is doing, and that is why I am keen to facilitate debate about the challenges facing the water industry in Scotland and my proposals for the coming Review. It is important that this debate reflects the facts; it is also important for stakeholders to acknowledge that improvements can only come when we recognise the challenges we face. I have arranged a number of stakeholder information days and would encourage all interested parties to use these opportunities to ask questions and to have their say. Their views will help to inform the *Strategic Review of Charges 2006-10* and we will take full account of representations that are made to us in setting an efficiency target for capital expenditure for Scottish Water.



Alan D A Sutherland
Water Industry Commissioner for Scotland
December 2004

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Our work in regulating the Scottish water industry:
Summary of responses to our methodology consultation
and our conclusions

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May 2005

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Foreword

My primary role is to promote the interests of customers of Scottish Water. One of my most important duties is to advise the Scottish Ministers on the amount of revenue that Scottish Water needs to provide a sustainable service to customers and to fund its investment programme. In the light of changes to the regulatory framework that are due to come into effect in summer 2005, Ministers asked me to prepare advice in the form of a draft determination of charges. The new Water Industry Commission, which will be established later in 2005, will be responsible for reviewing representations about my draft determination and will then prepare and consult upon a final determination of charges for 2006-10.

My draft determination will outline the price and revenue implications for customers of Scottish Water for the period 2006-10.

The last Strategic Review of Charges covered the period 2002-06. Customers rightly expect us to have built on progress since the last review, and our approach for the 2006-10 review is a development of our approach at the last review.

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

- prices are set at the lowest level that is consistent with delivering the Ministers' objectives, as set out in their February guidance;
- Scottish Water invests efficiently and effectively and consequently will deliver the desired environmental, public health and customer service improvements as efficiently and effectively as possible; and
- Scottish Water further narrows the gap between its performance and that of the companies south of the border.

We consulted on our proposed approach to the Strategic Review in a series of methodology consultation documents which we published in several volumes from

July to December 2004. The questions that we asked stakeholders in the methodology consultation are set out in Appendix 1.

This document provides a summary of the responses to the consultation. Responses are set out in full in Appendix 2. We also set out our current thinking on the appropriate approach we should adopt on each matter, having taken account of these responses. We have, however, recently received Scottish Water's second draft business plan which we are considering carefully. The views expressed here are therefore provisional pending publication of a full statement in the form of the draft determination of charges.



Alan D A Sutherland

[Water Industry Commissioner for Scotland](#)

[May 2005](#)

Chapter 1

Introduction

Our methodology consultation

The Water Industry Commissioner for Scotland is responsible for the economic and customer service regulation of Scottish Water.

At the end of June 2005 we will publish a draft determination, which will present our preliminary conclusions from the *Strategic Review of Charges 2006-10*. There will then be a period until 5 September during which stakeholders can comment on the draft determination and the price caps we consider to be appropriate. The new Water Industry Commission for Scotland will then proceed to determine prices under the new regulatory framework by November 2005. These prices will take effect from April 2006.

Between July and December 2004 we published a series of five information and consultation documents to support our *Strategic Review of Charges 2006-10*. These set out our proposed methodology and approach for the Strategic Review and invited stakeholders' responses on the issues raised.

The documents we published are shown in Table 1. They are all available on our website.

Table 1: Consultation documents published

Volume	Title	Published	Responses requested by:
1	Our work in regulating the Scottish water industry: Setting out a clear framework for the Strategic Review of Charges 2006-10	22/07/04	29/09/04
2	Our work in regulating the Scottish water industry: Background to and framework for the Strategic Review of Charges 2006-10	13/08/04	29/09/04
3	Our work in regulating the Scottish water industry: How we intend to set prices in the Strategic Review of Charges 2006-10	22/09/04	29/10/04
4	Our work in regulating the Scottish water industry: How we intend to assess operating efficiency in the Strategic Review of Charges 2006-10	07/10/04	05/11/04
5	Our work in regulating the Scottish water industry: The scope for capital investment efficiency	17/12/04	17/1/05

All of the documents that we published concerning the review reflect our intention to provide an open and transparent process. This is in accordance with our commitment to the Better Regulation Task Force principles of:

- accountability;
- transparency;
- proportionality;
- consistency, and
- targeting.

When the documents were published we contacted 193 individuals and 137 organisations, including local authorities and water companies, to tell them that the reports had been published and to invite them to respond to the issues raised.

In order to support the consultation process we also held a number of stakeholder information days and workshops. These were outlined in Volume 1 of our methodology consultation and a summary of the issues raised at these events can be found on our website.

This document summarises the responses we received to the methodology consultations. It explains any changes we are minded to make to our proposed methodology in light of the consultation responses, as well as indicating those issues which are still under consideration.

This document follows the structure that we used for the methodology consultation volumes that we published. It covers the following key areas:

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

Responses received

We received responses from 17 organisations or individuals. Most stakeholders responded to specific issues that we raised in the consultation documents, although some responses were more general. Some respondents covered issues that were raised in a number of the volumes; others responded to issues that were covered in one or two volumes only¹.

The following organisations or individuals responded to our methodology consultation:

Aberdeen Environmental Services
Dumfries and Galloway Council
East Ayrshire Council
Fife Council
Glasgow City Council
Highland Council
North Lanarkshire Council
John MacNicol
Robert Miller-Bakewell
Northumbrian Water International
Perth and Kinross Council
Scottish Consumer Council
Scottish Environment Protection Agency
Scottish Water
Severn Trent
Professor David Simpson
Water UK

We would like to thank the respondents for their comments and suggestions, which we have found very helpful.

We received some criticism from two respondents concerning the short timescale for the consultation. We recognise that the consultation periods for certain volumes of the methodology were shorter than the period recommended by the Cabinet Office. This is, however, as a result of the difficulty we have had in defining the baseline investment programme for the current regulatory control period. We have taken into

account all responses received, even if they arrived after the official deadline for submission of comments. Indeed, we continue to welcome comments and queries from stakeholders.

¹ We had advised that we would publish all responses to our consultation unless a respondent specifically asked for their response to remain confidential.

Chapter 2

Our work plan, the regulatory framework and lessons learned from the last Strategic Review

Volume 1 of our methodology consultation set out in detail our forward work programme for the *Strategic Review of Charges 2006-10*. We explained:

- the role of regulation;
- the information we use;
- how we intend to ensure transparency and accountability during the Strategic Review of Charges;
- opportunities for stakeholders to have their say; and
- a detailed work plan and timetable for the Strategic Review.

In Volume 2 we outlined the background to our work in assessing the appropriate level of prices. The document was presented in two parts. Section 1 provided background information about the review and explained the current regulatory framework. Section 2 discussed the changes to the regulatory framework that are taking place and the impact that these changes will have both for regulation and for customers.

In particular it covered:

- the principles underlying the *Strategic Review of Charges 2002-06*;
- reactions to, and lessons to be learned from, the *Strategic Review of Charges 2002-06*; and
- changes to the regulatory framework since the last review, including:
 - the movement to powers of determination;
 - separation of core and non-core services;
 - retail competition;
 - trade effluent charging;
 - business plans; and
 - the appointment of a Reporter.

Although we did not present any specific questions for consultation for Volumes 1 and 2, we did invite stakeholders to comment if they so wished.

One respondent asserted that decisions about changes to the methodology were being made in a relatively short time. Another welcomed the appointment of a Reporter. A third respondent expressed the view that both Volumes 1 and 2 were comprehensive and their contents reasonable.

Chapter 3

The calculation of prices

Introduction

In Volume 3 of our methodology consultation we described how prices would be calculated for Scottish Water for the regulatory period 2006-10. The document examined:

- the costs that have to be recovered by Scottish Water;
- the way prices are calculated;
- how adjustments to prices are made when circumstances change; and
- how financial risk is managed in the public sector.

We address responses to the questions posed in Volume 3 in the order they were asked in our methodology consultation.

Depreciation

Our methodology consultation explained that for the Strategic Review of Charges we proposed to:

- use a five-step classification of asset life, ranging from very short to long;
- assume straight-line depreciation over the life of the asset; and
- establish the economic value of the asset on the basis of a Modern Equivalent Asset (MEA) valuation.

This approach is consistent with that which is used for the water industry in England and Wales and in most other utilities. We explained that the approach would, in our view, provide customers with the most reliable way to assess the value of the asset base and would achieve an equitable balance between costs incurred by current and future generations.

Respondents generally supported our proposed approach to calculating depreciation and agreed with the way we planned to apportion depreciation to various asset life categories. They also generally agreed with using the MEA valuation to estimate the economic value of Scottish Water's assets.

Respondents provided different views about how depreciation should be calculated. However, no respondent disagreed with straight-line depreciation in principle.

We have noted the concerns that were expressed about differences between Scottish Water's asset base and the asset base of companies in England and Wales. However, on balance, we are still minded to use the approach we set out in our methodology consultation to calculate depreciation.

Managing risk in the public sector

Water and sewerage businesses are exposed to operational, legal and asset risks which could affect their compliance with public health or environmental standards. They are also exposed to financing risks. We seek to minimise the extent to which Scottish Water's customers are exposed to such risks.

In our methodology consultation we explained that we proposed to adopt the following approaches to managing risk at the 2006-10 review. They appeared to us to offer significant benefits for customers, while allowing Scottish Water to manage its business:

- adopt the Regulatory Capital Value (RCV) approach to price setting (see below);
- introduce effective controls on access to borrowing;
- extend our risk analysis to include financial indicators; and
- fund maintenance appropriately, with depreciation recognised accordingly.

Respondents agreed that access to borrowing should require Scottish Water to conform to the same disciplines and controls that apply in the private sector. One respondent felt that any other approach would imply that public sector capital should be treated less carefully than private sector capital.

The report that we commissioned from ING Barings considered further the issue of effective controls on access to borrowing. Its report, along with recommendations, is available on our website. The report suggested some steps that could be introduced to ensure that Scottish Water conformed with the discipline of private finance while continuing to borrow from the public purse.

Respondents agreed with the proposal to extend risk analysis to cover financial ratio comparisons. One of the main ways we can ensure that Scottish Water is subject to the same disciplines and controls as companies south of the border is by using the same financial ratios that are used in the water industry in England and Wales.

In our methodology we signalled our belief that customers should not pay for a failure to meet agreed targets. Managers of Scottish Water must face a strong incentive to ensure that efficiency targets are achieved. We therefore propose to set prices on the assumption that Scottish Water has achieved its operating cost efficiency targets for the 2002-06 regulatory control period. We discuss in Chapter 5 the approach we are minded to take with regard to the *Quality and Standards II* programme that remains to be delivered.

With regard to future price determinations, our methodology consultation explained that we are minded to assume that Scottish Water will have delivered Ministers' objectives within the price caps set in the final determination to be published in November this year. This is consistent with the guidance on the principles of charging that we received from the Scottish Ministers.

Most respondents agreed with this principle. One respondent highlighted this as being particularly important, as failure could mainly result from issues that are within the control of managers.

Scottish Water argued that at each Strategic Review, prices should be reset in line with actual costs. This, it asserted, is a fundamental principle of a price cap regime. We agree with this statement in cases where costs are unavoidably higher than assumed at price setting. However, we believe that the new Water Industry

Commission should capture this effect through the interim determination and logging up and down processes. We expect to adopt the same rules for interim determinations and logging up/down as Ofwat. We outlined the main elements of these processes in Volume 3 of our methodology consultation. If Scottish Water does not meet the level of performance set out in its regulatory contract, it will be for Scottish Ministers (as the de facto owner) to decide on an appropriate course of action. In our view, such a course of action should not have an adverse impact on customers.

Our methodology consultation asked whether any other factors needed to be taken into account in minimising the risk to customers. Scottish Water's response indicated that it intended to comment further on the range of risks to which it is exposed. We will consider in detail all of the information that Scottish Water provides to us.

How we propose to determine charges for the 2006-10 period

Our methodology consultation explained that we proposed to make some changes to our approach to price setting. In particular, we plan to introduce a regulatory capital value for Scottish Water. Scottish Water would receive an appropriate rate of return on this RCV. Efficient investment in new assets will be added to the RCV and depreciation (reflecting the costs of using existing assets) will reduce the RCV.

Introducing the RCV method of price setting will also ensure that stakeholders can more easily compare the financing of the industry in Scotland with that south of the border. It will be easier to monitor Scottish Water's progress in delivering its capital programme and improving its operating cost efficiency.

Most respondents agreed with our proposed approach.

One respondent, however, considered that an RCV framework itself does not facilitate comparisons with England and Wales and that a number of factors render comparisons between the two less valid.

Under the current system, we provided advice on a single, general cap on revenue. Our methodology highlighted our intention to set a series of price caps. We explained that a price cap would largely insulate customers from the impact of changes in the customer base or volumes of consumption during a regulatory period.

Scottish Water expressed concern that this approach added complexity and increased risk and uncertainty. It asserted that it could be better to set one overall allowed price increase and to give indicative increases for different customer groups.

It is important that customers are able to understand the implications of the determination of charges on their bills. The Ministerial Guidance also asked us to ensure that cross-subsidy of £44 million was unwound equally, as far as possible, in favour of all non-domestic customer groups. These two factors require us to set and monitor a number of price caps. Most respondents, other than Scottish Water, were generally supportive of the move to a price cap regime. We have therefore decided to set price caps at the Strategic Review.

We have, however, noted concerns from stakeholders about the complexity of the price setting system and will review the approach further. We will publish more detailed information about tariff baskets in the draft determination and will use this as an opportunity to explain more fully the price caps that we intend to introduce.

Regulatory accounts and accounting separation

The Water Industry (Scotland) Act 2002 limits the remit of this Office to promoting the interests of customers of the core business. This will require us to be able to distinguish between Scottish Water's core and non-core functions. It is for Scottish Water and the Scottish Executive to determine whether Scottish Water conducts non-core activities. We have no role in this. No costs or revenue of non-core activities (except for the retail subsidiary of Scottish Water) will be included in the draft determination. The introduction of regulatory accounts

will ensure that we are assessing the lowest reasonable cost of the activities required to deliver the Ministers' objectives.

Scottish Water's statutory accounts are not sufficient to provide the information we now require. Statutory accounts allow a greater degree of flexibility in the choice of accounting policies than do regulatory accounts.

Our methodology consultation explained that we proposed to adopt the practice of other regulators by asking Scottish Water to complete regulatory accounts. Regulatory accounts facilitate benchmarking both between companies and over time. They are therefore important to effective regulation.

Most respondents were generally supportive of the proposed approach. However, one respondent suggested that it would be simpler to prevent Scottish Water from undertaking non-core activities. As explained above, although we can see merit in some of the arguments against Scottish Water conducting non-core activities, we would still require regulatory accounts.

Financial modelling

We have built a financial model so that we can calculate the revenue that Scottish Water requires to carry out its core functions. In the methodology consultation we outlined the financial assumptions contained in the model.

It was suggested by one respondent that we should not assume that the infrastructure renewals charge is equal to the infrastructure renewals expenditure over the 2006-10 period. We reviewed that assumption and allowed Scottish Water in its second draft business plan the opportunity to vary its infrastructure renewals charge and expenditure over the regulatory control period.

In its response to the methodology consultation, Scottish Water also told us that it will need to pay corporation tax in the regulatory period 2006-10. This differs from the information it had supplied to us previously. We have

reviewed the impact of this on our financial model. We are minded to take a conservative approach when assessing Scottish Water's likely tax liability. We are also considering our approach if we allow a tax allowance that is in excess of that which Scottish Water is required to pay. As with any cost, Scottish Water will need to manage its tax liability efficiently, including taking advantage of any tax shields.

Some respondents asserted that, rather than using the consumer price index (CPI) to measure inflation, we should use the retail price index (RPI). The argument for using RPI is that this is the index which Ofwat and other regulators use. One respondent believed that all regulators should change inflation indexes at the same time. Having reviewed the arguments, we continue to believe that CPI is the most appropriate measure of inflation to use with regard to year-on-year increases in operating costs. However, we recognise that there is value in ensuring that price caps are presented consistently between regulators. We are minded to set our price caps relative to RPI. It is also relevant to note that prices ought to be linked to RPI, since the real interest rate (and HM Treasury lending rates) are linked to index linked gilts. Index linked gilts pay interest, which is a function of the retail price index. It is likely that inflation variances would be addressed in the logging up/down process prior to the *Strategic Review of Charges 2010-14*.

In our methodology we proposed to use the Ofwat ratios as the primary indicator of financial sustainability. On balance, respondents agreed with the use of these ratios. One respondent suggested that we should analyse a set of financial ratios relating to how potential investors would regard Scottish Water.

We agree in principle that Scottish Water should be assessed using ratios that are specific to its circumstances. However, we still consider that the Ofwat ratios have clear benefits. Ofwat consulted extensively with the financial markets in developing these ratios. It used compliance with these ratios as a guide to whether the companies south of the border were likely to be able

to maintain at least 'investment grade' credit ratings. Such financial strength would be prudent in a public sector organisation where debt is provided by Ministers. Moreover, one of the reasons to adopt the RCV approach is because it allows us to compare financial ratios with those of the companies south of the border on a consistent basis. We are minded to set Scottish Water's required level of revenue at a level in 2009-10 which would ensure that Scottish Water complies with the Ofwat ratios – assuming that it meets the full terms of its regulatory contract.

Establishing an initial RCV

In the methodology consultation, we explained that most UK regulators use a market value approach to set the initial RCV of the businesses they regulate. This approach is clearly not possible for a public corporation such as Scottish Water. In March 2005 we wrote² to Scottish Water stating that the initial RCV would be in the range of £3.3 billion to £3.8 billion.

We outlined the three alternative methods that are available to us to set a robust initial RCV for Scottish Water. These are an asset value approach, a comparator approach and a discounted cash flow approach. Each of these approaches is mutually exclusive.

A range of views were expressed about which method is most reliable for setting the initial RCV.

One respondent observed that it may be better to use each of the methods to derive different values for the RCV and to analyse the sensitivity around each number. This respondent also suggested that we should set the initial RCV at a level that is consistent with Scottish Water's financial sustainability. We believe that, given the uncertainty and range of views surrounding the establishment of an RCV, this is a sensible approach. We are examining the most effective way to achieve this.

Stakeholders generally supported the use of the comparator method. We are minded to use this

² This letter is available on our website – www.watercommissioner.co.uk

approach either in setting the initial RCV or in checking that the initial RCV is set at an appropriate level. Our approach will have to ensure that the initial RCV will allow Scottish Water to meet the targeted financial ratios. We will also ensure that the RCV calculation is fully transparent and stated clearly within our Strategic Review of Charges, so that stakeholders can understand how the initial value was calculated.

The allowed rate of return

The allowed rate of return is the rate of return that we believe Scottish Water requires in order to meet the objectives that have been set by Scottish Ministers. This rate of return must be set at a level such that Scottish Water can finance its efficient operation.

In our methodology consultation we described four possible approaches to setting an appropriate rate of return for Scottish Water:

- adopt the Ofwat allowed cost of capital;
- use long-term average real borrowing rates;
- use the discount rate suggested in HM Treasury's Green Book; and
- use a hybrid approach.

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

In the public sector, the regulator cannot set the rate of return based on his observation of the cost of capital in the market. Scottish Water's cost of debt is set by Government. The debt supply curve is determined by the Public Expenditure Levels set by Ministers.

It is therefore not possible to estimate a market-based WACC for Scottish Water. As a public sector organisation it does not have contributed equity capital, although it generates and reinvests trading surpluses. Scottish Water does not currently pay dividends and therefore all of the surplus generated can be reinvested for the benefit of current and future customers. These retained earnings differ from retained earnings in the private sector in that they are not reinvested with the specific goal of generating increased surpluses in the future.

Respondents expressed a range of opinions about each of the four options. Some agreed with our view that it would be inappropriate to allow Scottish Water the same rate of return that companies have been allowed in the private sector. Others suggested that when we set the allowed rate of return we should be looking to estimate the cost of capital that private markets would require.

We are minded to set an allowed rate of return such that Scottish Water is able to finance its operations.

One respondent suggested that there is greater risk in Scotland because of greater regulatory risk. They argued that Scottish Water should have a greater allowed rate of return to compensate for this risk. We are not yet persuaded that regulatory risk is any greater in Scotland than it is in England and Wales.

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

In this approach, since we are considering setting 2009-10 revenue at a level consistent with that required for compliance with the financial ratios, the actual rate of return would be superseded by a revenue adjustment or by a lower RCV. Prices to customers would be unaffected.

In our methodology consultation we asserted that we would make an allowance for embedded debt for this regulatory control period, but would only make such

allowances in future if there had been a material change in the rate of inflation.

Two respondents did not agree with this approach. One argued that if we set the allowed rate of return at the market cost of capital then we would not need to fund embedded debt. Another argued that we had not properly explained why no embedded debt allowance would be made beyond 2010 and that we had not properly defined what a material change in the rate of inflation would amount to.

We are minded to allow the costs of embedded debt for this regulatory control period. This allows us to estimate the current cost of capital to Scottish Water and it means that we do not have to deal with issues relating to the appropriate average real interest rate.

Regulatory capital value – treatment of depreciation and additions

In Chapter 10 of our methodology consultation we discussed how the value of the RCV changes over time and how the method we use to take account of these changes can influence the prices that customers pay. The chapter provided further background information about using the RCV method of price setting. We did not ask any specific questions for consultation in this chapter, although we did welcome stakeholders' views on the issues raised.

Respondents stressed the importance of ensuring that Scottish Water is incentivised to be efficient and effective in its capital investment programme. As part of this, respondents argued, it is important to make sure that there is no misuse of additions to the RCV.

Interim determinations and logging up and down

Interim determinations and the logging up and down process are the two mechanisms which Ofwat currently uses to adjust the regulatory price settlement in the event that assumptions made at the price review need to be revised. Our methodology consultation explained that the imminent change in the regulatory framework to create a Water Industry Commission with a power to

determine prices will make it necessary to introduce a similar framework in Scotland. This would ensure that Scottish Water is able to recover the costs of any unexpected expenditure that results from uncertainty rather than underperformance.

Two respondents suggested that we should not introduce a process of interim determinations because Scottish Water should have to plan to work within its budget and manage its risks appropriately.

Two respondents felt that Ofwat's logging up and down process is flawed and that we should expand it so that it is more comprehensive, transparent and predictable. In particular, Scottish Water suggested that we should ensure that the process is more formal, with an annual statement setting out which items can be logged up and down.

One respondent argued that an interim determination of price limits should be triggered by any new or revised environmental requirements. Another argued that we should adopt the same procedures as in England and Wales, but should expand the number and type of triggers for an interim determination.

Our methodology consultation asked about the 'relevant changes of circumstance'. One respondent highlighted that the move to a different regulatory system could be considered a relevant change in circumstance for an interim determination.

We also asked for views about the most effective way to consult with customers about a potential price change. Suggestions included customer research, both quantitative and qualitative, and consulting with consumer groups and similar organisations.

One of the consultation questions asked whether customers would prefer prices to be revised downwards during a regulatory period (for example in the event of slow delivery of outputs), even if prices were likely to go up by a greater percentage in future as a result. One respondent suggested that customers generally prefer stable prices, so downwards adjustments followed by more rapid rises may not be what customers want.

In an open letter to the Minister for Environment and Rural Affairs (a copy of which is available on our website), we asked for guidance on the extent to which price limits should change during a review period. The Minister provided this guidance in his February policy statement on the principles of charging. In this Guidance, the Minister indicated that the new Commission should seek to establish charge limits that deliver the most regular and smooth charges profile possible in the circumstances. In particular, the Commission should avoid reductions in charges one year if such a reduction could not be sustained, or if they would need to be followed in subsequent years by an increase in real terms.

We agree with stakeholders that adjustments made at the end of a regulatory control period to reflect the outcomes in the previous period should be transparent. We also agree that they should be proportionate and, if possible, predictable. We need to ensure that incentives are created which will encourage efficiency in the long-term management of the industry. We are also considering the implications of Scottish Water's request for an annual statement on items to be logged up and down.

We are minded to adopt the same rules as Ofwat for interim determinations and logging up/down.

Setting price caps: the role of the tariff basket

Our methodology consultation explained that we proposed to establish tariff baskets to cover the principal services provided by Scottish Water. This, we explained, would help to ensure that the process of unwinding cross subsidies would be as transparent as possible. It would also allow customers to see more clearly the likely impact of the Strategic Review on their bills.

While some respondents agreed with our approach to tariff baskets, several respondents expressed concern about the complexity of the tariff basket system.

One respondent argued that using tariff baskets would result in a shift away from the business rates model. The view was also expressed that as water is a public

service it should be funded from general taxation. This is a matter for public policy and is not within our remit.

Tariff baskets are about measuring (and limiting) price increases in a consistent way. However, as stakeholders are clearly concerned about the complexity of tariff baskets we will continue to review their use. We intend to publish full details of the tariff baskets in the draft determination.

Respondents generally agreed with our proposal to introduce at least eight tariff baskets (which is more than is currently used by Ofwat in England and Wales). However, some respondents, including Scottish Water, asserted that this would create additional complexity and reduce Scottish Water's flexibility to deal with particular customers.

Most respondents agreed that we should introduce additional tariff baskets for water and waste water customers with standard metered connections. However, Scottish Water again argued that this would be more complex and less flexible.

We will continue to review our proposals for tariff baskets in light of the responses we received. Our initial view is that we should introduce the additional tariff basket for measured customers with a standard connection.

Our methodology consultation explained how we proposed to calculate the weighted average price increase. Most respondents agreed with the proposals. The point was raised about the need to phase in any changes in charges. We agree that, where possible, phasing of changes in tariffs is an important element of a charging policy. The phasing of charges is, however, a matter for public policy and was decided by the Scottish Executive in guidance given to this Office and Scottish Water in February 2005.

We asked for respondents' views about whether or not a target date of the end of December 2005 would be acceptable to announce tariffs, given that details about tariff baskets and their weightings would be included in our draft determination and the final determination prepared by the new Commission. Respondents agreed with this proposal.

Standard customers

Our methodology consultation explained that we proposed to develop our use of standard customers to help customers to understand the likely impact of the Strategic Review on the bill they pay.

Respondents generally welcomed the increase in the number of standard customers and the additional transparency this creates.

We proposed a number of additions and changes to the standard customers, and sought views about whether or not we had achieved broad representation of customer types. Scottish Water gave a detailed response in this regard. We have reviewed its suggestions and agree with most of the changes it proposed. The full list of the revised standard customers is detailed in Table 1.

Table 1: Revised list of standard customers

Name in 2002-06 Review	Proposed name for 2006-10 Review	Water		Sewerage		
		Meters (no x size (mm))	Volume (m ³)	Meters (no x size (mm))	Volume (m ³)	RV
Newsagent	Convenience store	1 x 20	30	1 x 20	28.5	£5,000
Garage	Garage	1 x 20	100	1 x 20	95	£10,000
Restaurant	Large restaurant	1 x 20	500	1 x 20	475	£100,000
Commercial	Large office	1 x 25	900	1 x 25	855	£750,000
Retail	Retail group	2 x 20 20 x 25 1 x 35	4,500	2 x 20 20 x 25 1 x 35	4,275	£1,700,000
Food manufacturer 1	Food manufacturer 1	2 x 25 1 x 80	50,000	2 x 25 1 x 80	47,500	£100,000
Food manufacturer 2	Food manufacturer 2	2 x 25 1 x 50 1 x 100	100,000	2 x 25 1 x 50 1 x 100	95,000	£260,000
Manufacturing	Large manufacturer	1 x 150	175,000	1 x 150	166,250	£1,225,000
Brewers	Brewers	2 x 25 1 x 100 1 x 150	600,000	2 x 25 1 x 100 1 x 150	150,000	£500,000

As a result of representations from Scottish Water we have removed the 'pharmaceuticals' tag from the large manufacturer, as Scottish Water has advised us that the characteristics are not typical of a pharmaceuticals company. We have also changed the description of the newsagent to that of a convenience store, as Scottish Water felt this would be more descriptive.

Scottish Water asserted that it is difficult to state what a

typical rateable value is. While this is true, we believe that the rates we have chosen are representative of the customer base and that they can be used to illustrate changes in tariffs.

Table 2: Standard trade effluent customers

Name	Volume		Load		Average strengths	
	Annual (m ³)	Daily (m ³)	Total suspended solids (kg/day)	Biological oxygen demand (kg/day)	Total suspended solids (mg/l)	Settled chemical oxygen demand (mg/l)
Bakery	200	0.55	0.5	0.75	575	1,600
Clothing manufacturer	12,000	32.9	1	1	20	300
Abattoir	90,000	246.6	150	250	600	1,500
Electronics business	550,000	1,507	15	50	10	75
Printers	10,000	27.4	5	40	100	2,500
Distillery	150,000	411.0	7	55	15	200

Scottish Water suggested that churches and hospitals should be represented within our standard customers. It was not our intention to include every type of business organisation in Scotland, but to try to achieve representative customer characteristics. We believe that the customer characteristics we have chosen will allow us to demonstrate the incidence effects of changing tariffs.

Method for setting retail and wholesale prices

The proposed competition framework will allow new entrants to obtain a licence to provide retail services to non-domestic customers. These new entrants would be retail specialists who would buy water and sewerage services wholesale from Scottish Water. To determine appropriate wholesale prices, we first need to define the wholesale and retail activities. Our methodology consultation set out the criteria we propose to use in assessing different approaches to setting wholesale prices. It also outlined accounting cost and comparator approaches for setting wholesale prices.

Respondents agreed with our criteria for assessing approaches to determining the wholesale charge. We received a range of opinions about how wholesale charges should be set.

One respondent felt that the accounting approach was the best way to achieve the right balance between providing incentives to enter the market and achieving the required revenue for Scottish Water wholesale. Another argued that the market should be left to decide the wholesale price, as any attempt to estimate the market price would be invalid because it could only be decided by supply and demand.

Two respondents argued that the efficient component-pricing rule should be used to set the wholesale price. These respondents argued that it is similar to the approach adopted by Ofwat in England and Wales for competition for large customers. Additionally, respondents warned against the accounting approach as it could overstate the retail component, leaving the wholesaler with too little revenue and damaging the viability of the industry.

We have reviewed the responses received from stakeholders but are not yet persuaded of the validity of these arguments. On balance we are minded to use the accounting approach to set wholesale charges. While we note stakeholders' concerns about this approach, these concerns only remain valid if the accounting separation is in some way incorrect. We have already described our approach to the split between retail and wholesale activities, and expect that our analysis of this information will determine an appropriate split.

Most respondents agreed that the split between wholesale and retail activities should be a notified item³, as we had proposed. However, one respondent was concerned that the retail/wholesale split would not pass the triviality threshold for an interim determination. If it is trivial, then an interim determination would not be required.

It would be desirable to reach agreement with all parties about the activities that comprise the retail and wholesale businesses. However, our view is that the future licensing regime that will be introduced under the Water Services etc (Scotland) Act 2005 will formalise the process of reviewing the retail activities.

Connection charging regime

Our methodology consultation asked whether there were any lessons to be learned from experience in England and Wales in relation to the connection charging regime.

One respondent supported a move to a connection charging regime. Another highlighted the need for change away from the current situation, as Scottish Water is seen as a barrier/constraint to new development. A third respondent saw no reason why connection charges in Scotland should be any different from the situation in England and Wales.

The Scottish Executive will announce its decision on connection charging in light of its 'Paying for water services 2006-10' consultation. We will incorporate this decision into the price limits we set.

³ A 'notified item' is an area of uncertainty in the determination. If there is a substantial variance, either the regulator or the regulated company may seek an interim determination.

Chapter 4

Price cap regulation and the scope for operating cost efficiency

Introduction

In Volume 4 of our methodology consultation we described how we propose to assess operating expenditure efficiency. So that stakeholders could understand the models and processes we use, the consultation described:

- how the regulatory regime can create incentives to improve performance;
- how we propose to decide on the level of operating costs that Scottish Water should be allowed to incur; and
- how best to ensure that customers receive an appropriate level of service.

Types of regulatory framework

In our methodology consultation, we described the different types of incentive-based regulation that can be used to drive companies to achieve cost efficiencies. We provided information about the five regulatory models and explained that price cap regulation based on the RPI-X approach is the mechanism favoured by utility regulators in the UK. This has already proved very successful in encouraging utilities to pursue continuous efficiency enhancement and keep prices down.

We set out our intention to use the RPI-X framework at the *Strategic Review of Charges 2006-10*. Responses to the consultation confirmed stakeholders' views that this was the right approach.

RPI-X incentive framework and benefit sharing

Our consultation went on to consider how incentives work and the difference between incentives in the public and private sectors. We then examined in some detail the effectiveness of the RPI-X approach as an incentive framework in regulating the Scottish water industry.

Water companies have continuing large investment programmes. The incentive to improve the efficiency of

capital investment is as important as reducing operating costs. RPI-X creates an incentive to improve the efficiency of capital investment by allowing an increased cash return on the RCV.

We highlighted a potential problem when calculating the cash return on the RCV, in that it could provide an incentive for the regulated organisation to invest inefficiently. In its 1999 price review, Ofwat responded to this issue by placing a cap on the capital expenditure that could be included in the RCV during the regulatory control period.

There is a risk, however, that a cap could cause companies to defer essential capital investment, which could put customer service levels at risk. Ofwat has proposed that the amount of capital expenditure that can be excluded from the RCV should be capped at 10% of regulatory revenue. This is known as the 'service-capping rule'. Any over-investment beyond the 10% threshold would earn the normal rate of return.

We asked stakeholders if they considered that a cap would be required on the capital expenditure to be included in the RCV for Scottish Water. We also sought their views about whether we should introduce an equivalent service-capping rule for Scotland.

Most respondents were not in favour of a capping rule. One argued that creating a distortion in order to fix a separate distortion felt intuitively wrong. Another said that the 10% materiality threshold created an asymmetrical incentive, with benefits for 'under-spend' being passed to customers but benefits for 'over-spend' only being added beyond a threshold.

There was a suggestion that the service-capping rule would mitigate the risk of undertaking high levels of supplementary investment which are not then recognised by the regulator. We understand this concern and agree that it would be in the interests of all customers to minimise this risk – providing customers demand the investment and that it is undertaken efficiently.

Any service-capping rule needs to be considered

alongside the logging up and down mechanisms. We plan to adopt the same rules for logging up/down as Ofwat. We believe that they are sufficiently robust to obviate the need for a service capping rule.

Our methodology consultation highlighted that for the incentive framework to be effective, the management of the regulated company must share in the benefits. In the public sector, this is best achieved by ensuring that the incentive mechanism is transparent, by setting objective targets and by aligning these targets with the overall interests of customers.

We asked for stakeholders' views about whether the RPI-X mechanism would provide appropriate incentives for Scottish Water. Respondents generally agreed that RPI-X created appropriate incentives, although suggested that these can be fairly limited. One respondent questioned whether out-performance in one period would lead to a reduction in the RCV in future years. This, they argued, would lower the allowed rate of return in future years, creating a disincentive to out-perform.

We asked whether there were any significant differences between private and public companies that had not been taken into account. One respondent said that in private companies there were both 'sticks' and 'carrots,' while in a traditional public sector model the existence of 'sticks' is limited. This assumes that senior managers in the public sector are less afraid of losing their jobs in the event of failure. This is essentially an issue for the Scottish Executive as the owner of Scottish Water. However, we believe that the greater transparency and more objective reporting of progress towards targets that we are introducing will increase the degree of 'sticks'.

Respondents generally agreed with our assessment of the importance of benefit sharing in providing incentives to Scottish Water to achieve efficiencies. One respondent, for example, observed that in a public sector model customers are shareholders too. They therefore have the right to expect to see the benefits of

outperformance in lower charges. Customers can benefit from the incentives created and this should be rewarded, but only if performance is exceptional. We wrote an open letter to Scottish Ministers on this issue on 10 May 2005⁴.

We asked for views about the level of transparency for senior management bonuses in the public sector model. Respondents felt that full transparency is desirable because in the public sector there is no commercial sensitivity surrounding managerial bonuses or company objectives.

Respondents also agreed with our proposals that managerial bonuses for Scottish Water should be aligned with independently assessed regulatory and customer service targets⁵.

In its response, Scottish Water agreed with the principles laid out in the methodology. We recognise and welcome Scottish Water's commitment to greater transparency in relation to managerial bonuses.

Following publication of our draft determination, we will ask Scottish Water for details of its management bonus scheme and will publish the response. This should ensure that the incentive scheme is fully transparent. We have written to Scottish Water seeking its views on our second open letter.

Establishing a baseline for operating costs

The baseline level of operating expenditure is the expenditure incurred in the base year. The methodology consultation explained that we need to establish a baseline for Scottish Water's operating expenditure for the Strategic Review of Charges. This baseline is used to set efficiency targets.

There is one base year for each regulatory control period. Setting a baseline is not a straightforward process. Our methodology consultation set out the options for determining the base year and explained that

⁴ Attached as Appendix 3.

⁵ These are targets set by the Scottish Environment Protection Agency, the Drinking Water Quality Regulator and this Office.

we proposed to use 2003-04 as the baseline for operating expenditure and 2004-05 as the base year for the final determinations. We considered that this would lead to a simpler, more transparent monitoring process. Respondents agreed with this proposal.

We also set out how we would make adjustments to base operating costs to ensure that operating costs are measured in a way that is consistent with the way in which targets were set at the *Strategic Review of Charges 2002-06*.

Scottish Water asked for the opportunity to discuss these adjustments with us before we publish the draft determination. If Scottish Water provides additional information once it has had the opportunity to consider our draft determination then we would expect the new Commission to take this into account. Although we consider that Scottish Water should have made its case through its business plans, we will endeavour to consider any information they provide.

As the final year of the current regulatory control period is 2005-06 it will be necessary for us to project Scottish Water's operating expenditure in that year. The methodology consultation outlined five options for doing this, and asked for respondents' views on the options and on the impact that different assumptions might have.

We received responses which favoured both option 1 (which assumed flat real operating expenditure in 2004-05 and 2005-06) and option 5 (using the forecast operating expenditure which Scottish Water submitted in its second draft business plan in April 2005).

Scottish Water expects to make significant progress on operating expenditure in 2004-05 and 2005-06.

One respondent said that by using a baseline of 2003-04 and 2004-05 to calculate efficiency targets then applying these efficiency targets to 2005-06 operating costs, we would overstate the efficiency gap, especially when a company was closing the gap on the frontier company. We agree that where a company is closing the efficiency gap, it could be inconsistent to apply a target calculated on historic inefficient performance to an

expected future (efficient) performance.

However, we are minded to calculate the efficiency gap and target allowable operating expenditure for 2006-10 using reported information for 2003-04 (draft determinations) then 2004-05 (final determinations). We propose to ensure that the profile of our targets for 2006-10 is achievable from Scottish Water's expected performance in 2005-06.

Our methodology consultation explained that we need to consider the potential changes in baseline operating expenditure, outside the control of management, which could occur during the regulatory control period. We gave three examples of such changes, namely pension costs, rateable values and energy costs. We also asked stakeholders' views about any other factors that could result in changes in baseline operating expenditure in 2006-10.

One of the respondents put forward particular concerns about the factors we had identified in the consultation. Another suggested that we should extend our list of factors to include running costs of the retail business and 'others'.

We set out a number of criteria for assessing Scottish Water's claims for changes in baseline operating expenditure and respondents agreed that these were suitable.

One respondent raised concerns about the transparency of adjusting base operating expenditure claims for inflation. We will ensure that any adjustments made to claims for increases in base operating expenditure are fully explained in the draft determination.

Ensuring like-for-like comparisons of efficiency

Our methodology described our approach to comparing Scottish Water's performance with that of other water and sewerage undertakers, and explained the steps we take to ensure that our assessment of Scottish Water's efficiency is fair, accurate and is made on a like-for-like basis.

We explained that we use benchmarking techniques to assess Scottish Water's relative efficiency and that essentially these techniques involve comparisons of Scottish Water's performance with that of the companies in England and Wales.

The approach we have chosen to employ is a 'top down' approach; in other words, our comparisons with the water and sewerage companies in England and Wales remain at a relatively high level. Most respondents agreed that this approach is the most appropriate way to compare Scottish Water's performance with that of the companies south of the border.

Ofwat's approach to assessing operating cost efficiency

Our methodology consultation explained that we proposed to extend the Ofwat econometric models for operating expenditure to Scotland as we believe these models are robust and can be applied to Scottish Water. Stakeholders generally agreed with this; one respondent asserted that the ten companies in England and Wales represent a "very reliable pool of industry performance data". However, the responses we received did highlight some concerns about Ofwat's approach.

For example, one respondent noted that only six of the nine Ofwat models were 'econometric' in the usual sense of the word, and that the explanatory power of the models was low. Other respondents argued that we should make a greater adjustment for errors in modelling. This is based on a report which suggests that only around half of the residual calculated by Ofwat's models could be attributed to inefficiency. We will review and, where appropriate, incorporate the evidence into our approach. However, we note that the Ofwat models have been extensively reviewed by the Competition Commission and found to be reliable.

An alternative way to assess operating cost efficiency

At the time of the last Strategic Review, we developed an alternative model to assess Scottish Water's efficiency. This was in addition to our use of the Ofwat models. We wanted to ensure that we were using two independent,

robust approaches and that our targets were objective and properly justified. The alternative model was used to check the results of the Ofwat econometric models.

In our methodology consultation, we explained that we proposed to develop a revised version of the alternative model, which would include Scottish Water within the 'standard' unit cost calculations. We sought stakeholders' views about the alternative model and about our plans to develop it further.

Two respondents supported the development of an alternative model. One respondent raised concerns about our approach, claiming that our model is a unit cost model and, as such, is not robust. Respondents also observed that the alternative model incorporates economies of scale whereas the Ofwat econometric models generally do not.

We are not yet persuaded by this line of argument. Most of Ofwat's econometric models incorporate economies of scale, either at plant level (size of treatment works) or overall.

Our methodology consultation went on to ask stakeholders if they could suggest other approaches to assessing the scope for operating efficiency. One respondent suggested that a simple way to assess efficiency would be to look at the efficiency achievements made by the water and sewerage companies in England and Wales in the years following privatisation. We agree that these efficiency savings (provided they have been appropriately calculated) should inform our targets, because they demonstrate the rate of progress that can be achieved.

Another suggestion was to use panel data (which involves taking information over more than one year) to assess relative efficiency. We are currently reviewing this suggestion and will include our conclusions in the draft determination.

Ensuring that modelled results are objective and fair

Our models cannot take account of all of the factors that influence costs. Some of these factors (those that are

endogenous, that is, within the control of management) should be excluded from the model. Others, which may relate to the operating environment or the level of service, may increase or decrease the level of cost.

We asked stakeholders if they agreed that we should take differences in the scope of activities and the level of service provided into account when determining Scottish Water's operating efficiency relative to that of the companies south of the border. We also asked which differences stakeholders thought should be recognised.

Respondents generally agreed that we should take account of differences in scope and in the level of service when assessing operating expenditure efficiency.

One respondent, while endorsing this general principle, argued that these differences could only be quantified in a way that increases – not decreases – costs. They argued that Ofwat does not take account of negative special factors. We consider that it is only logical, and in customers' interests, to take account of factors that increase or decrease costs.

It is not a simple process to assess the cost of any such differences. Our methodology consultation set out a range of possible approaches. One respondent agreed with two of the options: using information from the companies south of the border to place a monetary value on differences in the scope of activities and levels of service; and asking Scottish Water to estimate the additional cost of providing both the equivalent scope of activities and level of service to England and Wales.

We are minded to use:

- information from the companies in England and Wales to assess the costs of additional scope (as Scottish Water would not require this information to plan); and
- information from Scottish Water (as far as possible) to assess the costs of additional levels of service, since Scottish Water needs to understand and plan this.

The scope and timeframe for improvement

Our methodology consultation explained our approach to assessing the scope for Scottish Water to improve its performance. We set out the approach in terms of six main strands of analysis. We received a number of responses relating to this issue.

One respondent agreed with our approach. Another explained that their own analysis of the rate of catch-up shows that there is no relationship between the initial level of efficiency and the rate of catch-up. We believe that this difference stems from the fact that our analysis relies on efficiency scores rather than efficiency bandings.

A respondent felt that we should not base our assessment on the best five years' performance in England and Wales as this could overstate potential efficiency savings. We are continuing to review evidence on this issue but would tend to believe that if a significant and demonstrable efficiency gap exists, it is in customers' interests to assess the pace of improvement that has been shown to be achievable.

New operating expenditure

Scottish Water could incur significant new operating costs in the next regulatory control period. It is important for us to scrutinise carefully any claims for such new operating costs to be included in price limits.

Our methodology consultation explained that we propose to continue to place the onus on Scottish Water to identify and justify new operating expenditure. It also stated that we planned to use the same criteria as at the last Strategic Review in assessing new operating expenditure.

Respondents generally agreed that these criteria continue to be appropriate for the 2006-10 review. Scottish Water, however, did not agree with the criteria.

The methodology consultation explained that we share Ofwat's view that it is easier to deliver efficiency savings in new operating expenditure than in baseline operating

expenditure. We said that we were likely to set higher efficiency targets (in percentage terms) for new operating expenditure than for baseline operating expenditure. We sought stakeholders' views on this point.

One respondent agreed that in general the scope for efficiency on new operating expenditure would be greater. However, they questioned whether, given Scottish Water's current inefficiency, there would not be greater scope to reduce base operating costs. While we agree that there will be scope for Scottish Water to reduce its base operating costs, we are continuing to assess the relative scope for efficiency in both new and base operating costs.

Another stakeholder argued that there is little regulatory precedent for setting higher efficiency targets on new operating expenditure relative to base operating expenditure. However, this is the approach that Ofwat has taken at each of its price reviews and we are minded to adopt the position we set out in the draft methodology.

Public Private Partnership financing

The nine PPP contracts represent capital investment on behalf of customers of around £550 million. These contracts appear to have represented good value for money at the time they were concluded. However, improvements in Scottish Water's performance have made it less clear that the PPP contracts represent good value for money to customers today.

Our methodology consultation highlighted the options that could be taken to reduce PPP costs. This included setting an efficiency target for PPP or adjusting the level of allowed revenue to reflect the efficient costs (financing and operating) of the services that are being delivered through PPP.

We suggested that if we found that customers were paying too much for the services provided (or would be by the end of the next regulatory control period), we would take account of this in Scottish Water's price caps.

We received several responses on the best approach to PPP contracts, offering a number of different views.

One respondent considered that setting an efficiency target for PPP contracts would be an excellent initiative. Several respondents, on the other hand, argued against setting efficiency targets for PPP contracts. Although we do not necessarily agree with each of the arguments that were put forward, we have decided on balance that it is best not to pursue the proposal. One stakeholder suggested that we should not allow our criticisms of past PPP agreements to restrict the opportunity for Scottish Water to use this method of investment and service delivery if it represents best value for customers.

We still expect Scottish Water to manage these contracts to ensure that customers pay the minimum for their waste water service, including taking any opportunities available to renegotiate these contracts on more beneficial terms.

Setting the allowed level of operating costs

We propose to set targets for Scottish Water in terms of the total allowable operating expenditure (not including depreciation). We are keen to ensure that our targets are clear and unambiguous. We plan to set the total allowable operating expenditure at a level which we believe is sufficient for Scottish Water to carry out its operations for each year of the regulatory period. This is the amount that will be funded through charges to customers.

Our methodology consultation set out a detailed, eight-step process for calculating allowable operating expenditure. We received a number of responses in relation to our proposed approach.

One respondent said that it is important to distinguish between the scope for efficiency improvements and the target for allowable operating costs. Another agreed with our proposal to set allowable levels of operating expenditure for the wholesale water, wholesale sewerage and non-domestic retail components of Scottish Water. A third respondent welcomed the eight-step process as logical, clear and persuasive.

In response to our question about the scope for improved efficiency by Scottish Water, a respondent highlighted that the rate of improvement could be expected to be at least as high as that achieved by the companies in England and Wales over the last regulatory period. The respondent did not consider that Scottish Water's performance to date was necessarily a good guide.

We also asked if respondents had any views about Scottish Water's performance beyond 2010. A stakeholder suggested that franchise regulation may be more appropriate from that time. We are content that the regulatory framework, especially as it is being strengthened, should deliver significant benefits for customers. However, decisions concerning the model for service delivery are a matter for the Scottish Executive.

Regulating levels of service

Our methodology consultation explained that we have to determine how to ensure that an appropriate level of service is delivered at the same time as cost efficiencies are being achieved. We outlined two possible approaches:

- benchmarking Scottish Water's performance; and
- target setting for some or all aspects of service quality.

Our methodology consultation outlined the strengths and weaknesses of both approaches. We proposed to retain the benchmarking approach as it is tried and tested. However, we also consider that there may be a case for setting targets for certain key areas of service, such as leakage, if there is sufficient information to do so. We sought responses on both approaches.

One respondent supported both approaches. Another was of the view that target setting could require too much information and could breach the principles of transparency and proportionality. A third respondent agreed that each approach may be appropriate in different circumstances.

One respondent observed that adjusting the benchmarking approach so that new operating costs directed at improving levels of service are allowable fits the current circumstances of the water industry in Scotland well.

Another stated that the special factors that are relevant for assessing the efficiency gap are also relevant for assessing the service quality gap. We note that Ofwat does not consider company-specific factors when comparing levels of service.

We sought stakeholders' views about whether there are any targets that are appropriate in pursuing the benchmarking approach. Two respondents argued that it was inappropriate to set a target for leakage. Rather, the price cap mechanism should be used to provide an incentive for Scottish Water to achieve the economic level of leakage.

We are minded to set the allowed level of operating costs such that Scottish Water should deliver a level of service that is broadly equivalent to that provided by the companies south of the border. We are currently considering the use of milestones for customer service to monitor performance.

Monitoring operating expenditure and levels of service

It is our role to monitor progress against targets and to verify that service levels to customers do not suffer as a result of management action to reduce costs. The methodology consultation outlined the mechanisms and tools that we propose to use for this, and we sought responses on these proposals.

One respondent welcomed the appointment of a Reporter and the introduction of regulatory accounts in Scotland. They raised concerns about the size of adjustments to operating expenditure for monitoring purposes. Although we will continue to make adjustments so that we can make consistent and meaningful comparisons, we believe that regulatory accounts should reduce the need for such adjustments.

One respondent suggested a number of features that should be included within a framework for monitoring levels of service. Another suggested that the combination of monitoring Scottish Water's levels of service and its expenditure should ensure that customers are being well protected.

We are minded to continue to monitor carefully both the level of service provided and the level of cost incurred. In this regard, we continue to believe that if we need to make adjustments to ensure like-for-like comparison, it is in customers' interests that we do this.

Chapter 5

The scope for capital investment efficiency

Introduction

Volume 5 of our methodology consultation described how we proposed to set the level of expenditure for Scottish Water to meet the investment priorities outlined in the Ministers' guidance at the *Strategic Review of Charges 2006-10*.

The methodology consultation explained in detail our proposed approach to assessing the scope for capital expenditure efficiency. In particular, it:

- provided an introduction to the components of capital investment in Scotland and explained the Quality and Standards investment programme;
- discussed the issues that need to be addressed in order to establish a robust baseline for the investment programme; and
- outlined how we proposed to compare Scottish Water's relative capital expenditure efficiency with that of the companies south of the border.

The Scottish Executive's consultation: 'Investing in water services 2006-14'

Scottish Ministers are responsible for defining investment priorities for the water industry in Scotland. The Quality and Standards process identifies the priorities of customers, the quality regulators and other stakeholders. Ministers also sought views on these issues in its consultation, 'Investing in water services 2006-14'.

Our methodology consultation explained that one of the disappointments of *Quality and Standards II* has been the difficulties faced by both stakeholders and customers in monitoring Scottish Water's delivery of the investment programme. Scottish Water's process of trying to clarify a detailed baseline of outputs took far longer than it should have done.

We do now have what we believe is a broadly complete list of all of the projects to be delivered in *Quality and Standards II*. In preparing for the next regulatory control period, lessons must be learned from the experience with *Quality and Standards II*. In other words, there is a clear need for a detailed definition of the baseline capital programme. This should determine the investment priorities for the period 2006-14.

Our methodology consultation outlined the issues raised in the Scottish Executive's consultation, 'Investing in water services 2006-14', and summarised our response. Our main concerns are that the investment programme should be properly defined, that the inputs and outputs should be measurable, and that the investment programme is placed in the public domain.

We believe that these steps are necessary to ensure that:

- stakeholders have a common understanding of what is included in the investment programme;
- customers' expectations can be met; and
- delivery of the *Quality and Standards III* investment programme can be monitored effectively.

Our methodology consultation proposed that the investment programme should be defined in detail at an asset level, and that it should be placed in the public domain. The majority of respondents agreed that the final investment programme should be defined in detail at an asset level. One respondent questioned whether the entirety of the investment programme could be defined at this level of detail.

The majority of respondents agreed that this information should be available in the public domain. One respondent was concerned that publication of information could affect commercial negotiations for those contracts not yet agreed. While we recognise that publishing the list of projects may affect commercial negotiations, we believe that it is likely to be in customers' interests. We are therefore minded to publish

this information, although we would take into account the commercial sensitivity of any relevant information.

Capital maintenance

Capital maintenance is important to the ongoing effective management of the assets. Replacing assets in a timely way is essential to maximising the cost effectiveness of the network's performance and maintaining the level of service to customers.

Our methodology consultation explained that in the 2006-10 review we propose to allow a level of capital maintenance expenditure that provides sufficient investment to maintain the asset base in the long term. This will ensure that present and future customers receive an acceptable level of service.

The UK Water Industry Research (UKWIR) common framework for capital maintenance provides a standard way to estimate the future requirement for capital maintenance to provide defined levels of service to customers and the environment. It emphasises the importance of using both levels of service indicators (such as drinking water quality) and asset performance indicators.

Our methodology consultation highlighted our support for the use of the common framework approach to capital maintenance. Throughout the *Quality and Standards III* process we have encouraged Scottish Water to adopt the framework's principles in developing its capital maintenance proposals. In the *Strategic Review of Charges 2006-10*, we will review Scottish Water's use of the common framework approach to establish its requirement for capital maintenance.

Our methodology consultation asked whether respondents agreed that the UKWIR common framework provides a suitable mechanism for establishing Scottish Water's capital maintenance requirements.

The majority of respondents agreed that the UKWIR approach does provide a suitable mechanism. One respondent noted that successful implementation of the framework would require Scottish Water to develop an

appropriate methodology. Another respondent suggested that it could be difficult to implement the framework fully.

Our approach to assessing the appropriate level of capital maintenance is likely to depend on the detail of Scottish Water's proposed investment programme and its explanation of the detail of its proposed capital maintenance programme. Scottish Water has submitted its investment plan and we are currently reviewing this in detail.

We set out a three-stage approach to assessing the requirement for capital maintenance. This approach considers each of three investment drivers and ensures that investment in improving the quality of service to customers has already taken account of capital maintenance.

We sought stakeholders' views about our proposed approach to establishing whether Scottish Water's capital maintenance proposals are justified, well costed and meet best practice.

The majority of responses agreed with our proposed three-stage approach. Our actual approach will depend on the definition of the information we receive.

Implications of the quality programme

Investment in improving water quality and the environment has, in recent years, been the largest driver of capital investment in the water industry in Britain. This is likely to continue for the foreseeable future. It is essential to ensure that customers receive the benefit of this investment and that it represents good value for money.

Most quality investment is required to comply with European legislation and national government policy. Quality investment may also be required to improve the level of service provided to customers.

Our methodology consultation explained our approach to assessing Scottish Water's quality investment proposals. We intend to ensure that such proposals are properly defined, accurately costed and effectively and efficiently delivered.

We explained that in assessing Scottish Water's quality investment proposals we will take account of:

- Ministerial guidance on the overall objectives of the investment programme;
- the quality investment requirements identified by the *Quality and Standards III* process; and
- Scottish Water's initial and final business plan submissions.

We will require a detailed investment plan from Scottish Water. The Reporter's assessment of the proposals will also form a key part of our analysis.

We sought respondents' views about our proposed approach to assessing Scottish Water's quality investment proposals. The majority of respondents agreed with the proposed approach.

One respondent highlighted the role of other regulators in interpreting legal obligations and ministerial guidance. We do not disagree and are working closely with the Drinking Water Quality Regulator (DWQR) and the Scottish Environment Protection Agency (SEPA). In the light of concerns raised by the Reporter, we have commissioned a further examination of Scottish Water's capital programme. We believe that this study may be important in determining the allowed level of capital expenditure.

We also asked stakeholders if there were any other factors that we needed to take into account to ensure that customers receive value for money.

One respondent questioned whether the requirements for Scotland went beyond those for England and Wales and could be supported by cost benefit analysis. This is a matter for the Scottish Ministers, who set the investment objectives for the industry.

Investment to balance supply and demand

In order to meet the expectations of customers, Scottish Water must invest in its water and waste water capacity. It must also ensure that it is able to meet reasonable demand for those services.

Our methodology consultation highlighted the need to make sure that this investment is carried out in an efficient way. Investment planning is critical to this.

Our assessment of investment planning centres on whether or not Scottish Water has adopted an economic approach. This means that it should make choices about investment with reference to the costs for customers and for the environment. For example, we will require evidence that a comprehensive range of supply/demand balance options has been considered and that the costs of these have been properly estimated.

Our methodology consultation set out the elements of an economic approach, and sought stakeholders' views on our proposed approach.

Respondents generally agreed that it is important to implement a framework for assessing Scottish Water's water resource planning. However, some questioned whether sufficient information existed to do so effectively for leakage.

We also asked whether there were any other factors that needed to be taken into account to ensure that customers receive value for money. The majority of respondents suggested that sufficient factors had been captured. One respondent suggested four additional factors that should be considered.

We are reviewing suggestions from respondents and will set out in the draft determination our approach for ensuring that customers get value for money from investment to meet the Ministers' objectives.

Capital expenditure in the Scottish water and waste water industry

Our methodology consultation examined historic levels of capital investment in the water industry in Scotland, and compared these with levels of investment in England and Wales. Our analysis confirmed that:

- the size and composition of the asset base in Scotland is similar to that in England and Wales;
- the condition and performance of the assets in Scotland appears to be no worse than in England and Wales; and
- by the end of the current regulatory period, investment levels per property in Scotland will be equivalent to those in England and Wales over the previous ten and 20-year periods.

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

The experience in trying to determine the capital investment programme for *Quality and Standards II* has taught us that a fully defined programme must be in place at the outset of the *Quality and Standards III* process. Our discussions with SEPA and the DWQR have also led us to conclude that the outputs to be delivered by each project must be clearly defined and quantified at the outset.

A detailed baseline programme will bring benefits for customers and, as such, is an important input to the *Strategic Review of Charges 2006-10*. Capital projects such as treatment plant upgrades or pipe renewal can have a major impact on customers and local communities.

In the methodology consultation, we proposed that the baseline investment programme should be published in full. This would help ensure greater transparency and accountability. We sought stakeholders' views about whether the programme should be published, and, if so, whether it should be published in full or in the form of regional lists.

All respondents agreed that the investment programme should be published. One respondent noted, however, that it should be clearly indicated that the programme will be subject to change through the substitution process. This suggestion is in line with our current thinking.

Our methodology consultation explained that it seems increasingly likely that a significant proportion of *Quality and Standards II* will not be delivered on time. The delay in delivering *Quality and Standards II* suggests that an 'early start' programme for *Quality and Standards III* is inappropriate until a full definition of any potential overhang is agreed.

We asked stakeholders if they supported this view and most respondents strongly agreed. One respondent suggested that the overhang from *Quality and Standards II* would not impact on *Quality and Standards III*.

Ability to deliver the investment programme

The size of the programme that Scottish Water has to deliver will depend on the extent of the overhang from *Quality and Standards II* and on the investment priorities for *Quality and Standards III* that were outlined in the Ministerial Guidance.

It appears likely that there will be an overhang from *Quality and Standards II* into the next regulatory control period. We have written to Scottish Water to confirm the cash resources that we expect to allow to be carried over. We are also planning to write to Scottish Water seeking its views on handling the overhang from *Quality and Standards II*.

We asked for respondents' views on how we should treat the potential overhang from *Quality and Standards II*. The majority of responses advocated the use of a prioritisation process to identify the critical elements of *Quality and Standards II*. One respondent noted that the *Quality and Standards II* overhang should be kept distinct from *Quality and Standards III* and assessed against a set of separate deliverables.

We believe that it is important that we learn from this experience by setting a capital programme that can be delivered efficiently. This is in the longer term interests of customers, the environment and public health.

We asked respondents whether we should learn from the *Quality and Standards II* experience in setting the investment programme for the next regulatory control period. The majority of respondents confirmed their support. One respondent agreed that our analysis highlighted the issue of deliverability and suggested that further analysis could be useful.

Finally, we asked for views about whether we should adjust the efficiency target if the proposed investment programme proves to be very large. Respondents suggested that we should adjust the efficiency target. One respondent suggested that this adjustment should be downwards. We will take into account comments made in Scottish Water's second draft business plan in the draft determination.

Defining the investment programme

A baseline for the capital investment programme is the agreed detailed list of capital projects that Scottish Water will deliver during the next regulatory control period. It is a key part of the regulatory contract between Scottish Water and its customers.

Our methodology consultation outlined the process we propose to adopt in setting a capital investment baseline for the regulatory control period 2006-10. This process takes full account of experience gained during the current regulatory control period.

Our view is that the baseline investment programme should be clear, comprehensive and accessible. We outlined the detailed elements that we would require in defining the baseline capital programme. We are trying to strike a balance between the needs of stakeholders and the reporting burden on Scottish Water. We have allowed Scottish Water to combine very small capital maintenance projects for reporting purposes and hope that this will significantly reduce the information burden. In addition, we consider that the level of detail required is consistent both with the lessons learned from *Quality*

and Standards II and with the reporting burden on the companies in England and Wales.

We asked stakeholders if they thought that the proposed degree of definition for the baseline investment programme was sufficient. We also asked if they had views about other information that should be captured, and why.

The majority of respondents agreed that the level of detail was sufficient. One respondent said that it was unclear whether measurements of delivery would be based on inputs or outputs. Our view is that we monitor outputs but maintain a close eye on inputs in order to understand likely progress in the delivery of outputs.

We also asked respondents if they agreed with the rationale we had given in the methodology consultation for the extent of definition of the baseline investment programme. In particular, we wanted to know if stakeholders thought that the reporting burden on Scottish Water was appropriate.

The majority of respondents agreed that this level of information should be collected. One respondent suggested that the detailed information was already collected by Scottish Water, so should not represent an onerous burden.

Another respondent was concerned that the information requirements went beyond the level of detail required by comparable regulators such as Ofwat. We are not persuaded of this, as we have endeavoured to draw heavily on Ofwat's most recent approach in determining our information requirements.

Investment programme review

The guidance that the Scottish Ministers provide on investment priorities is at a relatively high level. Scottish Water then had to translate this set of objectives into a fully defined, project-level investment programme in its second draft business plan.

An important step at that stage is for us to review Scottish Water's proposals to ensure that they meet the required objectives in the most effective way possible.

This helps ensure that costs to customers are minimised and that stakeholders' requirements are met.

Our methodology consultation explained that in reviewing Scottish Water's proposed investment programme we would work closely with the Reporter, SEPA and the DWQR. The review process may lead us to seek changes in Scottish Water's capital expenditure proposals. The revised programme will then form the baseline to which we can apply targets for capital efficiency.

Our proposal to use the Reporter to carry out the review is consistent with the approach adopted by Ofwat. We asked stakeholders if they agreed that the Reporter should undertake the review. If they did not agree, we asked who else they thought should be used for this exercise. Respondents generally agreed that it would be appropriate to use a Reporter.

Our methodology consultation set out the criteria we proposed to use in reviewing the investment programme. We sought stakeholders' views about our proposed process and whether they considered it met the needs of customers and stakeholders.

Most respondents agreed that the process would meet the needs of customers and stakeholders. One respondent was concerned that the Water Customer Consultation Panels (WCCP) would not be represented.

We also asked if stakeholders thought the proposed areas of assessment were sufficient to ensure that the programme is deliverable, takes full account of potential synergies and will meet the objectives set out by Ministers.

While in broad agreement that the assessment would ensure that the programme is deliverable, some were confused over the exact details. One respondent believed that the assessment did not fully address whether or not the programme is deliverable.

We do not have a role in questioning the objectives set by Ministers. Our review of the investment programme is designed to ensure that Ministers' objectives should be delivered for the lowest reasonable cost.

In order to ensure that we understand the lowest reasonable cost of the capital programme, we have commissioned an additional review of the investment programme contained in Scottish Water's second draft business plan. This review is being led by two consultant engineering firms.

How Ofwat assesses capital expenditure efficiency

Our methodology consultation examined different ways to assess the scope for capital expenditure efficiency. By efficiency we mean the scope for delivering the same set of objectives from the investment programme, but for less money.

Capital expenditure efficiency can be achieved in a number of ways, including improved strategic and project planning, better procurement and the use of innovative techniques.

We explained that Ofwat adopts a four-stage approach to determining the capital expenditure requirements of the companies in England and Wales. The assessment of the scope for capital expenditure efficiency is the third of the four stages. Ofwat adopts different approaches for capital maintenance expenditure and for capital enhancement expenditure.

Ofwat's methods to assess the scope for capital expenditure efficiency are well established and have been developed over a number of years. They use detailed econometric models, specific to the water and waste water industry. We asked stakeholders for their views about Ofwat's methods for assessing capital expenditure efficiency.

Some respondents supported the use of the Ofwat models. Others expressed concern that the explanatory factors within the models were too limited and placed too great a focus on efficiency at the expense of other possible factors. One respondent disagreed that Ofwat can determine relative efficiency accurately.

We are considering evidence provided by Scottish Water. We currently hold the view that these Ofwat models (with proper account taken of information

provided by Scottish Water) are an appropriate way forward.

We also asked if stakeholders could suggest any other approaches to assessing the scope for capital expenditure efficiency. One respondent suggested that we should use a range of statistical techniques to support our analysis. Another recommended including an assessment of best practice. A third suggested using existing capital expenditure efficiency targets established by Ofwat for Scottish Water's partners in its joint venture company Scottish Water Solutions – United Utilities and Thames Water.

We are not yet persuaded of the practicality of these approaches.

Other ways to assess capital expenditure efficiency

Our approach to determining the scope for capital expenditure efficiency targets in the *Strategic Review of Charges 2002-06* drew on Ofwat's approach. However, we had to adapt the approach to reflect the limited information that was available to us at that time concerning the Scottish water industry.

The methodology consultation presented an overview of the approaches taken by the economic regulators of the electricity, gas, rail infrastructure, telecommunications, post and aviation industries in assessing the scope for capital efficiency. There is no standard regulatory approach, as regulators have tailored their approach to the particular characteristics and asset bases of the industry they regulate.

We are keen to take account of different regulatory approaches and asked stakeholders if there were any lessons we could learn from the experience of other regulators.

Respondents generally believed that the experience of other regulators was valuable, but could not be directly applied to the Scottish water industry. We broadly agree with this view.

Our proposed approach to assessing capital investment efficiency

In the *Strategic Review of Charges 2006-10*, we plan to use Ofwat's econometric models and its cost base approach to assess the scope for efficiency in Scottish Water's capital investment programme. Our methodology consultation explained that we propose to adapt Ofwat's approach in order to accommodate the remaining differences in the quality of regulatory information. We outlined in some detail the econometric models and the cost base techniques that Ofwat uses.

We have collected cost base information for Scottish Water and the three former authorities since 2000-01. In 2004, we updated our requirements for cost base information to ensure that our approach would be consistent with that used by Ofwat. We can therefore apply the cost base approach to both capital maintenance and capital enhancement investment.

It is necessary for us to make some largely technical adjustments to the econometric models to ensure that we can use them to analyse Scottish Water's performance. This includes adjusting for the different timeframes of the regulatory control periods, taking account of the range of performance in England and Wales, and accounting for the characteristics of Scotland and Scottish Water.

We sought views on our proposal to use the cost base as the basis for establishing an efficient level of capital enhancement expenditure, and the majority of respondents supported this approach. One respondent was concerned that we would adopt Ofwat's view that catch-up efficiencies should be achieved in year one of the regulatory control period. Our current thinking is that we will phase catch-up efficiency targets over the first three years.

We explained that we propose to assess special factors for capital expenditure in the same way as we assess special factors for operating expenditure. We will examine very closely any justifications for increasing the cost of the investment programme. In so doing, we need to take account of any relevant factors that are beyond management control but which influence costs. Our

methodology consultation explained that we asked Scottish Water, as part of its business plan submissions, to draw to our attention all factors that increase or decrease cost. To justify an adjustment because of a special factor Scottish Water would have to provide evidence in a number of areas.

Our methodology consultation asked if respondents considered that our proposed mechanisms for taking account of special factors is appropriate.

Most respondents who raised concerns about the proposed approach suggested that the range of explanatory factors within the Ofwat models were insufficient. One respondent questioned the validity of comparing Scottish Water with the English and Welsh companies. They were also concerned that recent increases in the allowed level of capital maintenance in England and Wales would not be extended to Scottish Water.

Our intention is to treat Scottish Water appropriately given its efficiency position and current level of capital maintenance spending. We are considering all of the evidence available in setting an appropriate level of spending.

The scope and pace for improvement

In our methodology consultation we explained that we need to make decisions about how quickly Scottish Water should be able to achieve efficiency improvements. We set out the approach we plan to adopt in assessing the pace for improvement. We proposed adopting the Competition Commission's approach in its review of the Ofwat 1999 price determinations for Mid Kent Water and Sutton & East Surrey Water, by phasing the required catch-up improvement over the first three years of the regulatory control period. This would give Scottish Water the opportunity to implement improvements in asset management techniques.

We are able to draw on regulatory precedent in the water and waste water industry. As we highlighted in our consultation, it is clear that Ofwat continues to believe that there is scope for further capital efficiency

improvement in the water and waste water industry south of the border. The companies have been successful in out-performing the relatively challenging efficiency targets that have been set in earlier price reviews. This would indicate that there is significant scope for Scottish Water to achieve further savings in investment performance.

In the *Strategic Review of Charges 2006-10*, we proposed introducing an incentive framework that rewards Scottish Water for out-performance on investment and provides benefits to customers and stakeholders. Scottish Water would be allowed to retain a proportion of any out-performance in delivering the agreed capital investment programme. It would be able to use this out-performance to deliver additional capital investment outputs identified by stakeholders or invest in 'spend to save'. Scottish Water could take credit for adding outputs that were not funded in the original capital investment programme. Stakeholders would be asked to agree the projects to be funded. Realistically, confident judgements about progress in capital efficiency will only be able to be made towards or at the end of the regulatory control period.

We asked for respondents' views on our proposed approach to establishing the scope for improvement in capital efficiency. Most respondents agreed with the approach. One suggested that econometric models or the cost base approach were not sufficiently robust bases to assess comparative efficiency. We plan to review all of the evidence available to us before drawing any conclusions on relative performance.

We also asked if stakeholders thought we should treat capital maintenance and capital enhancement expenditure separately. Some respondents agreed that the two forms of expenditure should be treated separately. However, the majority suggested that the distinction had been previously overstated or was not appropriate to make at all.

We are minded to treat these two forms of expenditure separately. To do otherwise is likely to reduce the transparency of our approach and the validity of our comparisons with the companies south of the border.

We asked if respondents agreed with our proposals to introduce an incentive mechanism for out-performance, and if they considered that the proposed mechanism would provide appropriate incentives for out-performance.

All respondents broadly supported our proposals. However, one respondent suggested that there should be symmetry in the way out-performance and underperformance are treated.

As our methodology consultation explained, introducing incentive-based regulation should protect customers from the risk of underperformance by Scottish Water. This will only be achieved if the costs of such underperformance are met by a third party and at no cost to customers. In the public sector model this would require the Scottish Executive to provide grant-in-aid funds to make good these costs. This should ensure that the Scottish Executive scrutinises Scottish Water's performance more rigorously; it will also be less likely to increase Scottish Water's borrowing in the event of a failure to meet targets.

We asked whether respondents agreed that any future failure to meet efficiency targets should be funded by grant-in-aid from the Scottish Executive. The majority of respondents did so. One respondent suggested that it went beyond our remit to suggest how underperformance should be funded.

This approach seems to be consistent with Ministerial Guidance. Ministers have confirmed that public expenditure support to Scottish Water in the provision of its core services throughout the period 2006-10 will take the form of lending alone and that no grant will be paid in respect of these services during the period. Ministers have also endorsed the principle that customers should not be asked to pay twice for the same benefit. Customers should be asked to meet additional costs beyond those allowed for in a charges determination only where these have arisen as the result of external factors beyond Scottish Water's control.

Setting targets for efficiency in capital expenditure

The methodology consultation set out our proposed overall framework for setting targets. It explained that our approach focuses on maximising the delivery of investment outputs, which have been identified as priorities by Ministers and stakeholders, within an overall level of investment spend that is consistent with efficient delivery.

Setting challenging but achievable targets benefits customers and stakeholders. It should result in more effective investment, delivered at lower cost. Our methodology consultation set out the step-by-step approach by which we would arrive at the total allowable investment expenditure for each year of the next regulatory control period.

We asked respondents if they considered that our proposed methodology for setting targets is robust. The majority of respondents agreed. They also agreed that we should take account of the critical factors outlined in the methodology in setting investment targets for Scottish Water.

We also asked stakeholders if they thought that the scope for improvement is different between capital maintenance and capital enhancement. Some agreed, although others reiterated their concerns that separate efficiency targets should not be set for capital maintenance and capital enhancement expenditure.

Monitoring capital delivery

We believe that monitoring and reporting on Scottish Water's performance in achieving targets is critical to ensuring that customers receive value for money. Our regular Investment and Asset Management Reports provide customers and stakeholders with an objective assessment of Scottish Water's performance.

In recent years we have established a framework for monitoring capital expenditure. Our methodology consultation explained how we propose to develop this framework, and sought views on our proposed approach. Respondents were supportive.

Some respondents emphasised the importance of joint monitoring between relevant regulators to ensure effective joint planning. We concur on the importance of this. Respondents also confirmed that our regulatory reporting mechanism is sufficient to meet the needs of both customers and stakeholders.

Appendix 1

Questions from the methodology consultation

Volume 3: The calculation of prices

Chapter 3: An introduction to depreciation

1. Is the proposed approach to depreciation for the *Strategic Review of Charges 2006-10* appropriate? In particular:
2. Is the proposed method of determining asset life, through a five-stage classification from 'very short' to 'long', adequate?
3. Is straight-line depreciation the most appropriate mechanism for assessing the annual reduction in value of Scottish Water's assets?
4. Does the proposed use of MEA valuation provide a suitable method for estimating the economic value of Scottish Water's assets or would other methods give a better estimation?

Chapter 4: Managing risk in the public sector

5. Do respondents agree that we should extend risk analysis to cover the financial ratio comparisons?
6. Do respondents agree that access to borrowing should require Scottish Water to conform to the same disciplines and control that apply in the private sector?
7. Do respondents agree that customers should not pay for a failure to meet agreed targets?
8. Are there other factors that we should take into account in minimising the risks to customers both now and in the future?

Chapter 5: How we propose to set prices

9. Do customers agree that the regulatory capital method of price setting will help to facilitate comparisons between the water industry in Scotland and south of the border? If not, what are the alternative methods they would suggest?

10. Do customers agree that it would be better to set a series of price caps rather than the current system of setting a single revenue cap?

11. Are there other actions we should consider to improve the transparency of the price setting process?

Chapter 6: Regulatory accounts and accounting separation

12. Do respondents agree with our proposal to require Scottish Water to submit regulatory accounts?

Chapter 7: Financial modelling

13. Do respondents agree with the financial assumptions that we propose to make?
14. Do respondents agree with our proposal to use the Ofwat ratios as the primary indicator of financial sustainability? If not, which ratios should we use?

Chapter 8: Establishing an initial RCV

15. Do stakeholders agree that there are broadly three ways to establish an initial RCV for Scottish Water?
16. Which method would stakeholders see as the most reliable, and why?

Chapter 9: Allowed rate of return

17. Do respondents agree that it would not be appropriate to adopt the rate of return allowed for the private sector water industry south of the border by Ofwat?
18. Do respondents agree that the hybrid approach described above should be used to set the allowed rate of return for Scottish Water? If not, what other method would respondents suggest? In particular how could the suggested method facilitate monitoring and avoid any incentive for any stakeholder to seek to change the ratio of debt to RCV?

19. Do respondents agree that we should make an allowance for embedded debt for this regulatory control period, but only make such allowances in the future if there has been a material change in the rate of inflation?

Chapter 10: Regulatory capital value – treatment of depreciation and additions

20. We would welcome the views of stakeholders on the content of this chapter. There are no specific consultation questions.

Chapter 11: Interim determinations and logging up and down

21. Do stakeholders believe that there should be a process to adjust prices during a regulatory control period? If so, should we seek to introduce a process for interim determinations?
22. Do stakeholders believe that it is appropriate to adjust prices in the next regulatory control period to reflect actual outcomes in the previous period? If so, should we seek to introduce a similar process to Ofwat's logging up and down?
23. What factors should trigger an interim determination? At what level of materiality should an interim determination be triggered?
24. Are there other relevant changes in circumstance that we should consider introducing?
25. What is the most effective method for consulting with customers about a potential price change?
26. Would customers prefer the regulator to revised prices downwards during a regulatory period (eg in the event of slow delivery of outputs) even if prices are likely to increase by a greater percentage in the future as a consequence?

Chapter 12: Setting price caps: the role of the tariff basket

27. Do you agree that the proposed approach for the tariff basket items is appropriate for Scotland?
28. Do you agree that we should introduce more tariff baskets than Ofwat?
29. Do you agree that we should establish tariff baskets for metered water and waste water customers with a standard connection?
30. Do you agree that the proposed method for calculating the weighted average price increase is the most appropriate method to use? If not, which alternative method would be more appropriate and why?

Chapter 13: Standard customers

31. Is a target date of the end of December for announcing tariffs (which will come into effect on 1 April in the following year) acceptable, given that details about tariff baskets and their weightings will be included in the *Strategic Review of Charges 2006-10*?
32. We would like to hear your views on the proposed changes to the standard customers used in the *Strategic Review of Charges 2002-06*. Do you feel that our proposals will make it easier to identify the customer group represented? Are there any other changes you would like to see being made?
33. We would like to hear your views on the proposed additions and changes to the standard customers, as detailed previously. Do you consider that we have achieved broad representation of the customer types? Are there any other customer types that we should add to the lists?
34. Are there any other customer types that are not properly represented in the revised list?
35. Do respondents consider that the criteria that we propose to use in assessing different approaches to

setting wholesale prices (ie that the approach should be theoretically sound, practical, consistent with Scottish Executive policy and flexible) are appropriate?

36. What are respondents' views on the ECPR, LRMC, accounting cost and comparator approaches to the setting of wholesale prices?
37. Do respondents agree that the split between wholesale and retail activities should be a notified item?

Chapter 15: Connection charging regime

38. Are there any lessons from England and Wales that you want to propose for application in Scotland?

Volume 4: Price cap regulation and the scope for operating cost efficiency

Chapter 3: Types of regulatory framework

1. Do stakeholders agree that the RPI-X framework is appropriate to the regulation of Scottish Water? If not, what alternative would you suggest and why?

Chapter 4: RPI-X incentive framework and benefit sharing

2. Assuming that an RCV approach is applied in Scotland in the *Strategic Review of Charges 2006-10*, is a cap required on the capital expenditure to be included in the RCV?
3. If so, should we implement a service-capping rule, similar to the one implemented by Ofwat in England and Wales?
4. Does the RPI-X mechanism provide appropriate incentives for Scottish Water?
5. Are there any significant differences between private and public companies, which we have not taken into account in this analysis?

6. Does our assessment of the importance of benefit sharing in providing incentives to Scottish Water to achieve efficiencies appear reasonable?
7. What level of transparency is appropriate for management bonuses in a public sector organisation?
8. Should management bonuses for Scottish Water be aligned with independently assessed regulatory and customer service targets?

Chapter 5: What is operating expenditure and why is it important?

No questions for consultation.

Chapter 6: Establishing a baseline for operating costs

9. When setting operating expenditure efficiency targets, do respondents agree that we should use 2003-04 as a base year for the draft determinations and 2004-05 as a base for the final determinations?
10. We invite comments on the most appropriate figure to use for baseline operating expenditure in 2005-06 and the impact that different assumptions may have.
11. What factors do stakeholders believe could result in changes in baseline operating expenditure in the period 2006-10?
12. Do stakeholders think that our criteria for assessing Scottish Water's claims for changes in baseline operating expenditure are sufficient?

Chapter 7: Ensuring like-for-like comparisons of efficiency

13. Do respondents agree that our proposed 'top-down' approach to benchmarking will provide the most appropriate method of comparing Scottish Water's performance?

Chapter 8: Ofwat's approach to assessing operating cost efficiency

14. Do respondents agree that the Ofwat econometric models for operating expenditure should be extended to Scotland for our *Strategic Review of Charges 2006-10*?

Chapter 9: An alternative method to assessing operating cost efficiency

15. What are your views on this alternative model?
16. What other approaches to the assessment of the scope for operating efficiency would you suggest? How would these work?

Chapter 10: Ensuring modelled results are objective and fair

17. Do you agree that it is appropriate to take into account differences in the scope of activities when determining Scottish Water's operating efficiency, relative to England and Wales? If so, which differences do you think are important to recognise and possibly take into account?
18. Do you agree that it is appropriate to take into account differences in levels of service when determining Scottish Water's operating efficiency, relative to England and Wales? If so, which differences do you think are important to recognise and possibly take into account?
19. How should we assess the cost of any such differences?

Chapter 11: The scope and timeframe for improvement

20. Do respondents agree with our proposed approach to assessing the rate at which any efficiency gap may be closed? If not, what approach would they suggest?

Chapter 12: New operating expenditure

21. Do respondents agree that the criteria that we adopted for assessing new operating expenditure at the *Strategic Review of Charges 2002-06* remain appropriate for assessing such expenditure for 2006-10?
22. Do respondents agree that there is greater scope for achieving efficiencies in new operating expenditure than in base operating expenditure?

Chapter 13: Public Private Partnership financing

23. Do respondents believe that we should set an efficiency target on PPP if we can identify that it is currently a more expensive option for customers? If not, why should customers be asked to pay more?
24. Do respondents believe that our approach to looking at the value for money of PPP is appropriate?
25. If we determined that an efficiency target was appropriate, should this be implemented at the start, during, or at the end of the next regulatory control period?

Chapter 14: Setting the allowed level of operating costs

26. What are the views of respondents on our proposals to set a level of allowable operating cost as the target for Scottish Water in each year of the regulatory control period?
27. What are the views of respondents on the scope for improved efficiency at Scottish Water? It would be helpful if stakeholders could express their views either with reference to the performance of the companies in England and Wales or to Scottish Water in isolation, and give reasons.
28. Do respondents have any views regarding Scottish Water's performance beyond 2010?
29. Do respondents believe that it is appropriate for us to set allowable levels of operating expenditure for

Scottish Water such that the corporation has an incentive to outperform? If so, what are respondents' views on the split between efficiency targets and the incentive to outperform?

30. Should we seek to set separate levels of allowable operating expenditure for the 'wholesale' sewerage, 'wholesale' water and non-domestic retail components of Scottish Water?

Chapter 15: Regulating levels of service

31. What are respondents' views on the benchmarking approach and the target setting approach?
32. What are respondents' views on our proposed approach?
33. Are there any targets (eg leakage) that are appropriate in pursuing the benchmarking approach?

Chapter 16: Monitoring operating expenditure and levels of service

34. What are respondents' views on our proposed approach to monitoring Scottish Water's performance?

Volume 5: The scope for capital investment efficiency

Chapter 2: The Scottish Executive's consultation: Investing in water services 2006-14

1. Do respondents agree that the final investment programme should be defined in detail at an asset level?
2. Do respondents agree that this investment programme should be placed in the public domain?

Chapter 3: Capital maintenance

3. Do respondents agree that the UKWIR common framework approach for capital maintenance provides a suitable mechanism for establishing

Scottish Water's capital maintenance requirements?

4. Do respondents agree that our three-stage approach will allow us to establish whether Scottish Water's capital maintenance proposals are justified, well costed and meet best practice?

Chapter 4: Implications of the quality programme

5. Do respondents agree with our proposed approach to assessing Scottish Water's quality investment proposals?
6. Are there other factors that we should take into account to ensure customers receive value for money?

Chapter 5: Investment to balance supply/demand

7. Do respondents agree with our proposed framework for assessing Scottish Water's water resource and sewerage and sewage treatment planning?
8. Are there other factors that we should take into account to ensure customers receive value for money?

Chapter 6: Capital expenditure in the Scottish water and waste water industry

9. Do respondents think that the scope for improvement is different between capital maintenance and capital enhancement and between water and sewerage?

Chapter 7: Lessons learned from establishing the baseline investment programme for Quality and Standards II

10. Do respondents agree that, based on experience from *Quality and Standards II*, a baseline investment programme detailing, at a project level, the deliverables from Scottish Water's capital expenditure is an essential pre-requisite for the *Strategic Review of Charges 2006-10*?
11. Do respondents think the investment programme

should be published? If so, should it be published in full or should regional lists be provided?

12. Do respondents agree that an 'early start' programme for *Quality and Standards III* is not appropriate unless appropriate definition of the *Quality and Standards II* and *III* programmes is available?

Chapter 8: Investment programme deliverability

13. How do respondents believe we should treat the potential overhang from *Quality and Standards II*?
14. Should we learn from this experience in setting the investment programme for the next regulatory control period?
15. What factors should we take into account in establishing the deliverability of the investment programme?
16. Should we adjust the efficiency target if the proposed investment programme is very large?

Chapter 9: Defining the investment programme

17. Is the proposed degree of definition for the baseline investment programme sufficient?
18. If not, what other information should be captured, and why?
19. Would respondents agree with the rationale given in this chapter for the extent of definition of the baseline investment programme? In particular, is the reporting burden on Scottish Water appropriate?

Chapter 10: Investment programme review

20. Do respondents agree with our proposed use of the Reporter to carry out the process of verifying Scottish Water's capital investment proposals? If not, which other party do you think should be used for this exercise and why?

21. Do respondents have comments on our proposed verification process?

22. Does it meet the needs of customers and stakeholders?

23. Are the proposed areas of assessment sufficient to ensure that the programme is deliverable, takes full account of potential synergies and will meet the objectives set out by Ministers?

Chapter 11: How Ofwat assesses capital expenditure efficiency

24. What are respondents' views on Ofwat's methods for assessing capital expenditure efficiency?
25. What other approaches to the assessment of the scope for capital efficiency would respondents suggest? How would these work?

Chapter 12: Other ways to assess capital expenditure efficiency

26. Are there any lessons that we should learn from the experience of other regulators?

Chapter 13: Our proposed approach to assessing capital investment efficiency

27. Do respondents agree that there are benefits in using Ofwat's benchmarking techniques to assess the scope for Scottish Water to improve its capital efficiency?
28. What are respondents' views on our proposed use of Ofwat's econometric models and cost base technique as the basis for establishing an efficient level of capital maintenance spend for Scottish Water? In particular, do our proposed adjustments to the econometric models appear appropriate? Are there other factors we should take into account?
29. What are respondents' views on our proposed use of the cost base as the basis for establishing an efficient level of capital enhancement spend?

30. Are our proposed mechanisms for taking account of 'special factors' appropriate?

Chapter 14: Scope for and pace for improvement

31. Do respondents agree with our proposed approach to establishing the scope for improvement in capital efficiency?
32. Do respondents consider that we should treat capital maintenance and capital enhancement expenditure separately?
33. Do respondents agree that our proposals for introducing an incentive mechanism for outperformance will be in the interests of customers and stakeholders? Does the proposed mechanism provide appropriate incentives for outperformance, and does it share the benefits fairly between Scottish Water and customers? If not, which other mechanism would be preferable?
34. Do respondents agree that any future failure to meet efficiency targets should be funded by grant-in-aid from the Scottish Executive?

Chapter 15: Setting targets for efficiency in capital expenditure

35. Do respondents think that our proposed methodology for setting targets is robust?
36. Do respondents agree that we should take account of the 'critical factors' we have listed (*Quality and Standards II* overhang, limitations on the size of the programme and incentives to outperform) in setting investment targets for Scottish Water? Are there any other factors that we should take into account?

Chapter 16: Monitoring capital delivery

37. Do respondents think that the scope for improvement is different between capital maintenance and capital enhancement and between water and sewerage?

Appendix 2

Responses to the methodology consultation

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Appendix 2

Responses to the methodology consultation

Responses to Volume 3

Dr Katherine Russell
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Dear Dr Russell,

The Calculation of Prices - Consultation

The Highland Council welcomes the opportunity to comment on the current consultation paper and has no objection to this response being made available in public.

You should be aware that your consultation was not considered by the Council or any one of its committees; however the detail of this response draws upon the discussion that Members had in early October on the two Scottish Executive water consultations.

Your paper is very technical and detailed, no doubt well founded on research and professional experience; however it was not an easy digest particularly for non professionals and even professionals in different fields to comment upon. It is for this reason that you may find some of our observations more general rather than specific. I hope none the less important for you to take on board.

Much of what the Scottish Executive is doing with our water industry has the Council's support, but there are some fundamental disagreements of which you should be aware, which also perhaps require to be taken account of in your work.

The following comments reflect views that the Council has expressed to the Scottish Executive in response to their recent consultations: -

- Members were perplexed that currently Scottish Water new investment is sized only on a like for like basis. It was considered that this is not a best value approach in that subsequent incremental additions to works will be costly when compared with oversizing the works in the first instance. If there is proper liaison between local planning authorities with our land use development plans, and Scottish Water's capital programme then it should be permissible for Scottish Water to oversize new works, perhaps then recovering the additional costs over a period from developers of new housing or other property.
- First time connection to the public water and sewerage network from properties which currently have their own private arrangements is seen as an important social and

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environmental consideration that should be properly funded, and again should not act as an insurmountable constraint on further modest growth in rural settlements.

- The windfall income, which will accrue to Scottish Water from the uplift in the Council tax payments made by second home owners, should be directed to provide new investment in small scale rural drainage. Failure to do this will substantially undermine the intention of the Scottish Executive and of the Highland Council to direct more resources to the supply of additional affordable housing in rural areas.
- The Council is generally supportive of the development of key principles that underpin water and waste water charges. However whilst there is a need to be open and transparent on the level of charges across all sectors paying for water and waste water, this financial framework cannot be seen in isolation from other community planning and best value interests. These dictate cross subsidies and higher levels of funding over those met by charges on current customers.
- The Council would ask the Scottish Executive to recognise that there are affordability issues that limit the extent to which the current exceptional investment programme including capacity for growth can be met from charges on current users. Additional public expenditure is therefore required during this major investment period to assist Scotland realise compliance with EU regulations; also investment to assist economic and household growth, particularly affordable housing needs across all communities. Scottish Water should be given a much higher borrowing capability to ease the price rises on all consumers.
- Measures should be encouraged that will provide meaningful financial incentives to householders and businesses of all types to conserve consumption and minimise the generation of high volumes and / or poor quality waste water. The current consultation is lamentably light on ideas for individual households and businesses to effect savings based on levels of consumption, rather than from standard charges based on non water-related charge bandings.

There are some fundamental differences reflected in the above views, which if carried forward into the work you have undertaken would impact on the approaches that you might employ. There is further concern from the approaches you have highlighted so far in your consultation, that you may be taking a narrow almost isolationist view of Scotland's water industry, and this should not be the case. Scottish Water solutions, affordability, pricing etc. must recognise that Scottish Water is responsible for a most significant part of Scotland's infrastructure that will enable (or provide a constraint on) economic growth, community development, social and environmental activities etc.. Your analysis must allow for Scottish Water to engage meaningfully in community planning activity and the outcomes that arise from that agenda.

The above concerns of the Council, such as investing in future development potential – oversizing works – should be a given. As a regulator concerned with current and future pricing of water and

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waste water, you cannot be comfortable with the current approaches of Scottish Water to make savings by developing works to sizes fit only for current usage, thereby placing a development constraint on communities whose future developers then face greater costs to provide water and waste water services.

Your analysis does not seem to take into account the significantly higher costs of providing, often first time, services in rural communities. You raise issues like fairness to existing customers, particularly the vulnerable assisting through any pricing regime the cost of providing water and waste water services to new development. The Council would also suggest that you take into account arguments that abound in relation to the higher costs per unit of providing services in rural areas, where the needs of any household or business are just as significant as elsewhere in Scotland. The current proposals by the Scottish Executive for agreed principles for charging as outlined in their consultation "Paying for Water Services" only partly address the rural concern outlined above. It was hoped that your office would give serious consideration to this point.

It is for example easier for Scottish Water to meet performance outcomes that they have provided x new homes and businesses with services for y cost staying within budget / pricing parameters, if all new developments are in the Central Belt; less easy where cost rises are more substantive in rural and island communities and where such developments will have less impact in terms of household numbers/ business enterprises, etc. It is not clear from your pricing assessment how you will address the rural dimension.

You propose the creation of new categories of customer for charging purposes. The Council would caution against increased complexity in the development of new tariff baskets. The current business rate model has degrees of simplicity that have been proven over time. Any additional complexities can only increase uncertainty and administrative cost, the last thing Scotland plc needs. Increasing water charges are inevitable. We have to face this fact and recognise that in part the funding for this has to come from general public expenditure. The agenda should not be to push the costs / tax rises off from our current tax raising framework and onto a more complex service driven utility.

Should you require further information and discussion on these matters please do not hesitate to contact me direct.

Yours sincerely



Kenneth D. McCorquodale (Policy Officer)

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Scottish Water response to Volume 3

Chapter 3: An introduction to depreciation

2 Is the proposed method of determining asset life, through a five stage classification from 'very short' to 'long' adequate?

We believe a classification of our assets into five asset life categories from "short" to "very long" is sensible and consistent with Ofwat's regulatory precedent but minor adjustments to Ofwat's classification might be necessary to take into account our specific circumstances.

3 Is straight line depreciation the most appropriate mechanism for assessing the annual reduction in value of Scottish Water's assets?

We find straight line depreciation of our non-infrastructure assets acceptable for the time being (whether or not it is "the most appropriate mechanism").

It is consistent with Ofwat's approach and our own approach in the Draft Business Plans. We note that there are good arguments for forward tilting depreciation where technical progress or expected downward revaluations of MEA will limit the future ability to recover capex via depreciation.

Chapter 6: Regulatory accounts and accounting separation

12 Do respondents agree with our proposal to require Scottish Water to submit regulatory accounts?

We understand and agree the need for regulatory accounts for the core business.

Chapter 7: Financial Modelling

Set out below are our current comments about the financial assumptions:

13 Do respondents agree with the financial assumptions that we propose to make?

Infrastructure Depreciation

We support the view that the infrastructure renewal charge (IRC) should be calculated as the average of the forecast capital expenditure on the infrastructure assets over the next 15-20 years, as set out on page 5 of volume 3.

We, therefore, do not agree with the proposal set out on page 80/81 that the IRC should equal the level of Infrastructure Renewal expenditure over each year of the regulatory control period, or the view set out on page 111 that the IRC is an average of historical renewals expenditure.

Tax

We believe the assumption about tax is incorrect. Currently we anticipate paying corporation tax in the 2006-10 period. This is caused by the high capital investment in long life and infrastructure assets resulting in lower capital allowances which are therefore insufficient to shelter the increased profits required to fund the investment programme.

Inflation

As WIC proposes to largely adopt the Ofwat approach RPI should be used rather than CPI.

Delayed Investment

We do not agree that any delayed Q&SII investment will be delivered evenly across the 2006-10 period. It should be modelled to reflect the best available information of the likely profile over time.

Chapter 13: Standard Customers

31 Is a target date of the end of December for announcing tariffs (which will come into effect on 1 April in the following year) acceptable, given that details about the tariff baskets and their weightings will be included in the Strategic Review of Charges 2006-10?

This is acceptable for us.

32 We would like to hear your views on the proposed changes to the standard customers used in the Strategic Review of Charges 2002-06. Do you feel that our proposals will make it easier to identify the customer group represented? Are there any other changes you would like to see being made?

Our suggestions to the tables are set out below:

Table 13.3

It is suggested that the description of manufacturing should be changed to include large pharmaceuticals. A large pharmaceutical is not identifiable with the example. While there may be customers who fit into this category, large pharmaceuticals tend to have a much larger water use. Scottish Water would propose that the pharmaceutical description be removed.

We appreciate the need to keep existing standard customer data unchanged for more straight forward comparisons. However, the food manufacturers, pharmaceutical and brewery customers would typically have trade effluent. Only water supplied and sewerage volume discharged is included in the table. Trade effluent customers do have domestic strength sewerage charged at published tariffs however they would not be at these volume levels. Furthermore a 95% return rate is not representative of a brewery, which would have a lower return as most water supplied goes into the product.

Table 13.5

It is difficult to ascertain a typical Rateable Value. Rateable Values will depend on the area the property is situated. It may be useful to add an area description such as "town" or "city".

Table 13.6

This table is difficult to interpret due to the lack of units. We suggest that the units are explained.

Typically in effluent such as bakeries and distilleries there can be a COD:BOD ratio of 2:1 (although depending on several factors such as pre-treatment this can change to greater than 30:1).

The term authorisation is used to cover all documents that give permission to discharge. The term agreement was used in section 13.5.3 however an agreement is a specific tool used under the Sewerage (Scotland) Act.

- 33 We would like to hear your views on the proposed additions and changes to the standard customers, as detailed previously. Do you consider that we have achieved broad representation of the customer types? Are there any other customer types that we should add to the lists?*

Table 13.3

Table 13.3 shows representation of High Street newsagents. It is unclear whether this would be in the High Street in Edinburgh or Glasgow which would probably have a large 'McColls' (for example) whereas the High Street in Rosyth or Dairsie will have a small newsagents/sweet shop. A more descriptive name is recommended.

The term 'Garages' would also benefit from a more descriptive name. It is unclear whether this is a service stations or Car Sales/Repairs. Also, Car Sales/Repairs can be Trade Effluent customers and not standard metered sewage customers as with service stations with car wash facilities.

- 34 Are there any other customer types that are not properly represented in the revised list?*

The majority of Scottish Water's customer base has been covered by the standard customers. Customers that may still require representation are Hospitals and Churches. Each of the major cities and towns has at least one hospital and these tend to have large consumptions and large Rateable Values. Again, each of the major cities and towns has at least one church, they can be either metered or unmetered with modest consumptions and Rateable Values.

Chapter 15: Connection Charging Regime

- 38 Are there any lessons from England and Wales that you want to propose for application in Scotland?*

We believe that it is not appropriate for our customers to pay the entire costs of expanding our asset base to allow new development. We therefore propose that developers should make a greater contribution. We understand that in England and Wales, developers pay a connection charge, an "infrastructure charge" as well as other contributions. We propose that the Scottish Executive reviews all these different contributions made by developers in England and Wales as a set with a view to applying a similar set of charges in Scotland.

Once we understand the decision made by the Executive with regard to the principles of connection charging, we will need to consider their impact on the calculation of prices.

Our Ref: JM/MM/CL
ORG13-A1481

Your Ref:

Katherine Russell
The Water Industry Commissioner for Scotland
Ochil House
Springkerse Business Park
Stirling
FK7 7XE

Directorate of
Environmental and
Organisational Strategy

If telephoning ask for:
Martin Marsden
29 October 2004

Dear Ms Russell

OUR WORK IN REGULATING THE SCOTTISH WATER INDUSTRY
VOLUME 1: SETTING OUT A CLEAR FRAMEWORK FOR THE STRATEGIC REVIEW OF CHARGES
2006-10
VOLUME 2: BACKGROUND TO AND FRAMEWORK FOR THE STRATEGIC REVIEW OF CHARGES
2006-10
VOLUME 3: THE CALCULATION OF PRICES
VOLUME 4: THE SCOPE FOR OPERATING COST EFFICIENCY

Thank you for providing the Scottish Environment Protection Agency (SEPA) with the opportunity to comment on the above consultation documents.

SEPA has restricted its comments to those aspects of the consultation documents, Volumes 1 to 4, where the proposed principles are of relevance to SEPA's duties.

SEPA notes that it is proposed to appoint a Reporter for the water industry, independent of Scottish Water, to audit the information submissions and investment programme and highlight any issues or inaccuracies. SEPA welcomes the proposals that will allow us to ask the Reporter to examine Scottish Water's performance in areas relevant to our statutory duties.

As part of the business plan submissions SEPA considers that the operational implications of environmental regulations, such as the control of dangerous substances to sewers and [river basin management planning](#) issues, should be included. SEPA currently has input into the multi-stakeholder Quality and Standards process to determine the environmental objectives of Scottish Water's capital investment programme. However, SEPA is pleased that the appointment of the Reporter will also enable SEPA to request the Reporter's examination of Scottish Water's strategy for such operational implications of environmental regulations that may have relevance to SEPA's duties.

SEPA welcomes proposals that [part of the Strategic Review will seek to establish that Scottish Water has a clear strategy in place for managing water resources in the long term](#) and will take into account factors such as; [efficient use of water](#), [limits on water extraction](#), and [future supply availability](#).

As an additional point, SEPA considers that an interim determination of prices limits should be triggered by any new or revised environmental requirements, confirmed as a necessary change to be enforced by SEPA. SEPA views this as necessary, given the time period over which price limits will be fixed, to ensure Scottish Water has adequate revenue to implement new environmental quality obligations.

As a public body committed to openness and transparency, SEPA feels it is appropriate that this response be placed on the public record. If you require further clarification on any aspect of this correspondence, please contact Martin Marsden, Water Unit Manager, SEPA Corporate Office, at the address shown below.

Yours faithfully



Janice Milne
Acting Environmental Development Manager

5 November 2004

Katherine Russell
Director of Corporate Affairs
Water Industry Commissioner for Scotland
Ochil House
Stirling
FK7 7XE

Dear Katherine

Strategic review of charges 2006-10, Volumes 3 and 4

This letter provides Water UK's comments on two papers issued by the Water Industry Commissioner; on the calculation of prices and the scope for efficiency.

We are pleased that you have explicitly committed yourselves to applying the BRTF better regulation principles as this greatly improves the quality of the regulatory process and the outcomes of that process.

Given the importance of the matters being considered, we were disappointed that only a five week consultation period was allowed. Cabinet Office guidance indicates that 12 weeks is the minimum period that should be used.

We have addressed some but not all of the questions that you have posed, mainly those put forward in paper 3. In the following comments we have referred you to papers available on our website, if you have any difficulty in finding these we are happy to supply hard copies.

Price setting and RCV

It seems sensible to move to a framework similar to that in England and Wales based on regulatory capital values.

Continued...

2

However the new framework of itself will not facilitate comparisons with England and Wales [question 9]. For example, if Scottish Water's RCV is based on MEA and debt is total historic debt for Scotland then financial comparisons with England and Wales still remain difficult. MEA south of the border is much greater than RCV and the debt writeoff at privatisation would have to be added back in – England and Wales companies' gearing could fall to say 20% from the 60% in Ofwat's current figuring.

This problem could be avoided and comparability improved if you adopted the “comparator” approach ie started from an initial RCV similar to comparator companies in England and Wales [question 16].

Allowed rate of return

The WIC analysis focuses on the cost of finance rather than the cost of capital. However, for consistency with economic principles, and also with HM Treasury guidance on required rates of return, the WIC should use the cost of capital – the rate at which investors would be willing to supply funds to Scottish Water given the fundamentals of the business. You quote Treasury guidance in paper 3 (page 105) but it is not clear why you have decided not to follow that guidance.

A starting point would be the cost of capital for the English and Welsh companies, assessed at around 5.5% by NERA in its latest study for Water UK. Ofwat's assessment of 5.1% is clearly too low as evidenced by the financeability adjustments applied in draft determinations to all water and sewerage companies by 2010 [question 17].

Presumably the WIC's position is based on the view that allowing more than the cost of finance would leave Scottish Water with too much cash in hand. However any surplus cash could be distributed to the owner [the government], who could then decide whether to reinvest in Scottish Water or use the funds elsewhere [this could include customer rebates]. The problem of embedded debt would also become less of an issue requiring specific adjustments by the regulator [question 19].

This approach would assist comparisons with England and Wales and also ensure that prices are set at the right level to achieve allocative efficiency. It would also ensure that Scotland is not in breach of the Water Framework Directive Article 9 requirement to apply cost recovery.

Continued...

3

You also discuss the separation of Scottish Water into wholesale and retail segments. What rate of return would be allowed for the retail segment? In principle this should be a commercial rate based on outside evidence taking into account the risk inter alia of losing the business, with the methodology discussed above only applied to the wholesale segment?

Risk

We could not see where the "cost of risk" was allowed in the new framework, especially if returns are set at effectively the interest rate on borrowings. Is it the notional return on the equity stake that is the reward for risk, and is there an equity cushion somewhere in the balance sheet as for Glas? The need to make proper allowance for risk reinforces the case for using the cost of capital rather than the cost of finance.

In framing financial indicators [questions 5 and 14] it would be important for you to take account of Scottish Water's special circumstances and how potential investors would regard this entity – Ofwat ratios do not necessarily apply. It would also be important to test how sensitive these indicators are to downside assumptions about risks, not just central assumptions – the approach that Ofwat has used in framing draft determinations for companies in England and Wales. The Liquid Risk model developed by NERA for use by Water UK members provides the tool for the job.

RPI incentive framework [question 4 of paper 4]

For England and Wales companies incentives are rather limited. Broadly speaking with opex 80% goes to the customer and 20% to the company. A minor adjustment has been made by Ofwat to incentives in this price review – the out-performance multiplier [MD187].

In the case of capital spending incentives are unbalanced with sharing of out performance for underspends but no sharing of overspends unless these are huge – above 10% of turnover. In framing incentives for Scottish Water you need to consider size and balance and you should not necessarily follow what Ofwat do.

We also understand that you are proposing to use CPI rather than RPI. We do not think that you should make this change unilaterally, any such proposed change should be consulted upon by regulators jointly for all utility sectors.

Continued...

4

In addition such a change would alter the balance of risk and reduce comparability with the companies in England and Wales.

Econometric Modelling

Water UK has commissioned two consultants to review the reliability of Ofwat's modelling work; Professor Weyman Jones and Professor Cubbin. Their reports are to be found on Water UK's website.

The key issue is how much of the residual from the modelling can be attributed to inefficiency, and how much is error of measurement, error of sampling or error of modelling. Ofwat only make a 10-20% allowance for error but Professor Cubbin took the view that the allowance should be much higher, around 50-60% for the opex models and 65-75% for the capital maintenance models.

Professor Weyman Jones concluded that the more inaccurate the model, the more likely it would generate high residuals and thus higher [but inappropriate] efficiency targets. Furthermore separate treatment of opex and capex in modeling can generate infeasible targets, because of potential substitution between opex and capex.

It is important therefore that you should not apply Ofwat modelling work uncritically in framing an efficiency target for Scottish Water, and you should make explicit and transparent adjustments for error. Other modeling approaches should also be examined as a further test of reliability.

There is also an issue of achievability, and over what time period. The paper refers to a previous analysis of what England and Wales companies achieved in terms of catchup over their "best five year period". It would be more sensible to base your judgment on the full evidence on catchup since 1989, rather than a biased fragment of the evidence – which can only overstate the likely achievability.

Interim determinations and logging up and down

We agree that a process to adjust prices within a regulatory control period should be introduced [question 21], and that you should consider both interim determinations and logging up and down [question 22]. That said, you should not follow the Ofwat approaches slavishly.

Continued...

5

We have had extensive discussions with Ofwat on improving the mechanisms but they still remain flawed, and will need to be revisited after the current price review is complete [see MD194]. The letter attached sets out some of our concerns – in particular we propose a more comprehensive, transparent and predictable procedure for logging up and down.

The list of relevant changes of circumstance and notified items should be considered carefully and should be clarified in advance with Scottish Water. Ofwat has developed such a list and shared it with Water UK, it is a long list given the range of uncertainties affecting the industry at present.

It is not clear whether you will also be preparing a change protocol to deal with changes in quality obligations. If so, this document and the underlying process should be transparent and consulted on in advance, and agreed with the quality regulators.

Public Private Partnerships –

Applying efficiency targets to PPP schemes appears to be in breach of the BRTF principles to which you are committed - consistency [and predictability] - whatever the legalities around these long term contracts. We are surprised that you are seeking to persuade Scottish Water to review these contracts. The effect can only be to discourage potential suppliers and to raise the future cost of capital by adding to the regulatory risk around these contracts. It also appears that you are adding a “hidden” extra element to Scottish Water’s own efficiency target if in practice Scottish Water cannot renegotiate these contracts.

Yours sincerely



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Finance Department

Director of Finance
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Dear Ms Russell

**CALCULATION OF PRICES FOR THE STRATEGIC REVIEW OF CHARGES
2006 – 2010**

I refer to your consultation document in respect of the above and enclose for your attention my responses to the questions for consultation raised in the Executive summary.

Yours sincerely

B Cook
Head of Revenue Services

Enc

14 OCT 2004



INVESTOR IN PEOPLE

THE CALCULATION OF PRICES FOR THE STRATEGIC REVIEW OF CHARGES **2006 - 2010**

CONSULTATION QUESTIONS & RESPONSES

1. Is the proposed approach to depreciation for the Strategic Review of Charges 2006-10 appropriate?
In particular:

R It is generally accepted that there has been insufficient capital investment in the infrastructure within Scotland for a considerable number of years. This under-investment has begun to be addressed in recent years but may mean that investment levels and patterns in Scotland do not conform to the industry average. The concern of using the infrastructure renewal charge approach would be that the useful life of expenditure incurred each year may exceed the 15-20 years suggested due to the type of investment needed to correct the extent of under-investment over recent years. As such current chargepayers could be paying a higher contribution each year over the next 15-20 years rather than future chargepayers. With the current high level of charges for water customers I would suggest then the useful life of the investment is ascertained and an appropriate period for writing down is determined. In addition the opportunity for the Scottish Executive to contribute additional funds to finance the necessary investment should be promoted and so remove the charge burden on the consumer.

2. Is the proposed method of determining asset life, through a five-stage classification from 'very short' to 'long', adequate?

R Agree the approach is appropriate.

3. Is straight line depreciation the most appropriate mechanism for assessing the annual reduction in value of Scottish Water's assets?

R Without more detailed information on the degradation of the assets and the need for improvement/replacement investment it is difficult to comment on whether straight-line depreciation is the most appropriate method. The approach should be to mirror the depreciation method to the use of asset or reduction in asset life.

4. Does the proposed use of MEA valuation provide a suitable method for estimating the economic value of Scottish Water's assets or would other methods give a better estimation?

R Agree the approach is appropriate.

R Agree

6. Do respondents agree that access to borrowing should require Scottish Water to conform to the same disciplines and control that apply in the private sector?

R Agree.

7. Do respondents agree that customers should not pay for a failure to meet agreed targets?

R Agree.

8. Are there other factors that we should take into account in minimising the risks to customers both now and in the future?

R No comment.

9. Do customers agree that the regulatory capital method of price setting will help to facilitate comparisons between the water industry in Scotland and south of the border? If not, what are the alternative methods they would suggest?

R Agreed.

10. Do customers agree that it would be better to set a series of price caps rather than the current system of setting a single revenue cap?

R Agreed.

11. Are there other actions we should consider to improve the transparency of the price setting process?

R No comment.

12. Do respondents agree with our proposal to require Scottish Water to submit regulatory accounts?

R Agreed.

13. Do respondents agree with the financial assumptions that we propose to make?

R Agreed.

14. Do respondents agree with our proposal to use the Ofwat ratios as the primary indicator of financial sustainability? If not, which ratios should we use?

R Agreed.

15. Do stakeholders agree that there are broadly three ways to establish an initial RCV for Scottish Water?

R Agreed.

16. Which method would stakeholders see as the most reliable, and why?

R Preference would be for the Comparator approach utilising the experience of similar organisations in England and Wales to provide a benchmark for Scottish Water. The approach would be to use a single company as a benchmark for the RCV or prepare a model RCV from a number of companies. The comparator approach would benefit by allowing the exercise to be founded on an actual business comparator rather than a solely theoretical/book value approach.

17. Do respondents agree that it would not be appropriate to adopt the rate of return allowed for the private sector water industry south of the border by Ofwat?

R Agreed.

18. Do respondents agree that the hybrid approach described above should be used to set the allowed rate of return for Scottish Water? If not, what other method would respondents suggest? In particular how could the suggested method facilitate monitoring and avoid any incentive for any stakeholder to seek to change the ratio of debt to RCV?

R Agree to using the hybrid approach.

19. Do respondents agree that we should make an allowance for embedded debt for this regulatory control period, but only make such allowances in the future if there has been a material change in the rate of inflation?

R Agree the treatment of embedded debt.

20. We would welcome the views of stakeholders on the content of this Chapter. There are no specific consultation questions.
- R The RCV needs to be monitored and revised through the period of charges. The recognition of an assets usage through an adjustment for depreciation is appropriate and as per Q3 if the depreciation method is correct then its usage in RCV is acceptable. In terms of capital expenditure/additions to the capital assets there is an imperative to prevent Scottish Water unnecessarily increasing revenue income needed by misuse/abuse of capital investment. Either directly through the means of calculating RCV or by adjustment any mistake/waste of capital investment should not be rewarded by increases in revenue income. Scottish Water needs to be incentivised to be efficient and effective in its investment programme.*
21. Do stakeholders believe that there should be a process to adjust prices during a regulatory control period? If so, should we seek to introduce a process for interim determinations?
- R Would not accept that the prices should be adjusted during the period. The operation of price controls within the period provides an incentive for Scottish Water to properly forecast and manage its expenditure within limits. The opportunity to compensate for any adverse condition would remove the need for Scottish Water to identify corrective actions.*
22. Do stakeholders believe that it is appropriate to adjust prices in the next regulatory control period to reflect actual outcomes in the previous period? If so, should we seek to introduce a similar process to Ofwat's logging up and down?
- R Agree to introduce a similar process for logging up and down.*
23. What factors should trigger an interim determination? At what level of materiality should an interim determination be triggered?
- R No comment as per 21.*
24. Are there other relevant changes in circumstance that we should consider introducing?
- R No.*

25. What is the most effective method for consulting with customers about a potential price change?

R Whilst open consultation offers the opportunity for involvement of all consumers the level of responses tend to suggest that the average consumer is uninterested or unknowledgeable of the subject to be able to contribute. The Water Industry Commissioner, Scottish Executive, and Scottish Water need to accept a responsibility for the direction and management of the sector and seek appropriate involvement from consumer bodies, and similar organisations to inform the decision making process.

26. Would customers prefer the regulator to revised prices downwards during a regulatory period (eg in the event of slow delivery of outputs) even if prices are likely to increase by a greater percentage in the future as a consequence?

R Similar to 21, the setting and determination of prices during the period should remain static. Scottish Water are then obligated to work within the regime, and price setting for each new period would accommodate any revisions necessary.

27. Do you agree that the proposed approach for the tariff basket items is appropriate for Scotland?

R Agreed.

28. Do you agree that we should introduce more tariff baskets than Ofwat?

R Agreed.

29. Do you agree that we should establish tariff baskets for metered water and wastewater customers with a standard connection?

R Agreed.

30. Do you agree that the proposed method for calculating the weighted average price increase is the most appropriate method to use? If not, which alternative method would be more appropriate and why?

R Agreed, subject to the proviso that significant change in tariffs at the basket level may need some form of dampening during the charging period.

31. Is a target date of the end of December for announcing tariffs (which will come into effect on 1 April in the following year) acceptable, given that details about tariff baskets and their weightings will be included in the Strategic Review of Charges 2006-10?

R Agreed.

32. We would like to hear your views on the proposed changes to the standard customers used in the Strategic Review of Charges 2002-06. Do you feel that our proposals will make it easier to identify the customer group represented? Are there any other changes you would like to see being made?

R Agreed.

33. We would like to hear your views on the proposed additions and changes to the standard customers, as detailed previously. Do you consider that we have achieved broad representation of the customer types? Are there any other customer types that we should add to the lists?

R Agree that there is a reasonable representation of the users of water and/or sewerage.

34. Are there any other customer types that are not properly represented in the revised list?

R No comment.

35. Do respondents consider that the criteria that we propose to use in assessing different approaches to setting wholesale prices (ie, that the approach should be theoretically sound, practical, consistent with Scottish Executive policy and flexible) are appropriate?

R Agreed.

36. What are respondents' views on the ECPR, LRMC, accounting cost and comparator approaches to the setting of wholesale prices?

R In setting wholesale prices it is necessary to attract involvement/competition from alternative retailers. The "accounting approach" appears to provide a measured/definitive basis for determining a price which will achieve this, whilst providing a reasonable income/compensation to Scottish Water.

37. Do respondents agree that the split between wholesale and retail activities should be a notified item?

R Agreed.

38. Are there any lessons from England and Wales that you want to propose for application in Scotland?

R The pricing policy needs to accommodate/promote developments across the community for both business and residential customers. At present the approach by Scottish Water is seen as a barrier/constraint and the wider needs of the community are suffering as a result.

**Delayed Office Opening for
Employee Training**

*This Office will be closed from 8.45 am –
11.00 am on the 1st Thursday of each
month*



Planning &
Transportation

FAO Katherine Russell
Water Industry Commissioner for Scotland
Ochil House
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04 OCT 2004

Forward Planning
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Our ref T121/3

Your ref

Date 29th September 2004

Dear Madam:

Our work in regulating the Scottish Water Industry: The calculation of prices for the Strategic review of charging 2006-2010

I have read the above consultation document with interest, and whilst I do not intend to comment on the rather technical financial assessments, I draw to your attention the recent comments and responses made by Perth and Kinross Council on 'Investing in Water Services 2006-2014 (the quality and Standards III Project)', and 'Paying for Water Services 2006-2010', copy of which I enclose, which I believe are of direct relevance in respect of your charging proposals.

I would also comment on the so called "efficiency savings" which it is claimed have been made. In reality staffing levels in Scottish Water have been reduced to such an extent that they are now failing to provide even the minimum standards of service which Local Authorities and Developers require. I consider this is not efficiency, but a false economy; i.e. short term cost cutting, which will ultimately result in increased costs for both Scottish Water, and the Scottish public.

Yours sincerely,

Peter Marshall
Development Plans Manager



Jim Irons
Executive Director

PERTH AND KINROSS COUNCIL

CONSULTATION RESPONSE ON INVESTING IN WATER SERVICES 2006-2014 AND PAYING FOR WATER SERVICES 2006-2010

WATER AND DRAINAGE ISSUES IN PERTH AND KINROSS

Over 40% of settlements in Perth and Kinross remain constrained, with others near to becoming constrained, due to insufficient water and drainage infrastructure. In total, 25 out of Perth & Kinross' 61 settlements are constrained which, in population terms, represents 23% of the urban population and 19% of the total population (see Appendix I). The settlements range from Kenmore with a population of 62 to Scone with a population of 4,430. Without major investment during the next few years it is likely that a number of other major settlements will face a drainage embargo in the next few years, including Alyth, Kinross and Milnathort.

Housing Impact

Whilst Perth and Kinross has an adequate five-year effective housing land supply, drainage constraints are affecting the sustainability of local services and house buyers' choice. Sites for 1,292 open market houses are currently identified in the 2003 Housing Land Audit as non-effective in the constrained settlements.

More importantly, the provision of much needed affordable housing is being hindered. The Perth and Kinross Local Housing Strategy, which was approved by Communities Scotland in July 2004, identifies a need to provide 1,370 affordable houses in Perth and Kinross in the period to 2008. A significant number of these houses are needed in the constrained settlements, with the need being compounded even further by the rise in house prices in the settlements resulting from the embargo on new house building. Sites for 256 affordable houses are currently identified in the 2003 Housing Land Audit as non-effective due to drainage constraint.

Economic Impact

Drainage constraints are preventing small scale development beneficial to the economic and social welfare of settlements. A total of 11 sites are identified in existing Local Plans for employment uses in the constrained settlements, extending to some 30.7 Ha in total.

Quality and Standards II

Scottish Water Solutions has identified 24 projects in Perth and Kinross, but only three of these (Auchterarder, Perth City and Scone) have been identified

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as having a 'growth driver', whereby additional capacity is created. The majority of the projects will be aimed at meeting the aforementioned statutory deadlines for raising drinking water quality standards and improved sewage treatment.

The current policies and investment programme of Scottish Water is inhibiting the development of a sustainable settlement strategy and, more critically, the delivery of affordable housing in locations where it is required. Whilst the implementation of Quality and Standards II is welcomed, it is clear that additional investment is required to relieve constraints and allow for growth.

INVESTING IN WATER SERVICES 2006 - 2014 THE QUALITY & STANDARDS III PROJECT (Q&SIII)

The consultation document sets the scene for the next round of investment by highlighting the £1.8 billion that is being invested in water and wastewater infrastructure (equivalent to £192 per household), through Q&SII. The Executive claim that this has led to significant improvements to drinking water and environmental protection.

Comment – This is perhaps an over ambitious claim since the majority of the proposed improvements have yet to be completed. It also fails to recognise that as the emphasis in Q&SII is on improvements to drinking water and environmental protection, the position on releasing drainage constraints has not significantly improved and indeed may have worsened in some areas. Clearly the current level of investment has not been sufficient to address many of the priorities of the Council and one suspects the situation is similar throughout Scotland.

The Key Aims of Quality & Standards III Project (Q&SIII)

Comment – The ability of the civil engineering sector must be taken in to account with regard to deliverability. Clearly the lack of any long term investment strategy from Scottish Water must have provided problems for the civil engineering sector. It is likely, however, that were the Executive to develop a long term programme which involved a significant increase in work for this sector, then the sector would respond accordingly by increasing its capacity.

The key aims of Q&SII are to produce a cost effective, deliverable, affordable and sustainable investment programme. **Consultation point 1 asks if these are the right criteria.**

Response

Generally the aims of Q&SIII are supported, but it is important to question whether they go far enough. The current focus of the aims is on affordability and environmental issues, however, this does not seek to address the basic question of the level of service and provision needed in Scotland to meet the aspiration of the Scottish Executive, developers and the public at large. Taking housing as an example, good housing and adequate numbers of houses are an essential prerequisite to achieving a number of the Executive's

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priorities including, health, stemming population loss, community safety and social justice. Reference should also be made to the economic development aspirations of the Executive and how these can be met.

Secondly, the basic premise behind which public provision of water services is based is that communal or public provision is better, in the majority of circumstances, for not just the environment, but primarily as a way of ensuring public health. Perhaps one of the aims of the Q&SIII project should be to increase the real number of persons or the proportion of properties served by public water services.

- **Working Groups -**

Consultation point 2 seeks views on whether the identified criteria are appropriate.

Response - The planning assumptions need to be questioned as both Scottish Water and the Executive have requested and been provided with information from Perth & Kinross Council regarding development potential to 2014, i.e. the period of Q&SIII. In the Council's response to this consultation concerns were raised over the period the information was requested for. In order to plan for infrastructure investment which will have a life expectancy of 30 or more years, the provider must have a clear view of the likely demands on that investment throughout the entire life of the facility. Looking at how the Executive would deal with a new trunk road design it is interesting to note that they look at traffic projections 15 years ahead for the construction of a road which has a life expectancy of up to 10 years before major works are likely to be required. It is therefore recommended that the working groups be asked to take a longer term look at the requirement for new infrastructure.

MAINTAINING SERVICE STANDARDS (CAPITAL MAINTENANCE)

Consultation point 3 asks if you agree that maintaining serviceability levels (as defined) should be an essential objective for Quality and Standards III?

Response - This is clearly the principal priority. If current infrastructure can't be maintained and improved we are moving backwards and leaving future generations with a legacy of neglect which will be even harder to overcome than the current problems facing Scottish Water. Accordingly, priority should be afforded to maintain the existing level of service (£2.2 billion) and, on the premises that the existing level of service is not adequate, additional money should be allocated to this area. It is difficult to comment on whether the amount of additional expenditure should be as high as suggested (£500 million) as there is little information to quantify what benefits, in financial, service delivery and environmental terms, will accrue from this level of investment.

Consultation point 4 asks what are the most important of the 8 identified serviceability standards?

Response – All of the identified standards are of importance for environmental or health reasons with perhaps the exception of 4 (properties on the low pressure register). Accordingly it is suggested that only 4 is afforded a lower priority, however, it would still be expected that Q&SIII would address this issue at least in part.

Consultation point 5 asks if you wish to see a higher level of serviceability, do you wish this benefit secured from a) higher charges or b) lower spend on other areas of capital investment? This matter is considered in the context of Paying for Water Services.

EXTENDING PUBLIC WATER & SEWERAGE NETWORKS

Comment – Whilst the current investment programme may on the surface appear to be significant, when viewed in the context of the historical under-investment in water services and the increasing demands of environmental regulation, the amounts being invested are woefully inadequate. It is also of concern that with less than two years left of this investment programme there is little evidence of a willingness from Scottish Water to discuss first time sewerage in rural areas certainly within Perth and Kinross, even where developer contributions are on offer.

It is likely that Scottish Water's estimates of the required number of houses and the investment needed to service them is a gross underestimate. Typically over the past decade the Scottish Executive estimates of housing demand have underplayed the actual demand or construction rate, and in recent years the number on new houses per year has consistently been around 24,000. Were this rate of development to continue, 192,000 houses would be required. It is, however, recognised that the true figure probably lies somewhere between these two estimates. The Scottish Executive planning guidelines require the maintenance of a five year effective housing land supply, i.e. land free of constraint. The estimates upon which Q&SIII are based should therefore be looking at being able to service a five year effective housing land supply at 2014, therefore, the projected housing demand to 2019 should be the basis upon which the costs associated with the release of development constraints is derived. This would result in an increase in the total number of houses required to between 195,000 and 312,000. It is imperative that housing demand is met and it is recommended that the estimates of both demand and costs are revisited. Furthermore, consideration requires to be given to the financial and social costs of not meeting demand in order that a true picture of the real costs can be considered by the Scottish Ministers.

The National Planning Framework for Scotland concentrates on major strategic issues for Scotland with a heavy bias towards the central belt. It is recognised that the bulk of the Scottish population is concentrated within this area; however, it is essential that the severe water services constraints in the rest of Scotland receive an adequate and equitable share of the investment.

Consultation point 6 - We hope to be able to include provision within the forthcoming investment programme to fund the deeper elements of connection. Should this element be paid for by a) higher charges b) lower investment in other areas?

Response - Provision should be made in the investment programme to fund both the above ground and deeper elements. The question of "who pays" is discussed in the context of Paying for Water Services below.

Strategic modelling

Consultation point 7 - Where there is a requirement made by local authorities for detailed modelling work to inform the viability of strategic sites in structure and local plan processes, who do you think should fund this work?

Response – Since the formation of Scottish Water Planning Authorities and Developers have been experiencing extreme difficulties verging on non co-operation from Scottish Water in the field of consultations on new development proposals, particularly in areas where constraints exist. Perhaps one of the main reasons for this has been the drive to slim down the operation for "efficiency" reasons. It is evident that considerable expertise has been lost in this restructuring to the extent that Scottish Water can no longer maintain even the minimum levels of public service demanded by their customers. Generally the concept of Water Services being a public service appears to have been lost, nor has Scottish Water embraced a private sector mentality where increasing a customer base would be a priority. Whichever route Scottish Water is to go down, public service or private sector, it requires to develop an in-house capability to respond to consultations promptly, whether that be simple requests for information or more complex strategic modelling. The facility should be funded by Scottish Water's budget as a key element in the delivery of a service to the Scottish public and a means of increasing their customer base. Only in the case of large developer promoted development schemes, which are contrary to the Development Plan, should contributions be sought from developers or local authorities.

INVESTING IN THE ENVIRONMENT

Consultation point 10 - What should the top environmental priorities be?

Response – All of the environmental priorities are of importance and Q&SIII should seek to make headway in all fields. A balance, however, has to be struck between the environmental aims of the European Union and the Executive and the needs of the Scottish population, and this may result in the need to accept that whilst a continued improvement in environmental indicators is a legitimate aim, it may not be possible to address all standards within the Q&SIII programme.

Consultation point 11 - Should the inclusion of these priorities be paid for by a) higher charges, or b) lower investment in other areas? This matter is discussed in the context of Paying for Water Services below.

DRINKING WATER QUALITY & WATER RESOURCES

Consultation point 12 - What should the top drinking water quality and water resource priorities be?

Response – Investment in improving water quality should seek to go beyond the minimum requirement, however, in other areas the statutory minimum should be adopted.

Consultation point 13 - Should the inclusion of these priorities be paid for by a) higher charges or b) lower investment in other areas? This matter is discussed in the context of Paying for Water Services below.

OTHER PRIORITIES FOR THE CUSTOMER

Consultation Point 14 - Do you think that the forthcoming investment programme should include provision for odour control at wastewater treatment works?

Response – Although generally this is a localised problem it does cause considerable nuisance to those affected, it is therefore recommended that Q&SIII should aim to make genuine inroads into resolving the worst problems as part of an overall strategy to eliminate this issue during the Q&SIV investment period.

Consultation Point 15 - If so, should the inclusion of such an element be paid for by a) higher charges or b) lower investment in other areas? This matter is discussed in the context of Paying for Water Services below.

Consultation point 16 - Do you think that the forthcoming investment programme should include provision to improve water pressure for those properties suffering from low water pressure?

Response – As with odour control this is a localised problem that does cause considerable nuisance to those affected. It is therefore recommended that Q&SIII should aim to make genuine inroads into resolving the worst problems as part of an overall strategy to eliminate this issue during the Q&SIV investment period.

Consultation point 17 - If so, should the inclusion of such an element be paid for by a) higher charges or b) lower investment in other areas? This matter is discussed in the context of Paying for Water Services below.

Consultation Point 18 - Do you think that the forthcoming investment programme should include provision to address sewer flooding in addition to that contained under capital maintenance?

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Response – *it is recommended that Q&SIII should aim to make genuine inroads into resolving the worst problems as part of an overall strategy to eliminate this issue during the Q&SIV investment period.*

Consultation Point 19 - If so, should the inclusion of such an element be paid for by a) higher charges or b) lower investment in other areas? This matter is discussed in the context of Paying for Water Services below.

GENERAL CONCERN

Comment – Contrary to what had been implied in previous discussions with Scottish Water and the Council's recent meeting with Ross Finnie, this consultation does not provide an opportunity to look at a detailed investment programme, but only to discuss the level of investment. Planning Authorities and developers have, since the inception of Scottish Water, been working in a vacuum, unable to conduct fully meaningful forward planning without a long term investment programme for water services. It is clear from this consultation that decisions on the level of funding are not going to be made until 2005 and Planning Authorities and developers are unlikely to know any detail of the programme before the start of Q&SIII. From Perth and Kinross Council's point of view it is likely that the next round of Local Plans will have to be prepared based on assumptions on Scottish Water's investment programme rather than with any certainty. This position is totally unacceptable and the Scottish Ministers are urged to accelerate the investment decisions, to produce as a minimum a phased programme of detailed proposals for the period 2006 – 2010.

PAYING FOR WATER SERVICES 2006-2010

PROPOSED PRINCIPLES OF CHARGING

The Executive proposes that its principles in respect of charging should be based on customers as a whole continuing to meet all the costs that Scottish Water incurs in providing public water and sewerage services, the Executive considers that the cost of extensive metering could not be justified at a time when customers generally will be asked to meet the substantial costs of future quality improvements.

Comment – Whilst it is agreed that it may not be economic to consider the conversion of all existing properties, consideration should be given to the prospect of requiring developers to provide meters for all new developments.

Summary of Principles of Charging

Consultation point 1: You are invited to comment on the principles outlined above that the Executive proposes should underpin charge limits and charges schemes in the period 2006-10. In particular do (sic) you are asked to indicate whether you agree that:

1. Charges should be set to recover the full costs incurred by Scottish Water in providing public water and sewerage services.
2. Charges for households should be set with a view to ensuring that they are as affordable as possible for low-income households.
3. All charges should be set on a harmonised basis, so that customers in the same group and using the same services should pay for these services at the same rate, irrespective of where they are in the country
4. Subject to making charges affordable for low-income households, harmonised charges to a particular group should be set to recover as closely as possible the fixed and variable costs of serving that group.
5. All significant changes in charge levels arising out of the application of these principles should be introduced gradually during the period 2006-10, and beyond in the most significant of cases.

Consultation point 2: If you do not agree that the principles outlined above provide an appropriate basis for setting charges, which principles would be appropriate and why?

Response– *Whilst there is merit in the principles put forward in 2,3 and 5 it is suggested later in this paper that additional funding from general taxation is required to address some of the historic under investment.*

APPLICATION OF PRINCIPLES

Cross subsidies - Given their role in making charges for vulnerable groups affordable, the Executive is not looking to withdraw all cross subsidies as a matter of principle.

Consultation point 3: If it is established that there are significant cross subsidies between customer groups, should these be retained, or withdrawn gradually over time?

Response– *Over time it would be more equitable to reflect the true costs to customers therefore withdrawing cross subsidy gradually over time is preferred.*

Household charging -

Consultation point 4: Should a new system of better targeted discounts for low-income households be funded from the savings that would be generated by abolishing the discounts currently granted to single adult households and in respect of second homes, or should the current system of discounts be retained?

Response – *The Council supports the principle of better targeted discounts*

Surface and highway drainage

Consultation point 5: Should the current arrangements for charging non-household customers for surface and highway drainage be retained, or should preparations be made to establish by 2010 banded charges in respect of these charges?

Response— Preparation should be made to introduce banded charges by 2010 as this would be more equitable to all involved. Consideration should also be given in the longer term to a mechanism to encouraging property owners to develop SUDS schemes to remove surface water drainage thus reducing the impact on the system

Non-metered supplies -

Consultation point 6: Should un-metered non-household premises continue to pay by reference to rateable value, or should they become metered, or should preparations be made to enable these premises to be charged by reference to a system of bandings to reflect broad consumption levels?

Response – In order to encourage water conservation, encouragement should be given to all commercial premises becoming metered, however, given the costs involved the banding proposals would also be considered acceptable.

Trade effluent charges -

Response— Consideration should be given to ensuring that the charging regime does not place Scottish companies at a disadvantage over rivals in other parts of the UK.

The balance between charging and borrowing

Consultation Point 7: Do you agree that the Executive has identified the main factors that should have a bearing on the amount of borrowing provision made available to Scottish Water? If not, which other relevant factors should be taken into account?

Do you agree with the Executive's analysis that to fund all enhancements from borrowing is unsustainable, but that to fund none would not strike the right balance between today's charge payers and tomorrows? If so, do you consider that allowing Scottish Water's debt to remain broadly constant in real terms would strike the right balance? If not, which level would strike the right balance and what implications would that balance have for wider public expenditure considerations?

Response— Striking a balance is important however that balance should also include money from general taxation as recommended below.

Funding expansion of the public networks -

Consultation point 8: Do you agree that developers should be expected to meet the cost of providing increased local capacity where this is necessary to take forward their proposed developments? If not, should all customer groups meet the cost of removing development constraints equally, or should particular customer groups be required to bear the cost? If the latter, which customer groups should bear the costs and why?

Response - Clearly there is a desire to make developers pay a greater contribution to infrastructure costs, however, I have two concerns over this.

Firstly this means that in one settlement the contribution may be prohibitive and result in no development, and in another no contribution would be required for house building. In addition, seldom is there one development which may benefit from an upgrade; often, although an individual developer is willing to fund an upgrade, there are other developments which can come along on the back of the initial investment.

It is therefore proposed that it would be more equitable if, nationally, all new house connections, irrespective of location and costs had to pay a set fee to connect. This money could therefore be reinvested in serving other communities. £2000 / house would generate between £45M & £50M per year, and up to £400M during the life of the plan (£800,000 / year or £6.4M to 2014 in Perth & Kinross). This is not the answer to all the problems but would help. In the longer term, this is unlikely to affect house prices as it will come off the land costs and a more plentiful supply of houses would take the edge off house prices, providing benefits to the customers.

Secondly it is more difficult to determine connection fee for businesses; one house is much like another in drainage terms but this is not the case for businesses. In addition, many business proposals, particularly in rural areas, are low value, starter business of a marginal nature, and the additional burden of a connection fee may put at risk the a development with wider social and economic benefits to an area. It is therefore proposed that no fee is charged for businesses connections.

THE GENERAL PRINCIPALS OF PAYING FOR Q&SIII

“Consultation point - Should the inclusion of these priorities be paid for by a) higher charges or b) lower investment in other areas?”

Response— It is not appropriate to answer such question in isolation of an overall consideration of the funding of Scottish Water's Q&SIII programme. Firstly, all of the areas of investment are important to Scotland as a whole and, with a few exceptions, all require significant investment. By the Scottish Executive's own estimates, the do minimum requirement is in the region of £7.8 billion, with the cost of achieving higher standards estimated in the region of £9.2 billion. As has been indicated above, there is concern,

particularly in the area of new housing demand that these estimates are on the low side.

There is a general perception amongst local authorities and developers that the current level of investment in Q&SII is inadequate and, indeed, many may say that the standard of service in some areas is declining. The same level of expenditure as Q&SII projected forward to Q&SIII would amount to £3.6 billion, which is far short of even the minimum requirements identified in the consultation document.

To adopt the “do minimum” approach would clearly fail to meet Scotland’s needs, and result in many of the Scottish Executives aims in respect of population, housing, health and economic development being unable to be met. This option is therefore unacceptable.

In a similar vane, any expectation that all of Scotland’s water services problems can be addressed within the time frame of Q&SIII may be unrealistic. The closer the investment programme can come to delivery, however, the greater the chance of achieving the other aims referred to above.

The consultation document correctly identifies the prime reasons behind the current crisis in water and drainage infrastructure as the chronic under investment in the industry over the past few decades. The document also recognises that to place the entire burden of the required investment on customers may be unacceptable or unaffordable.

The following guiding principals for determining the level and source of investment are put forward for consideration:

- 1. The public should not be required to pay for the chronic level of under investment in past decades*
- 2. Charging for current customers should be based on an economic assessment of the costs of providing the required level of service, presuming that Scottish Water had inherited a system in a reasonable state of repair*
- 3. Developers of housing should pay a standard fee to connect new houses to the public system*
- 4. The balance of the required investment should be funded through general taxation.*

APPENDIX I**Settlements in Perth and Kinross with a Drainage Constraint**

<u>Settlement</u>	<u>Population</u>
Eastern	
Alyth	2,301
Meigle	440
Kirkmichael	190
Highland	
Aberfeldy	1,895
Ballinluig	243
Birnam & Dunkeld	1,159
Kenmore	62
Kinloch Rannoch	256
Murthly	395
Pitlochry	2,564
Perth	
Balbeggie	498
Bankfoot	1,136
Burrelton & Woodside	621
Glenfarg	616
Guildtown	298
Methven	1,162
Scone	4,430
Stanley	1,544
Wolfhill	316
Strathearn	
Aberuthven	225
Auchterarder	3,945
Blackford	556
Kinross	
Blairingone	117
Crook of Devon	699
Powmill	249
TOTAL	<u>25,917</u>

Source: Scottish Water, and Univariate and CAS Census statistics 2001 GRO(S).

8 October 2004

Ms K Russell
Water Industry Commissioner for
Scotland
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Contact

Your Ref

Our Ref Leacmg00503

Dear Ms Russell

CONSULTATION ON THE CALCULATION OF PRICES IN THE SCOTTISH WATER INDUSTRY

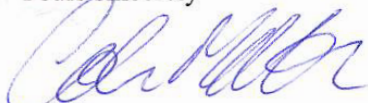
Severn Trent Water Ltd is very pleased to have the opportunity to comment on Section 3 of the document "Our work in regulating the Scottish water industry: The calculation of prices".

These comments are focussed on aspects relating to Competition (Chapter 14) and in particular the method of setting wholesale prices. We may be able to respond on other aspects of the consultation.

Our principal concern is that, in contrast to the "retail minus" competitive framework proposed for England and Wales, other methods, and in particular the use of Average Accounting Costs (AAC) to calculate wholesale charges could encourage inefficient market entry, cherry-picking and tariff de-averaging, which would not be in the best interests of customers.

I am pleased to attach further details for your information.

Yours sincerely



Colin Matthews
Managing Director

13 OCT 2004

Attachment

A member of the Severn Trent Group



Registered in England & Wales Registration No. 2366686
Registered Office 2297 Coventry Road Birmingham B26 3PU

Concerns with the use of AAC

Without careful consideration of the allocation of costs between the wholesale and retail businesses, there is a danger that certain activities could be inappropriately allocated to the retail business, when, in practice they were essential to the wholesaler. One example of this would be the customer communication channels that are used in emergency situations.

Cost mis-allocations are likely to result in an unduly low wholesale price, and a correspondingly high retail component of the total bill (remembering that domestic customers are unable to benefit from competition). The need for overall cost recovery in the medium term means that the lower the revenue from third party retailers, the higher domestic charges will ultimately be.

Furthermore, an unduly low wholesale price is likely to cause:

- inefficient duplication of resources by competitors (who can presumably only access facilities allocated to the wholesale business, and not those allocated to the retail business); and
- inefficient market signals encouraging the entry of competitors who are less efficient than the integrated company, that are artificially sustained by the unduly low wholesale price.

In combination, these consequences incentivise cherry-picking, to the long term detriment of the whole Scottish Water customer base.

The Benefits of ECPR

STW advocates the use of the ECPR methodology described on pages 148-151 of the document as an alternative for consideration. We concur fully with your statement that with ECPR the entrant will only enter the market if his costs are lower than those of the incumbent, and that this results in an improvement in productive efficiency.

We do not support your assertion that one reason for not preferring ECPR is that it provides no incentive on the incumbent to improve efficiency of the network. This is because ECPR is not the only mechanism providing efficiency incentives, and the overall context is that Scottish Water is subject to price cap regulation for all its wholesale and retail activities, providing strong incentives to reduce costs and improve efficiency.

We note that the NAO states in its Pipes and Wires Report from April 2002, that price cap regulation "... provides strong incentives to improve efficiency for the ultimate benefit of customers..." and that "...these incentives for efficiency have been associated with substantial improvements in efficiency of the network companies...". Your Chapter 5 also affirms the efficiency

incentives of price cap regulation. Furthermore, by reflecting actual costs, ECPR is more effective at promoting efficiency in the competitive market.

Protecting ineligible customers

Because of these concerns, the Water Act 2003 contains specific provisions to ensure that competition in England and Wales will not lead to higher prices or lower service standards for those customers who cannot (or do not) switch supplier, by setting out a “Costs Principle” to define, amongst other things, wholesale prices.

Under the Costs Principle, incumbent water companies will set wholesale prices by taking the prevailing retail price, less any costs avoided, plus any additional expenses. This is a form of ECPR, sometimes referred to as the “retail minus” approach.

This Costs Principle protects our remaining customers from the consequences of us losing customers to a competitor. Similarly, the Costs Principle will ensure that licensees are unable to exploit any geographic cross-subsidies by supplying only those customers who are least costly to supply, meaning that we do not have to de-average our tariffs geographically in order to compete with licensees.

The Balance of Costs between Retail and Wholesale Activities

We concur with your statement on page 152 that the balance of costs between retail and wholesale activities in energy cannot simply be read across to the water industry. Clearly industry specific data must be used to obtain even broadly indicative figures. A further point is that our experience shows that retail costs do not vary directly in proportion to the volume of water supplied. Typically, doubling the volume supplied would only cause a minor increase in retail costs. As non-domestic customers typically consume more water than average, the retail component of the total bill for eligible customers will be lower than that for an average customer, perhaps even less than 1% for the largest customers.

Responses to Volume 4

“Our work in regulating the Scottish water industry”

Volume 4: The scope for operating cost efficiency

Responses by David Simpson to Questions for Consultation

Chapter 3: Types of regulatory framework

1. Without the anchor of at least one market-based price, which in England and Wales is provided by the capital markets, we are necessarily groping in the dark. In Scotland, the preferred option should therefore be franchise regulation. Since that is not on offer for 2006-10, then RPI-X is clearly the best of the rest.

Chapter 4: RPI – X incentive framework and benefit sharing

2./3. The requirement for a cap seems to arise because, as is stated on page 42, the method of calculation of the cash return on the RCV could provide an incentive for a regulated organization to invest inefficiently. I don't quite understand why this should be so, so I can't really answer the question. Instinctively, however, I feel that adding a further restriction to limit the damage of an anomaly created by an earlier restriction suggests this may not be the best way of proceeding.

4. The general principle of rewarding outperformance against regulatory targets is a good one. In England & Wales the benefits of any such outperformance are at least in part enjoyed by shareholders, thus giving a powerful indirect incentive for senior management to perform. In Scotland, it is not clear that SW attaches the same importance to improving its trading surplus. Thus, good outcomes from SW would appear to depend almost exclusively on the successful alignment of management and worker bonuses with the outperformance of regulatory targets.

It seems that the way in which the proposed scheme works is that outperformance in one period leads to a reduction in RCV in future years, thereby reducing the company's future 'allowed rate of return'. Does this create a disincentive to outperform?

5. I think that the most important difference between private and public sector companies is that in private companies, (except for unregulated monopolies), there are both carrots and sticks. In public sector monopolies, on the other hand, (as distinct from the very few publicly owned companies which operate in truly competitive markets), there are usually only carrots. This is easily observable in the differences in corporate culture between the two kinds of company. Consequently, the effects of incentives are more muted in public sector monopolies. And that will always remain the case so long as senior management do not feel that their jobs are on the line.

6. Yes.

7. Nothing less than 100% transparency can be justified in a publicly owned monopoly. In this case, claims about the need to maintain commercial confidences in order not to weaken the competitive position of the company cannot be adduced. The principle you propose that SW should retain the benefits of outperformance subject to advance publication of SW's internal management incentive scheme, and to that scheme being linked explicitly to regulatory targets, is a sound one.

8. I am not sure what "independently assessed" means in this context. In my opinion the regulator should set the targets, with prospective rewards for outperformance, the Board of SW should come up with an incentive scheme, and the owner should either approve it or require it to be amended. The Board should not be left to be the sole judge of its own incentive scheme.

Chapter 6: Establishing a baseline for operating costs

9. Yes

10. I think that the figure suggested by Option 1 is perhaps the best, because (a) it is simplest, and (b) it gives SW the chance to get off to a good start in the new period.

11. The three factors you have identified all look as if they will be significant in 2006-1:

Pensions costs will be sensitive to three major considerations:

- (1) Exactly what kind of pension scheme does SW have, and who bears the liability for any shortfall in funding? As protector of the interests of consumers, you must look out for any tendency for (i) the Treasury, and/or (ii) the Executive to escape their possible responsibilities as owners. You must stand firm against the suggestion that customers should pay for any shortfall.
- (2) Rates of redundancy. The impact of prospective redundancy on the pension fund should be relatively predictable. Unfortunately, the same cannot be said for
- (3) the methods used for valuing pension fund assets and liabilities. Prospective changes in valuation methods are certain to introduce volatility into the results, producing alternating large but illusory 'surpluses' and 'deficits'. An 'actuarial valuation' produced by SW whose conclusions tend to support a claim for changes in the baseline operating expenditure should be treated with grave suspicion, and be subjected to a second opinion.

Rateable Values: Presumably any change in the rateable value of non-domestic properties is likely to be upwards. However, any additional costs to SW would be offset by corresponding increases in revenue from those water tariffs that are based on RVs.

Energy costs: Electricity tariffs are certainly going to move upwards in 2006-2010, but in a relatively predictable manner. Perhaps in the range of 5%-10% per annum.

12. Yes.

Chapter 7: Ensuring like-for-like comparisons of efficiency

13. Yes.

Chapter 8: Ofwat's approach to assessing operating cost efficiency

14. Given the dearth of reliable information available upon which to base the Review, it would be strange not to take advantage of the evidence provided by the Ofwat models, especially as they have been refined in the light of many years of experience. However, I note that only six of the nine Ofwat models are 'econometric' in the usual sense of that word. In three of those six the combined explanatory power of the independent variables is poor. Perhaps this illustrates the limitations of econometrics as a technique rather than the limitations of the modeling.

Chapter 9: An alternative method to assessing operating cost efficiency

15. I think that it is absolutely right that an alternative model should have been developed. Although it is difficult for an outsider to judge its merits, the account offered in the text suggests that it is well-grounded and robust. Given the difference in approach from the Ofwat models, it is most encouraging that the two methods give broadly similar efficiency scores for Scottish Water in the same year, and that the scores move in the same direction from one year to the next. This should give the impartial observer confidence in the WICS process for setting efficiency targets for operating expenditure. It also makes it more difficult for those who wish to argue that 'special factors' invalidate comparability. Certainly, the onus should be on such people to show precisely how any such factors would impact on costs.

16. I suppose there is the simplistic approach of applying to the baseline the annual rate of improvement in cost efficiency actually achieved in England and Wales over an earlier period of years. To argue against this, one would have to say that there did not exist in Scotland comparable scope for a reduction in 'initial' inefficiency, and that the annual improvements in efficiency which come about normally through continuing improvements in technology and in working practices could not be replicated in Scotland. Either of these arguments would seem difficult to sustain.

17. It is clearly appropriate to take account of differences between Scotland and England & Wales in the scope of their respective activities when calculating efficiency costs, because you want to be comparing like-with-like. That does not mean however, that WICS should take steps that would inadvertently or otherwise cause SW to change the scope of its activities in ways that might not be efficient. Take the example of water leakages. The measure required here is presumably that costs to stop leakages should be incurred up to the point where the marginal value of the water lost is equal to the

marginal cost of the preventative expenditure. It could be that the value of water lost in Scotland is at the margin very low.

18. Again, differences in levels of service should certainly be taken into account when calculating efficiency costs. But I should have thought that the most appropriate way of closing the gap with E&W is simply to allow DWQR and SEPA to impose their desired regulatory standards for water and waste water quality.

19 Of the seven options that are suggested, I think that options 1 and 2 should be pursued. One does not have to believe the SW data, but it might be useful to have them.

Chapter 11: The scope and timeframe for improvement

20 Yes.

Chapter 12: New operating expenditure

21. Yes

22. In general, I am sure that that is true. In the particular circumstances of SW at the present time, I wonder whether there may not be greater scope for reducing baseline expenditure through reorganization of working practices and the associated reductions in overmanning?

Chapter 13: Public Private Partnership financing

23. This is an excellent initiative on the part of WICS that should appeal to Ministers. It should even appeal to SW. Once they have got over their irritation at having more work thrust upon them, they will see the suggestion as tangible evidence of their progress so far.

WICS should not allow our criticisms of part PPP agreement to restrict the opportunity for Scottish Water to use this method of investment and service delivery if it represented best value to customers.

24. Yes

25. There may be practical difficulties that would indicate delay but, if not, then why not implement it from 2006/7?

Chapter 14: Setting the allowed level of operating costs

26 / 27. The process for calculating the allowable level of operating expenditure for SW in each year of the regulatory period to March 2010 that is set out in eight steps on page 127 is admirably logical, clear, and I should think difficult to disagree with.

The key judgment about the rate at which the efficiency gap should be closed is going to be ultimately subjective, but it can be informed by the evidence of the rates of progress actually achieved in England & Wales. I don't think that what happened in the past in SW is a particularly helpful guide to the future, although it should not be entirely disregarded.

The measure of the efficiency gap shown on p.88, when recalculated to take account of differences in scope and service levels between Scotland and E&W, is 186, I think. This is a very large number, so it would be surprising if the annual rate of improvement in cost efficiency expected of SW over the next four years were to be less than that achieved by England & Wales in their last regulatory period. In fact, one would look for a significantly faster rate of progress in Scotland in the future

28. Only that I believe that we should be looking to introduce an element of franchise regulation for the period from 2010, if not for operating expenditure then at the very least for capital expenditure.

29. Strongly Agree. I think it is an excellent idea to follow Ofwat's example and to distinguish explicitly between the scope for efficiency improvements and the target for the allowable level of operating costs, so that a margin for potential outperformance is clearly identified in advance and, if achieved, rewarded.

30 Yes. The arguments in favour of doing so appear to be conclusive.

Chapter 15: Regulating levels of service

31 I entirely accept the view that the target setting approach to levels of customer service requires information that would be costly to obtain. And any such information could only be an approximation to what is truly required. To proceed with this approach would seem to violate the regulatory principles of transparency and proportionality.

32. The adjustment of the benchmarking approach so that new operating costs directed to improving levels of service are 'allowable' would seem to fit the circumstances of the water industry in Scotland at the present time very well.

33. I don't think that leakage is a problem that can appropriately be dealt with by setting a physical target. Rather, an approach should be adopted that gives SW the incentive to reduce leakages up to the point where the marginal costs and the marginal benefits of doing so are equal.

Chapter 16: Monitoring operating expenditures and levels of service

34. You write that your frameworks for monitoring SW's performance on service and on levels of operating expenditure are "robust". I agree. They don't leave SW much wiggle room. With those two frameworks in place, your experience of monitoring gained in the last regulatory period, and additional information expected in the next period, I should say that the customer is being well protected.

DRFS
2.11.04

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SCOTTISH WATER RESPONSE

TO

**WATER INDUSTRY COMMISSIONER FOR SCOTLAND
CONSULTATION ON**

OUR WORK IN REGULATING THE SCOTTISH WATER INDUSTRY

NOVEMBER 2004

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1. EXECUTIVE SUMMARY

The WIC has outlined a fundamental change in our regulatory framework: the shift to a price-cap, and the adoption of a regulated capital value (RCV). We welcome and are generally supportive of these and other proposed regulatory system changes, although we consider it is important to fully explore their implications for our financial stability.

Our overriding concern is that a regulatory framework is established which secures Scottish Water's financial sustainability for the benefit of customers. A key aspect of the proposed methodology is the implicit risk transfer from customers to the Scottish Executive, as owner of Scottish Water. Our aim in this period of change is to ensure that Scottish Water obtains the same level of protection from financial risk and consequent risk to customer service as for the water & sewerage companies in England & Wales (E&W). With the move to an incentive-based price cap regime, it is important to ensure that Scottish Water can out-perform the financial projections made in the periodic review settlement. Otherwise, financial sustainability may be put at risk.

Given the significance of the changes being proposed in the regulatory system, we are disappointed that a longer consultation period is not available. We do, however, recognise the acute time pressures caused by the accelerated and concurrent SRC06 & Q&SIII processes and their impact on all stakeholders. In pursuing such an ambitious timetable, it should be recognised that the quality of inputs from all parties may be affected. It may, therefore, be appropriate for us to comment further on methodological issues at a later stage in the SRC06 process.

Price setting and RCV

The WIC has outlined a fundamental change in our regulatory framework: the shift to a price-cap, and the adoption of a regulated capital value (RCV).

Our financial sustainability relies on our ability to sustain operations from charges and to borrow for investment purposes. This has caused us to think more widely about the circumstances in which this could not be sustained and what the consequences might be. This has caused us to think about the initial capital structure for Scottish Water, the financial and operational risks that we face and how these risks might be accommodated within the regulatory and financial framework. We believe that further discussion is required with the WIC and the Scottish Executive on the initial capital structure for Scottish Water and how this might strengthen Scottish Water's ability to accommodate risks and reduce the exposure of financial shocks to customers and taxpayers.

We believe that the overriding principle for setting the initial value for RCV is to ensure that we are financially robust while minimising final prices to consumers. With this principle in mind, we believe that our RCV should be set to ensure comparable financial indicators with England and Wales (E&W) water companies. This approach is referred to by the WIC as the "comparator approach".

The comparator approach is the only approach that necessarily ensures our financial sustainability. In setting an RCV consistent with the financial ratios observed for E&W companies, this approach should provide sufficient revenues to ensure we can endure cost and revenue shocks to the same degree as E&W companies. However, this is also dependent on us earning a rate of return equivalent to our cost of capital as discussed below.

We believe that the "hybrid approach" to estimating our cost of capital under-estimates our rate of return because it focuses on our cost of finance rather than our cost of capital. As a result, neither Scottish Water nor our customers would be adequately protected against financial risks.

We propose that WIC should set the allowed rate of return equal to our cost of capital instead of the "hybrid WACC". Setting the allowed rate of return equal to our cost of capital will ensure that the business and our customers enjoy similar levels of security with regard to financial risks as water and sewerage companies and their customers in E&W. Our suggested approach enjoys regulatory precedent in the UK and elsewhere.



We do not believe that setting the allowed rate of return equal to the cost of capital provides perverse incentives for us regarding our capital structure decisions. We propose that we monitor and report our level of retained earnings as part of our regulatory reporting requirement. This will ensure that our incentives to reduce costs are not blunted. Once our reserves have reached a level consistent with long term financial sustainability, we could provide customer rebates to ensure that our reserves do not become excessive.

Risk

Two types of risk need to be considered for Scottish Water – business risk and regulatory risk. A very high level comparison on each of these is set out in our detailed response.

This high-level comparison suggests that, on the whole, our risks – and hence, our cost of capital – may well be higher than the risks faced by comparable companies in E&W. This assessment is different from the WIC's view that our risk profile could reasonably be considered to be lower than that of companies south of the border.¹

For the reasons set out in our detailed response, we believe that the level of financial risks in Scottish Water is higher than for companies south of the border and that this should be reflected in the financial structure determined under the RCV regime and, also, in the cost of capital. We have commenced discussions with one of the rating agencies regarding their potential approach to assessing Scottish Water for rating purposes.

We question the scope of the risk analysis undertaken by the WIC and reported in section 4.3. The WIC's assessment does not include the full range of risks that we are exposed to. Understanding these risks (and ensuring revenue proposals are consistent with managing these risks) protects services and customer interests.

We are undertaking our own in-house financial modelling regarding these risk parameters. This will enable us to understand the risks that we and our customers face. We will submit to WIC separately a document setting out the range and magnitude of our risk exposures along with our second draft business plan.

We agree with the WIC's proposal to extend the risk analysis to incorporate the financial ratios used by Ofwat.

Risk and the regulatory settlement

The sustainability of a given financial structure will depend on judgements made in the regulatory settlement. The major financial restructurings in the water sector in England & Wales after 1999 have been attributed to a tough regulatory settlement, with P0 reductions averaging 12% and a low cost of capital. The outcome of the review altered equity market sentiment towards the sector and led to a so-called 'flight of equity'. The review provided a catalyst for the series of changes that subsequently occurred and served to increase perceptions of regulatory risk for the sector.

Ofwat has devoted considerable effort to restoring investor confidence in the regulatory regime. The most recent Water UK investor survey (March 2004) showed that 87% of respondents considered that regulatory risk had fallen since 1999 due to the increasingly transparent way in which the review was being conducted; also investors felt their views on the need for equity returns to be increased were accepted by the Regulator.

The issues of investor confidence do not arise in the case of Scottish Water but wider stakeholders need to have confidence in both the regulatory regime and Scottish Water. While judgements on

¹ WIC Volume 3 (2004), p. 104



the cost of capital for Scottish Water do not have the same direct significance, the overall judgements made in the context of SRC06 will condition views on the water sector in Scotland over the next 4 years.

Judgements on Scottish Water's future efficiencies will determine the scope for outperformance and the ability of Scottish Water to build up financial reserves. Our view is that the risks involved in setting efficiency targets are asymmetric. If targets are set which are too aggressive, then risks to the business are increased – and, potentially also for customers if services are put at risk. In contrast, if less demanding targets are set, providing there are incentives to outperform, risks are reduced and outcomes for customers may be improved.

In short, a regulatory settlement consistent with financial sustainability needs to allow sufficient headroom for Scottish Water to outperform its regulatory settlement.

RPI incentive framework

We broadly support the WIC's two key proposals regarding adoption of a rolling-incentive mechanism for opex and capex.

We believe that the RPI-X mechanism provides appropriate incentives for Scottish Water conditional on the creation of appropriate rolling-incentive mechanisms to address the disincentives all companies face as the review approaches.

However, we have a number of concerns with the way in which the rolling incentive mechanism operates in England and Wales and our concerns are discussed in the detailed response.

We agree that the incentives paid to management in Scottish Water should be transparent for customers. Although not required to, we have implemented (as far as possible) the obligations placed upon quoted companies with respect to publishing a member's remuneration report within our annual report.

We also agree that management and employee incentives should be clearly linked to performance against regulatory targets. We will strive to publish, in advance, the incentive framework for managers and ensure that achievement of regulatory targets is a clear and discrete element of the framework.

Econometric Modelling

The WIC's proposed "top-down" approach provides one method of comparing our efficiency performance with that of our peers in England and Wales, provided that sufficient regard is given to the special factors that impact our costs, but which are not adequately allowed for in the econometric models.

We are concerned about the WIC's exclusive reliance on Ofwat's models and his own alternative model when estimating our efficiency gap. Ofwat's OLS regression models, and the WIC's alternative models, estimate our comparative efficiency with error (i.e. the difference in Scottish Water's efficiency relative to the frontier company). This is because the gap is not wholly an "efficiency gap" due to the considerable statistical error associated with comparative efficiency analysis. We believe that a wider range of econometric model specifications, which include Scottish Water as an observation should be considered to reduce the scope for estimation error.

Our overarching concern about Ofwat's models is that their residuals are not necessarily indicative of comparative inefficiency. Recent analysis by Cubbin² suggests that less than 40%-50% of the

² Professor John Cubbin (2004) "Assessing Ofwat's Efficiency Econometrics", A Report for Water UK. A follow-up study by Professor Cubbin for SW suggested that the Ofwat models were likely to be even less robust when applied to SW (see Professor John Cubbin (2004) "Assessing Ofwat's Efficiency Econometrics as Relating to Scottish Water", A Report for Scottish Water).



estimated efficiency gap for companies in England and Wales relative to the “frontier” can be attributed to actual inefficiency rather than estimation error.

The assessment of our comparative efficiency could be improved by using a range of different models including panel data models. Moreover, in all cases, extreme caution should be exercised in interpreting model residuals as an indication of inefficiency.

Despite the well-known concerns about the robustness of these models, the WIC’s proposal to adopt a less cautious approach than Ofwat, in not applying a “residual adjustment” and in setting an 80% catch-up factor over 4 years, provides limited, or no, incentive for out-performance.

Interim determinations and logging up and down

We believe that there should be a process to adjust prices during a regulatory control period, i.e. we support the introduction of an IDOK mechanism, to address unforeseen factors at the time of setting prices.

We believe that IDOK and logging mechanisms constitute key aspects of a robust regulatory framework. Formalised and transparent procedures will mitigate the risk of us failing to meet our investment obligations because of unforeseen risks, improve confidence in the regulatory regime, and will facilitate better monitoring of our performance against the regulatory contract.

We welcome the introduction of formal regulatory processes and the WIC’s proposals to establish interim determination mechanisms like those developed by Ofwat – although the level of the materiality threshold needs to be considered in the context of the overall risk accommodation properties of the capital structure, and level of cash reserves.

We will respond in more detail to the WIC’s proposals when these are set out in the draft determinations.

Public Private Partnerships

In the interests of our customers, where the appropriate operating circumstances prevail we will pursue opportunities relating to reducing the costs of PPP contracts within the terms of the contract, and where such an action can demonstrate sustainable savings over the remaining life(s) of the contract(s).

We are very concerned that the WIC proposes to pass-through unrealised hypothetical efficiency gains- i.e. will set an efficiency target for Scottish Water even in the absence of the ability to re-negotiate these contracts. We strongly disagree with this approach.

We have no available mechanism, and the PFI companies have no contractual incentive, to change the contract terms to reduce the contract costs. Equally there is a strong safeguard for us, and our customers, in that the PFI companies cannot demand price increases from us to reflect their costs which are greater than those forecast when the contracts were agreed.



Retail Competition

We welcome the clarity brought by the Scottish Executive's decision to establish a legal framework for retail competition in response to the requirements of the Competition Act (1998). We want to ensure that we are in position to operate effectively within this framework.

We believe that in the light of the WIC's own criteria, our alternative approach to price setting should be used as follows:

- Detailed business plan proposals for Scottish Water should be used to determine the wholesale charge based on the lowest reasonable overall cost that Scottish Water will incur in carrying out its core functions excluding its current retail activities but including new functions connected with the retail market and taking into account any changes to the costs of carrying out its core functions due to separation e.g. loss of scale economies in contact management;
- Detailed business plan proposals for Scottish Water Retail should be used to determine the retail charge based on the lowest reasonable overall cost that Scottish Water Retail will incur in carrying out its retail functions, including any new functions that are not currently carried out by Scottish Water e.g. interactions with market mechanisms and taking into account any changes to the costs of carrying out its core functions due to separation e.g. duplication of IT systems.
- Where Scottish Water and Scottish Water Retail contract for the delivery of services, these agreements would be subject to the normal constraints on inter-group contracts as set out in RAG 5.03 "Transfer pricing in the water industry", which ensures amongst other things compliance with the conditions of the Competition Act.

In this way the WIC can ensure its compliance with the terms of the Bill, while avoiding it being challenged by third parties. Since the wholesale charge is based on the lowest reasonable overall cost of carrying out Scottish Water's functions, no third party can successfully argue that the charge should be lower. (It can be assumed that no third party will argue the charge should be higher.)



2. VOLUME 1 WORKPLAN

The Water Industry Commissioner has published four documents to date on the proposed methodology for the Strategic Review of Charges 2006-10.

- Volume 1: Setting Out a Clear Framework for the Strategic Review of Charges 2006-2010
- Volume 2: Background to and Framework for the Strategic Review of Charges 2006-2010
- Volume 3: The Calculation of Prices
- Volume 4: The Scope for Operating Cost Efficiency

Volume 5, the scope for Capital Efficiency is expected to be published for consultation in late November.

This document sets out Scottish Water's response to volumes 1, 3 and 4 of the Water Industry Commissioner's (WIC) documents on methodology for the Strategic Review of Charges, 2006-2010 (SRC06). We have no comments on Volume 2.

Scottish Water is pleased that the WIC is adopting Better Regulation principles. The documents published have generally been clear and easy to digest.

We understand the time pressures on all parties to adhere to timetables. Nevertheless, we are very concerned about the limited time available to respond to significant regulatory system changes and complex methodological issues.

There are significant changes planned in the regulatory system in Scotland and in the processes and methodologies underpinning the regulatory system. We will continue to review the changes detailed in the methodology and their impact on Scottish Water, the Scottish Executive (in their capacity as owner and funder) and customers. We will make additional responses to WIC if our current view changes, based on further information that becomes available.

Our overriding concern is that a regulatory framework is established, which secures Scottish Water's financial sustainability for the benefit of customers. A key aspect of the proposed methodology, is the implicit risk transfer from customers to the Scottish Executive, as owner of Scottish Water. Our aim in this period of change is to ensure that Scottish Water obtains the same level of protection from financial risk and consequent risk to customer service as for the water & sewerage companies in England & Wales (E&W).



3. VOLUME 3 THE CALCULATION OF PRICES

Introduction

The issues raised and the questions posed in volume 3 are addressed, although in a different order to that presented in the consultation document. Each of the consultation questions is reproduced followed by a detailed discussion and response. Where extensive discussion is provided, the key points of the response are summarised at the end of the discussion

3.1. Ensuring Financial Sustainability

This section sets out our views and our response to the consultation document on the issues of primary importance to our financial sustainability³, which is a pre-requisite regarding our ability to provide services to customers. These primary issues comprise:

- The determination of charges
- The allowed rate of return
- Setting the initial RCV
- Depreciation (e.g. rolling forward the RCV)
- Managing risk in the public sector (or “financeability”)
- Interim Determinations of Prices (IDOK) and logging mechanisms

Our overriding concern is that a regulatory framework is established which secures Scottish Water’s financial sustainability and security of supply and service for customers. Our approach to each issue – the allowed rate of return, RCV, depreciation, risk and IDOK procedures – constitutes a necessary condition for a financially sustainable framework. Taken together, our approach would ensure that Scottish Water would benefit from the same level of protection from financial risk and consequent risk to customer service as enjoyed by the water and sewerage companies in England & Wales.

While aiming for financial sustainability, our proposals also seek to minimise charges to customers, and to promote efficiency in the delivery of water and sewerage services. We therefore believe that our approach would provide value for money for customers by securing an appropriate balance between cost and risk. Specifically, our preferred approach includes:

- setting our allowed rate of return equal to our cost of capital to reflect the risk we bear, and to promote efficient use of capital resources;
- setting the initial level of the RCV to ensure that we can finance our operations and capital renewal over the long term from customer charges;
- comprehensive risk modelling to ensure that we can continue to deliver services under plausible downside scenarios;
- adoption of an IDOK clause to address uncertainties and shocks to the business, and a transparent logging mechanism to deal with expenditures unforeseen at the time of the review.

³ We define financial sustainability as our ability to sustain current operations from charges and to borrow for investment purposes - the equivalent of the Chancellor’s ‘Golden Rule’ for public finances.



3.1.1. Chapter 5 Determination of Charges

Responses to Consultation Questions

- 1. Do customers agree that the regulatory capital method of price setting will help to facilitate comparisons between the water industry in Scotland and south of the border? If not, what are the alternative methods they would suggest?*

The WIC has outlined a fundamental change in our regulatory framework: the shift to a price-cap, and the adoption of a regulated capital value (RCV). We are generally supportive of these changes, although it is important to explore their implications for our financial stability.

The regulatory capital method of price setting will undoubtedly help to facilitate comparisons between the water industry in Scotland and south of the border. However, the feasibility of such ongoing comparisons is not the crucial argument in favour of fundamental changes in Scotland's economic regulatory framework. What matters in our view is the impact of these changes on regulatory and financial stability.

We believe that the regulatory capital method of price setting has considerable potential to enhance regulatory stability and transparency. However, we are concerned that this potential for greater regulatory stability might not be fully realised if only the "agreed efficient cost" of capital investment is added to the RCV. In other words, "inefficiently" incurred cost will *never* be recouped. This means that failure to meet the WIC efficiency reductions will be manifested in ever worsening debt to RCV ratios, which will at some point become unsustainable. We ask that WIC publishes further clarification on this issue.

We believe this is not how price caps operate. Periodically (i.e. at the periodic review) charges to customers need to be re-set in line with costs. This is a fundamental principle of a price cap regime as practised throughout regulated utility sectors in the UK. We therefore believe that at each periodic review the actual cost rather than the efficient cost of capital investment needs to be taken into account by the WIC as the starting point for setting charges, subject to prudence reviews.

- 2. Do customers agree that it would be better to set a series of price caps rather than the current system of setting a single revenue cap?*

Under a price cap regime, we will incur greater revenue risk than compared to current regulatory provisions. That is, our revenue will be reduced in the event of an unanticipated change in the customer base or in demand. Therefore, it is very important for us that the new mechanisms for dealing with uncertainty are adequate, e.g. through risk-mitigating mechanisms such as the IDOK provision.

Customers will benefit from stability in their charges from a price cap regime. However, customers also want to see service improvement without disruption, and we have to stay within our public expenditure limits. Thus, the (higher risk) price cap arrangement should only be adopted in conjunction with a rate of return on the regulatory asset value and mechanisms for logging up and down and interim determinations which protect us against excessive revenue volatility.

In the following sections, we outline our response to rate of return, RCV and financial ratios, as well as IDOK and logging mechanisms, which would provide us with equivalent protection against risk arising from a price cap regime as enjoyed by the privatised water & sewerage companies in E&W.



3. Are there other actions we should consider to improve the transparency of the price setting process?

The transparency of the price setting process proposed by the WIC could be enhanced in several respects. We suggest that:

- the initial RCV is clearly stated in the WIC's draft determinations;
- assumptions about borrowing levels and limits for the coming regulatory period are published and that departures from these limits comprise a Notified Item;
- the measures and targets for our outputs and obligations are fully developed and published;
- clear procedures for logging up/down and interim determinations are set out as soon as possible by the WIC;
- the number of individual price caps, and thus the complexity of the price setting model, are kept to a minimum; and
- there should be a shadow licence framework for the wholesale business as a means of codifying Scottish Water's rights and obligations. The regulatory regime for Scottish Water would have greater credibility with a licence framework.

3.1.2. Chapter 9 Setting the Allowed Rate of Return

Responses to Consultation Questions

1. Do respondents agree that it would not be appropriate to adopt the rate of return allowed for the private sector water industry south of the border by Ofwat?

We believe that our allowed rate of return should be set equal to our cost of capital. We propose that a comparator approach to estimating our cost of capital should be adopted, with private sector water and sewerage companies south of the border as the appropriate comparators because they face similar fundamental risks. We believe that our cost of capital might be higher than that estimated by Ofwat for private sector water and sewerage companies in England and Wales because: (i) Ofwat might have under-estimated the cost of capital of these companies; and, (ii) we face higher regulatory risks which are not compensated for by lower business risk. This is discussed further in our response to the next question.

2. Do respondents agree that the hybrid approach described above should be used to set the allowed rate of return for Scottish Water? If not, which other method would respondents suggest? In particular how could the suggested method facilitate monitoring and avoid any incentive for any stakeholder to seek to change the ratio of debt to RCV?

We believe that Scottish Water's allowed rate of return should reflect its cost of capital rather than the WIC's "hybrid WACC".

⁴ See e.g. Flemming and Mayer (1997), "The Assessment: Public-sector Investment", p. 4, "The currently prevailing view is that the cost of capital of equivalent projects is the same in the private and public sector." See Currie (2000), "Funding the London Underground", pp. 16-20 for an effective rejoinder to a classical objection to this view, which is based on the Arrow-Lind Theorem. Grout (1995), Section 4, "Cost of Capital in Regulated Industries" provides a comparison of the appropriate rate of return in the public and the private sector.

⁵ ORR (2003), "Access Charges Review 2003", p. 193-94, paragraph 13.28: "While allowing the company a return in excess of its likely interest payments will provide Network Rail with an annual buffer against cost overruns, the scale of this buffer has been set so that it is in line with that which is made available to other monopoly network businesses. The Regulator therefore considers that the incentives facing Network Rail's management will be no less strong than those facing management in similar companies as a result of these conclusions."

⁶ For Ireland, the airport sector, electricity and gas sectors are publicly owned and subject to price caps. The regulators for the respective utilities- Dublin Airports Authority (formally Aer Rianta), ESB (electricity utility) and BGE (the gas utility) – have set in all three cases allowed rate of return equal to the cost of capital. In Australia, the airport sector is publicly-owned, and the sector regulator has allowed rate of return equal to the cost of capital.



The cost of capital is a market-based measure of the return required by debt and equity holders to compensate them for risk. The prevailing view is that the public sector cost of capital is identical to the private sector for equivalent projects. This is because the cost of capital is independent of the financing of the project or ownership; it is simply related to a project's fundamental risk characteristics. The principle of the equivalence of public and private cost of capital is well established in the academic literature¹².

However, the actual *cost of finance* in the public sector might be lower than its *cost of capital* because public bodies can often raise debt at a relatively low cost. This is because public sector bodies typically enjoy sovereign guarantees, whereby government (through its tax raising powers) guarantees the repayment of the debt. However, the overall public sector cost of capital is not different from that of the private sector. After all, public investment is not risk free; it is simply that the risk is transferred to taxpayers without giving them the reward that private sector investors could expect to receive.

We will use this distinction between *cost of capital* and *cost of finance* in the following analysis that supports our response.

We believe that the WIC's "hybrid WACC" under-estimates the required rate of return because it focuses on Scottish Water's *cost of finance* rather than on its *cost of capital*. As a result, Scottish Water would not be adequately protected against financial risks, which would then result in greater risks to service delivery. We believe that the allowed rate of return for Scottish Water should be set equal to our cost of capital.

The cost of capital is related to the fundamental risk of the business. Setting the allowed rate of return equal to the cost of capital is the approach used in E&W and adopting this approach for us will provide us (and our customers) with a similar level of financial resilience with regard to cost and revenue shocks as enjoyed by companies and customers in E&W.

Setting the allowed rate of return equal to the cost of capital will also provide a source of equity finance for us in the form of retained earnings. This is important where we have a significant capital enhancement programme and cannot access private equity markets (like our peers in England and Wales). The provision of retained earnings mitigates the risk of the debt to RCV ratio increasing to unsustainable levels.

⁷ ORR (2003), p. 189, paragraphs 13.10-13.11: "The Regulator explained in his third consultation document that he considers that it is appropriate to place significant emphasis, at least in the first instance, on comparisons with other regulated network businesses and on assessing how much risk investors in Network Rail bear compared with investors in these other companies. If it appears that Network Rail's investors bear similar levels of risk to investors in similar businesses, the Regulator considers that this provides a strong basis for setting a similar overall return. [...] This approach is essentially the same as that which has been adopted by regulators in other industries in their own rate of return calculations and mirrors very closely the approach the Regulator adopted at the October 2000 access charges review."

⁸ NERA (2004) "UK Water Cost of Capital", A Final Report for Water UK, p.iv.

⁹ WIC (2004), p. 104

¹⁰ A nice summary of the predictions of finance theory on the relationship between gearing and the WACC comes from Morin's (1994) textbook on regulatory finance: "In the final analysis, finance theory provides limited guidance on what a company's capital structure should be precisely...As a practical matter, the effect of capital structure on total weighted average cost of capital is likely to be minor over the range of capital structures usually found in the utility industry".

¹¹ NERA (2002) "UK Water Cost of Capital and Gearing: What is the Relationship?"

¹² See e.g. Flemming and Mayer (1997), "The Assessment: Public-sector Investment", p. 4, "The currently prevailing view is that the cost of capital of equivalent projects is the same in the private and public sector." See Currie (2000), "Funding the London Underground", pp. 16-20 for an effective rejoinder to a classical objection to this view, which is based on the Arrow-Lind Theorem. Grout (1995), Section 4, "Cost of Capital in Regulated Industries" provides a comparison of the appropriate rate of return in the public and the private sector.

¹³



Hence, for reasons of financial sustainability we believe that the allowed rate of return should be set equal to our cost of capital. This approach enjoys strong regulatory precedent. This is exactly the view taken by another regulator, the ORR, in its price determinations for Network Rail.¹⁴ Setting the allowed rate of return equal to the cost of capital for public sector bodies also enjoys precedent in other countries, notably Ireland and Australia.¹⁵

We also note that this approach is consistent with allocative efficiency – i.e. ensuring that water and sewerage service prices reflect the economic cost of the capital employed. This provides the appropriate signal for (metered) customers to conserve water, and to seek efficient alternative sources. Adopting a rate of return equal to the cost of capital is also important in ensuring competitive neutrality i.e. ensuring that we do not set prices below the actual economic cost. This might be particularly important for industrial customers where there is competition from self-supply and new retail entrants.

The WIC has expressed a concern that setting the allowed rate of return equal to the cost of capital would provide us with additional funds which might blunt our incentives to reduce costs to the efficient level (because of the level of headroom provided). This issue could easily be addressed by adopting explicit monitoring of the level of retained earnings and by the introduction of customer rebates once pre-determined financial ratios have been, and continue to be, achieved.

The WIC also expresses concerns about the possibility of estimating our cost of capital. While our implicit equity costs and competitive market debt costs are not directly observable, there is significant regulatory and academic precedent for estimating the cost of capital of non-quoted (i.e. both private and public) entities. Most commonly, a comparator approach is adopted whereby the cost of capital for a non-quoted entity is set on the basis of the observed cost of capital of a quoted company with similar risk characteristics.¹⁶

The water and sewerage companies in E&W are our most obvious comparators, particularly if most other aspects of their regulatory framework are to be adopted by the WIC as proposed. Ofwat has recently estimated a post-tax cost of capital for these companies of 5.1%. However, we note that this is contested by the industry; a recent study by Water UK estimates the cost of capital for WaSCs at 5.5% post-tax real.¹⁷

There may be a requirement to make some adjustments to Ofwat's – or indeed Water UK's – estimate for the cost of capital to capture risks specific to Scottish Water (although these will partly depend on the decisions taken by the WIC regarding the regulatory regime). Two types of risk need to be considered for Scottish Water – business risk and regulatory risk. A high level comparison on each of these is set out below:

1. Business Risk

¹⁴ ORR (2003), "Access Charges Review 2003", p. 193-94, paragraph 13.28: "While allowing the company a return in excess of its likely interest payments will provide Network Rail with an annual buffer against cost overruns, the scale of this buffer has been set so that it is in line with that which is made available to other monopoly network businesses. The Regulator therefore considers that the incentives facing Network Rail's management will be no less strong than those facing management in similar companies as a result of these conclusions."

¹⁵ For Ireland, the airport, electricity and gas sectors are publicly owned and subject to price caps. The regulators for the respective utilities- Dublin Airports Authority (formally Aer Rianta), ESB (electricity utility) and BGE (the gas utility) – have set in all three cases allowed rate of return equal to the cost of capital. In Australia, the airport sector is publicly-owned, and the sector regulator has allowed rate of return equal to the cost of capital.

¹⁶ ORR (2003), p. 189, paragraphs 13.10-13.11: "The Regulator explained in his third consultation document that he considers that it is appropriate to place significant emphasis, at least in the first instance, on comparisons with other regulated network businesses and on assessing how much risk investors in Network Rail bear compared with investors in these other companies. If it appears that Network Rail's investors bear similar levels of risk to investors in similar businesses, the Regulator considers that this provides a strong basis for setting a similar overall return. [...] This approach is essentially the same as that which has been adopted by regulators in other industries in their own rate of return calculations and mirrors very closely the approach the Regulator adopted at the October 2000 access charges review."

¹⁷ NERA (2004) "UK Water Cost of Capital", A Final Report for Water UK, p.iv.



The WIC points out that competition is fiercer in England and Wales, where inset appointments, special deals outside the tariff baskets and common carriage are possible. We consider that these competitive aspects of the regime in E&W are limited, at least to date, and pose limited business risk. The WIC also notes that companies in E&W have improved their operating cost efficiency and thereby reduced the opportunity for significant out performance of the regulatory settlement. This is certainly true, but this point also applies to Scottish Water. There are other elements of business risk which might be higher for us than for companies south of the border e.g.

- uncertainty about bad debt;
- delivery of a very large capital investment programme;
- the consequence of poor information on Scottish Water assets; and
- the changing retail arrangements for business customers.

2. Regulatory Risk

This is higher for us than for water and sewerage companies south of the border. In E&W, the regulatory framework is already well-established. By contrast, important changes to our regulatory framework are still being discussed. In particular, we still face considerable uncertainty about how the RCV and the rate of return will be estimated at the next Strategic Review.

This very high-level comparison suggests that, on the whole, our risks – and hence, our cost of capital – may well be higher than the risks faced by comparable companies in E&W. This assessment is different from the WIC's, who claims that our risk profile could reasonably be considered to be lower than that of companies south of the border.¹⁸ The difference arises because we have taken into account regulatory and wider business risks. We are, however, exploring this issue with a credit rating agency.

The WIC also states that it is difficult to estimate our cost of capital because our gearing is unobserved. However, the issue of capital structure will be resolved with the WIC's formal commitment to a RCV. We also note that the academic theory and finance practitioners support the idea that the cost of capital is largely independent of capital structure.¹⁹ For the water industry, this conclusion is supported by studies by Oxera for Ofwat, and NERA for Water UK.²⁰

Summary of key response messages

We believe that the "hybrid approach" under-estimates our rate of return because it focuses on our cost of finance rather than our cost of capital. As a result, neither Scottish Water nor our customers would be adequately protected against financial risks.

We propose that WIC should set the allowed rate of return equal to our cost of capital. Setting the allowed rate of return equal to our cost of capital will ensure that the business enjoys similar levels of security with regard to financial risks as water and sewerage companies and their customers in E&W. Our suggested approach enjoys regulatory precedent in the UK and elsewhere.

We do not believe that setting the allowed rate of return equal to the cost of capital provides perverse incentives for us regarding our capital structure decisions. We propose that we monitor and report our level of retained earnings as part of our regulatory reporting requirement. This will ensure that our incentives to reduce costs are not blunted.

¹⁸ WIC (2004), p. 104

¹⁹ A nice summary of the predictions of finance theory on the relationship between gearing and the WACC comes from Morin's (1994) textbook on regulatory finance: "In the final analysis, finance theory provides limited guidance on what a company's capital structure should be precisely...As a practical matter, the effect of capital structure on total weighted average cost of capital is likely to be minor over the range of capital structures usually found in the utility industry".

²⁰ NERA (2002) "UK Water Cost of Capital and Gearing: What is the Relationship?"



3. *Do respondents agree that we should make an allowance for embedded debt for this regulatory control period, but only make such allowances in the future if there has been a material change in the rate of inflation?*

The WIC does not explain why no allowance for embedded debt should be made after the next regulatory period unless there has been a material change in the rate of inflation. The WIC also does not properly define what a “material change in the rate of inflation” would amount to. In any case, we believe that the circumstances in which a special allowance for embedded debt (in regulatory periods after the next one) might be made should not be formally restricted to “material” changes in the rate of inflation, however defined. Ofwat²¹ expressed a more general willingness to make an allowance for embedded debt in “exceptional circumstances” provided that companies can “demonstrate that they have taken reasonable and cost-effective steps to improve the efficiency of their financing structure with a view to achieving broadly stable real interest costs” and “show that they had explored all options available to them for refinancing any high-cost fixed rate debt still in their balance sheets at the time of the 2004 review”. We believe that the WIC should, if anything, be more generous in its treatment of embedded debt than Ofwat. After all, embedded debt is a more significant problem for us than for our peers south of the border, who are partially equity financed.

3.1.3. Chapter 8 Establishing an Initial RCV

Responses to Consultation Questions

1. *Do stakeholders agree that there are broadly three ways to establish an initial RCV for Scottish Water?*

We agree that there are broadly three ways to establish our initial RCV. These comprise the asset base approach (where the RCV is based on historic accounting or current cost asset values), the comparator approach (where the RCV is set to ensure we have financial ratios comparable with E&W water companies), and the discounted cash-flow approach (where the RCV is based on the “value-to-the-owner” principle).

2. *Which method would stakeholders see as the most reliable, and why?*

We believe that the overriding principle for setting the initial value for RCV is to ensure that we are financially robust whilst minimising final prices to consumers. With this principle in mind, we believe that our RCV should be set to ensure comparable financial indicators with E&W water companies. This approach is referred to by the WIC as the “comparator approach”.

The comparator approach is the only approach that necessarily ensures our financial sustainability. In setting an RCV consistent with the financial ratios observed for E&W companies, this approach provides sufficient revenues to ensure we can endure cost and revenue shocks to the same degree as E&W companies. However, this is also dependent on us earning a rate of return equivalent to our cost of capital (as discussed above). There are two key steps in establishing an RCV using the comparator approach:

²¹ Ofwat (2004), “Setting Water and Sewerage Price Limits for 2005-20: Framework and Approach”, p. 114-115

²² WIC (2004) op. cit. p. 94

²³ Moody's (July 2002) “The UK Water Sector: Financial Parameter and Structural Enhancements for Leveraged Financings - Ratings Methodology”, p.1

²⁴ Ofwat concluded in a recent report that “On the one hand it appears that, at least in the short term, some of the new structures have the potential to deliver savings for customers by reducing the cost of capital...(O)n the other hand, we believe that some of the more highly geared companies have significantly reduced financial flexibility and in particular are faced with a greater financing risk.” Ofwat (2003) [Ref]

²⁵ Grout, Paul A. and Zalewska A., (2001) “Circularity and the Undervaluation of Privatised Companies”, CMPO Working Paper Series No. 01/39



1. Identifying the set of comparator companies
2. Identifying appropriate financial ratios and levels to ensure financial sustainability

Regarding identification of comparators, the consultation paper states that the “*water and sewerage companies in England and Wales would provide the most obvious comparators for Scottish Water*”.²⁶

We broadly concur with the consultation document.

Our preferred approach for setting RCV using financial indicators associated with the traditional corporate finance model is consistent with Ofwat’s position of adopting a *notional* water company capital structure of around 60:40 debt:equity in assessing E&W companies’ cost of capital and “financeability”. The stated rationale for this approach is to ensure that companies in E&W are not forced to adopt a highly leveraged model, where the finance and operational risks are not completely understood.²⁷

The second step requires the identification of appropriate financial indicators. The WIC has proposed making comparisons with:

- *asset bases (in terms of both value and structure)*
- *non-infrastructure capital investment*
- *Welsh Water’s debt to RCV ratio*
- *companies’ funding costs of RCV ratio*
- *assets relative to the type and number of customers served*

We believe that our RCV should be set with reference to key financial indicators to ensure our financial viability. Primary among these will be the capital structure of comparators’ asset base, i.e. debt to RCV ratio. However, we also believe it is appropriate to follow Ofwat and the ratings agencies and examine the wider set of “financeability” indicators, especially cash-flow measures. This is because financial ratios measure different aspects of companies’ financial strength, and therefore it is important to ensure consistency with a range of key ratios. For example, capital structure ratios measure the ability for companies to take on additional debt, whereas cash-flow ratios reflect the ability of companies to finance current levels of debt. As such we have commenced discussions with the rating agencies.

Ensuring an RCV level consistent with capital structure and cash-flow ratios adopted in E&W will ensure a similar level of financial resilience.

In setting the debt: RCV ratio, we also need to consider our expected future financial position as well as current year ratios. For example, we need to ensure that we have sufficient regulatory balance-sheet funding capacity to finance our future investment requirement through debt.

There is strong regulatory precedent for this approach. Future financial sustainability was a key consideration in establishing financial structure of Network Rail following its acquisition of Railtrack in 1999, where the regulator noted the future financing requirements of Railtrack in setting its debt to RAV ratio. The E&W companies were also privatised with very low leverage to ensure they could finance their activities.

Alternative approaches for the calculation of RCV

²⁶ WIC (2004) op. cit. p. 94

²⁷ Ofwat concluded in a recent report that “*On the one hand it appears that, at least in the short term, some of the new structures have the potential to deliver savings for customers by reducing the cost of capital...On the other hand, we believe that some of the more highly geared companies have significantly reduced financial flexibility and in particular are faced with a greater financing risk.*” Ofwat (March 2003) “Setting Water and Sewerage price limits for 2005-2010: Framework and Approach page 112.



We do not believe it would be appropriate to set an RCV on the basis of asset valuations or discounted cash-flows (DCF) techniques. Setting the RCV using these approaches will not necessarily secure our financial sustainability, with the attendant risks to the provision of water and sewerage services. The two approaches are discussed briefly below.

1. Asset base approaches

Using a measure of the current cost of assets is theoretically attractive because this provides a measure of the actual resource cost of providing water services in Scotland. As set out in the consultation document, there are a number of different ways to calculate a current cost measure. A common approach, and the approach adopted in E&W for calculation of non-infrastructure capital charges, is to use modern equivalent asset value i.e. the current replacement value of the asset which delivers an identical level of service.

While this approach has been adopted in UK regulation, notable for BAA and for NATS, it is not the preferred approach for Scottish Water.

In contrast, using an historic asset valuation has no theoretical basis. Historic asset values do not reflect resources costs rather they reflect historic costs which have been eroded by general price inflation through time. Therefore, assets valued in historic terms tend to underestimate the economic costs of the asset base. Moreover, setting the RCV equal to historic costs would not ensure our financial sustainability. We therefore do not recommend this approach.



2. DCF Techniques

The third alternative is to use a discounted cash-flow (DCF) or net present value (NPV) approach. This approach also has the theoretical attraction that it is based on the value-to-owner principle. However, in the context of setting an initial RCV at the same time as re-setting prices this approach is not useful. This is because there is an inherent problem of circularity: future cash-flows are dependent on the value of the RCV, which in turn, under this approach, is determined by future cash-flows.²⁸

The consultation proposes a way around this problem of circularity. The document suggests a DCF approach where the RCV value is set equal to discounted net cash-flows, with prices and opex assumed to be held constant in real terms, and capex set equal to depreciation. In effect, this approach “locks in” the current regulatory contract.

However, as the consultation document acknowledges this approach is based on a number of arbitrary assumptions. Moreover, this approach does not necessarily satisfy our overriding financial sustainability criterion.

Summary of key response messages

We believe that the comparator approach is the most appropriate basis for setting RCV. Unlike the DCF and the asset base approach, it necessarily ensures the financial and operating sustainability of Scottish Water, whilst minimising prices to customers.

As highlighted above, the comparator approach needs to be appropriately tailored to our situation. First, our appropriate comparator companies in England and Wales are the traditional corporate finance models rather than highly leveraged companies (e.g. Welsh). Second, our RCV should be set with reference to a range of key financial indicators to ensure our financial viability. Capital structure ratios, cash-flow ratios and our expected future financial position will all have to be considered.

²⁸ Grout, Paul A. and Zalewska A., (2001) “Circularity and the Undervaluation of Privatised Companies”, CMPO Working Paper Series No. 01/39



3.1.4. Chapter 3 An introduction to Depreciation

Responses to Consultation Questions

1. Is the proposed approach to depreciation for the Strategic Review of Charges 2006-10 appropriate?

We believe that it is appropriate, in principle, to adopt infrastructure renewals accounting for below ground assets. We note, however, that in E&W the statutory company accounts for 2005/06 will be prepared using IFRS and will not use infrastructure renewals accounting, with associated tax implications.

We also consider that for non-infrastructure depreciation the use of current cost of depreciation (CCD) on MEA is satisfactory in principle. We agree that the WIC should not use broad equivalence as a check on its current cost accounting results for the next regulatory period because of an absence of data and as it could lead to under-recovery of capex and undermine financial sustainability.

Our primary concern regards the proposed derivation of the depreciation charge on non-infrastructure assets. We gather²⁹ that the WIC wishes to apply Ofwat's "standard apportionment" for MNI capital maintenance and enhancement expenditure to derive Scottish Water's depreciation charge, i.e. the WIC will assume that the make-up of the capex programme in Scotland is identical to the programme in E&W. However, Ofwat's standard apportionments might not be suitably calibrated for us.

The application of standard apportionments in E&W could imply that our depreciation profile, and therefore cash position, is out of line with our spending programme. This increases financial risk to our business. It also creates potential inequality between generations of customers. We therefore propose that the WIC uses our actual capex make-up in calculating our depreciation charge. We note, however, that the WIC financial model does in fact use our actual depreciation charge information.

The WIC also raises a number of more specific questions:

2. Is the proposed method of determining asset life, through a five stage classification from 'very short' to 'long' adequate?

We believe a classification of our assets into five asset life categories from "short" to "very long" is sensible and consistent with Ofwat's regulatory precedent. However, minor adjustments to Ofwat's classification might be necessary to take into account our specific circumstances.

3. Is straight line depreciation the most appropriate mechanism for assessing the annual reduction in value of Scottish Water's assets?

We find straight line current cost depreciation of our non-infrastructure assets acceptable for the time being (whether or not it is "the most appropriate mechanism").

It is consistent with Ofwat's approach and our own approach in the Draft Business Plan. We note that there are good arguments for forward tilting depreciation where technical progress or expected downward revaluations of MEA will limit the future ability to recover capex via depreciation.

²⁹ WIC (2004), Appendix 1, p. 165



4. Does the proposed use of MEA valuation provide a suitable method for estimating the economic value of Scottish Water's assets or would other methods give a better estimation?

We believe the proposed use of MEA valuation provides a suitable method for estimating the economic value of Scottish Water's non-infrastructure assets as a basis for depreciation.



3.1.5. Chapter 4 Managing risk in the Public Sector

Responses to Consultation Questions

1. Do respondents agree that we should extend risk analysis to cover the financial ratio comparisons?

As we set out earlier, we are supportive of the adoption of an RCV approach to setting charges, particularly because of the increased transparency in setting prices, and ability for us to demonstrate our financial performance.

However, we disagree with some other claimed advantages of the RCV approach set out in chapter 4. The WIC indicates that an RCV approach will:

- Give customers greater protection against external shocks and underperformance
- Protect consumers from long-term price increases in the event Scottish Water borrows more

We do not believe these advantages follow through from the adoption of an RCV, and might indicate a mis-interpretation of a price cap regulatory approach.

These acclaimed attributes of an RCV approach might be related to the WICs intention to insulate customers from risk, by setting prices on the assumption that we have achieved both our operating and capital efficiency targets and have delivered our capital programme in full.³¹

However, as noted earlier, our prices need to be re-set periodically in line with actual costs (either up or down), i.e. allowed opex set to outturn opex, and capital expenditure cost over-runs incorporated within the RCV. The re-setting of charges in line with costs is not specific to the public sector model, but is the way in which a price cap regulatory framework is supposed to work.

The incentive properties of a price cap arise from outperforming the regulatory contract between reviews; however, at each price review prices have to be re-set in line with costs.

Limitations on Debt

WIC states our “budgetary constraints are not truly tight, given that we can seek to use contingency margins within the public expenditure”. In response to his concern, the WIC proposes to set tighter limits on our ability to borrow.

There are no specific details set out in the consultation document and we raise this as an area on which clarification is required. We will reserve any detailed comment until the WIC publishes the full proposal.

Risk Modelling

The WIC’s proposals do not include the full range of risks to which we are exposed to. Understanding these risks (and ensuring revenue proposals are consistent with managing these risks) protects services and customer interests.

We therefore suggest that the risk modelling is undertaken by WIC against the full set of risks, including risk-mitigation opportunities, e.g. IDOK procedures. We will submit to WIC separately a document setting out the range and magnitude of our risk exposures along with our second draft business plan. However, the broad risk categories comprise:

- Macroeconomic factors, e.g. inflation and interest rates

³⁰ WIC (2004) *ibid.* p50.

³¹ WIC (2004) *ibid.* p50.



- Input price risks
- Demand and revenue risks
- Bad debt
- Changes in governmental charges, e.g. SEPA charges
- Capital expenditure risks, e.g. from current and new obligations

We are undertaking our own in-house financial modelling regarding these risk parameters. This will enable us to understand the risks that we and our customers face. For those risks that present significant exposure and are not covered as a relevant changes in circumstance (RCC), we shall propose that these dealt with through notified items (NI).

We therefore encourage the WIC to extend his risk analysis to cover the full set of risks.

We agree with the WIC's proposal to extend the risk analysis to incorporate the financial ratios used by Ofwat. We note that Ofwat sets out corresponding *minimum* ratios that companies require to finance their activities (see table 4.1 below). However, we believe that the comparator approach should be based on central values rather than minimum threshold values.

Table 4.2
Financeability Ratios

Ratio	Minimum Values
Cash interest cover (FFO: gross interest)	3x
Adjusted cash interest cover (FFO less capital charges: gross interest)	1.6x
Adjusted cash interest cover (FFO less capital maintenance expenditure: gross interest)	2x
Funds from operations: debt	>13%
Retained cash-flow:debt	>7%
Gearing (net debt: RCV)	<65%

Source: Ofwat (2004) "Future water and sewerage charges 2005-2010, Draft Determinations", p198.

Our modelling facilitates an analysis of a wide-range of risks, using Monte Carlo techniques, and predicts the range of possible financial outcomes against key financial criteria. We believe that this represents a comprehensive approach to ensuring our financial robustness, and ensuring continuity of services to customers.

We will share our risk analysis and risk model with the WIC, and set out the required financial ratios. We believe that the WIC should adopt such a tool for analysing whether prospective revenue proposals are consistent with a reasonable level of risk.

Summary of key response messages

We agree that the risk analysis should be extended to cover financial ratios used by Ofwat.

We also believe that the risk modelling should be extended to cover the full ambit of risks faced by us.

2. Do respondents agree that access to borrowing should require Scottish Water to conform to the same disciplines and control that apply in the private sector?

The consultation document does not include any specific details regarding access to borrowing, and therefore we reserve any detailed comment until the WIC publishes his proposal.



3. Do respondents agree that customers should not pay for a failure to meet agreed targets?

To ensure against debt spirals, our prices need to be re-set periodically in line with actual costs, i.e. allowed opex set to outturn opex, and actual capital expenditure costs incorporated within the RCV, as is the practice in E&W.

This is not specific to the public sector model. The re-setting of prices in line with costs is common to price capped regimes.

4. Are there are other factors that we should take into account in minimising the risks to customers both now and in the future?

We believe that the risk modelling should be extended to cover the full ambit of risks faced by us. We set out the broad risk categories in our response to question 1.

3.1.6. Chapter 11 Interim Determinations and Logging up and down

Responses to Consultation Questions

1. Do stakeholders believe that there should be a process to adjust prices during a regulatory control period? If so, should we seek to introduce a process for interim determinations?

We believe that there should be a process to adjust prices during a regulatory control period, i.e. we support the introduction of an IDOK mechanism, to address unforeseen factors at the time of setting prices.

We believe that IDOK and logging mechanisms constitute key aspects of a robust regulatory framework. Formalised and transparent procedures will mitigate the risk of us failing to meet our investment obligations because of unforeseen risks, improve confidence in the regulatory regime, and will facilitate better monitoring of our performance against the regulatory contract.

We will respond in more detail to the WIC's proposals when these are set out in his draft determinations.

2. Do stakeholders believe that it is appropriate to adjust prices in the next regulatory control period to reflect actual outcomes in the previous period? If so, should we seek to introduce a similar process to Ofwat's logging up and down?

We believe that it is appropriate to adjust prices in the next regulatory control period to reflect actual outcomes in the previous period, where these have not been addressed by an IDOK. This could be done through logging up and down of cost or revenue items. We would expect the WIC to adopt a more comprehensive, transparent and predictable procedure for logging up and down than adopted by Ofwat.

We share the concerns of E&W water and sewerage companies about Ofwat's logging up/down procedures. First, we believe that Ofwat's logging up or down process still needs to be formalised in the same way as interim determinations. In particular, we would appreciate an annual statement of items to be logged up and down. Otherwise, we will face considerable regulatory uncertainty. Second, we regret that Ofwat's logging up and down process deals primarily with changes in capex, rather than systematically with capex, opex and revenue changes. Logging up and down should apply to the full range of cost and revenue risks we may face.

³² We will provide more details of our proposed notified items (NI) following our risk modelling work. This is discussed in greater detail in Section XX)



3. What factors should trigger an interim determination? At what level of materiality should an interim determination be triggered?

Interim determinations should be triggered in Scotland by the same kinds of factors as for water and sewerage companies in England and Wales, i.e. by relevant changes of circumstance and any other circumstances that have a material impact, by notified items and by a “substantial change” clause. We list relevant changes of circumstances taken into account by Ofwat in our answer to question 4.

We propose that potential problems associated with the shift to the new regulatory framework will qualify as other circumstances that would trigger an IDOK, if these are material. We believe that more notified items are warranted than the three maintained by Ofwat in the current regulatory period³³ and cited by the WIC. These will be set out in detail in our business plan. We will certainly propose notified items for changes in business rates, energy costs, pension costs and the split between wholesale and retail activities. Notified items for bad debt costs, changes in government charges and a limited number of other cost pressures may also be required. Beyond that, a shipwreck clause should be introduced to allow us to seek an interim determination if circumstances beyond our control change such that the total impact on the company amounts in NPV terms to 20% of turnover.

We would be willing to accept the same materiality threshold which Ofwat adopted for companies south of the border provided that our proposal to set the rate of return equal to our cost of capital is accepted by the WIC. We would also be content with Ofwat’s recently revised triviality threshold.³⁴

4. Are there other relevant changes in circumstance that we should consider introducing?

We believe all the relevant changes in circumstances considered by Ofwat should be introduced by the WIC. These comprise i) new legal requirements, ii) proceeds from the disposal of land, iii) a failure to achieve some output (funding for which was provided at the last price setting), iv) relative price effects. In addition, serious problems associated with the shift to the new regulatory framework for Scottish Water should be treated as changes in circumstance that might trigger an IDOK if sufficiently material.

5. What is the most effective method for consulting with customers about a potential price change?

The most effective method for consulting with customers about a potential price change and assessing their willingness to pay will involve the use of both qualitative and quantitative research activities.

It is likely that focus groups (10 - 12) will be used in the first instance, to elicit in-depth perceptions and experiences relating to current service and charges. These findings would then inform a large scale quantitative study (face to face or telephone interviewing). This second phase could take the form of a conventional questioning process, however, it is more likely that the later stage would include some form of conjoint analysis to allow for a more technically robust measurement of willingness to pay. This method would measure the amount consumers are willing to pay in a range of alternative and detailed scenarios, for example, whether people are more willing to pay specified additional sums for increased reliability, better quality or better environmental policies.

³³ Cf. Ofwat (2004), “Setting water and sewerage price limits for 2005-10: Framework and approach”, p.123. Ofwat’s current three notified items concern i) an increase in the take-up of the free meter option from their assumption in the 1999 price review, ii) the effects of the prohibition of disconnection of household supplies for non-payment of charges, iii) the cost of administering the statutory scheme for abatement of metered charges to domestic customers in vulnerable groups.

³⁴ Ofwat changed the triviality threshold for interim determinations from 2005 from a company turnover to a (more generous) service test. Under the new arrangements, a specific change will pass the threshold if its NPV is more than 1% of turnover by service (i.e. water or sewerage). Ofwat continued to allow companies to group together schemes that are linked by a common quality driver or initiative. See Ofwat (2004), “Setting water and sewerage price limits for 2005-10: Framework and approach”, p. 122.



6. Would customers prefer the regulator to revise prices downwards during a regulatory period (e.g. in the event of slow delivery of outputs) even if prices are likely to increase by a greater percentage in the future as a consequence?

Although Scottish Water does not have any research based work in this particular area, we are aware that customers and customer groups have indicated that they would value predictability and visibility of future charges, and understand how these will impact on them. This is particularly the case for businesses. A further requirement from our recent research is price stability. In this context a proposal which may reduce prices one year below the anticipated level, for them to be increased to a higher level in subsequent years may therefore not meet our understanding of customer preferences.

3.2. Issues raised in other Chapters throughout Volume 3

In this section, we discuss several further issues covered in Volume 3 of WICS consultation comprising:

- Regulatory Accounts
- Financial Modelling
- Setting price caps: the role of the tariff basket
- Standard Customers
- Connection charging regime

3.2.1. Chapter 6 Regulatory Accounts and Accounting Separation

Responses to Consultation Questions

1. Do respondents agree with our proposal to require Scottish Water to submit regulatory accounts?

We understand and agree the need for regulatory accounts for the core business.

3.2.2. Chapter 7 Financial Modelling

Responses to Consultation Questions

1. Do respondents agree with the financial assumptions that we propose to make?

Infrastructure Depreciation

We support the view that the infrastructure renewal charge (IRC) should be calculated as the average of the forecast capital expenditure on the infrastructure assets over the next 15-20 years, as set out on page 5 of volume 3.

We, therefore, do not agree with the proposal set out on page 80/81 that the IRC should equal the level of Infrastructure Renewal expenditure over each year of the regulatory control period, or the view set out on page 111 that the IRC is an average of historical renewals expenditure.

Tax

We believe the assumption about tax is incorrect. Currently we anticipate paying corporation tax in the 2006-10 period. This is caused by the high capital investment in long life and infrastructure assets resulting in lower capital allowances which are therefore insufficient to shelter the increased profits required to fund the investment programme.

Inflation

As WIC proposes to largely adopt the Ofwat approach, RPI should be used rather than CPI.

Delayed Investment



We do not agree that any delayed Q&SII investment will be delivered evenly across the 2006-10 period. It should be modelled to reflect the best available information of the likely profile over time.

2. Do respondents agree with our proposal to use the Ofwat ratios as the primary indicator of financial sustainability? If not, which ratios should we use?

In general, we believe that our financial ratios should be similar to financial ratios for water and sewerage companies in England and Wales. Indeed, we believe that the WIC should ensure that we remain compliant with all of these ratios. This includes the debt/RCV (leverage) which, we believe, is also appropriate for us. While we have no market-listed equity, we have book equity in the form of customer retained earnings.

The key problem with Ofwat's financial ratios is that they are minimum threshold rather than central case ratios. We believe it is inconsistent to ensure *central* revenue allowances are consistent with *minimum* threshold ratios.

3.2.3. Chapter 12 The role of the tariff basket

Scottish Water's View on the Role of the Tariff Basket

The WIC will calculate the weighted average price increase for measured customers in the same way as Ofwat (using one set of customer numbers and determining the impact of the percentage increases in charges on total revenue). However, it wants to calculate the weighted average price increase for unmeasured services differently. The aim is to prevent us from offsetting the effects of a customer leaving the unmeasured basket by increasing charges to other unmeasured customers.

We respond to the WIC's proposals below.

Responses to Consultation Questions

1. Do you agree that the proposed approach for the tariff basket items is appropriate for Scotland?

We have reservations about the number of tariff baskets the WIC wishes to introduce and about its favoured method for calculating the weighted average price increase for unmeasured services.

We agree that a tariff basket approach is appropriate as part of a move to a price cap regime, provided that an appropriate IdoK mechanism (which incorporates thresholds appropriate for the Scottish public sector model), is introduced to deal with differences between the price caps assumed by WICS at the time of the review and the actual Scottish Water customer base that materialises year by year during the period covered by the review.

2. Do you agree that we should introduce more tariff baskets than Ofwat?

We understand that representation of customers' positions tends to improve with an increase in the number of tariff baskets. However, we would object to additional price caps that might be associated with additional tariff baskets while the regulatory framework is new, (as are the cost allocations to customer groups).

We believe that there are two related arguments against introducing more than five price caps, arguments which the WIC itself considers: first, greater complexity would be introduced to price setting and second, our flexibility in dealing with our customers would be reduced.

We believe that in the context of the proposed changes to our regulatory framework, these arguments carry special weight and therefore outweigh other considerations in favour of greater



differentiation. Once the new regulatory framework has been established, we would be happy to reconsider the issue.

We therefore believe that additional tariff baskets should serve only as a basis of communication but not as a basis of additional price caps.

The final number of baskets will need to be reviewed once the outcome of the Principles of Charging consultation is announced in January 2005.

3. Do you agree that we should establish tariff baskets for metered water and wastewater customers with a standard connection?

Consistent with our answer to question 1, we do not support the creation of additional tariff baskets (i.e. a 9th and 10th tariff basket) for metered water and wastewater customers with a standard connection as a basis for additional price caps. We are unsure whether the introduction of that many tariff baskets would facilitate communication with customers about charges; it might be too confusing.

4. Do you agree that the proposed method for calculating the weighted average price increase is the most appropriate method to use? If not, which alternative method would be more appropriate and why?

The approach, while apparently complex, is generally appropriate. However it is unclear from the descriptions what household information should be provided at what stage. We understand the advantage of the WIC's proposal for using a method for calculating the weighted average price increase for unmeasured services which differs from Ofwat: It would protect unmeasured customers against price rises in excess of that experienced by other customers if some unmeasured customers become measured customers. However, we fear that conversely, the WIC's proposal would deprive us of any opportunity to compensate for revenue losses arising when customers with high unmeasured charges become customers with lower measured charges. Ofwat and companies were well aware of this problem in 1997 when a change of the method for calculating the weighted average price increase for unmeasured services was discussed. Ofwat initially tried to overcome the problem by changing the algebra of the relevant tariff basket, but felt eventually obliged to retain its original (and current) method.

We therefore believe that if the WIC's proposal is to be adopted, increases in the number of customers opting for meters should be a notified item.

3.2.4. Chapter 13 Standard Consumers

Responses to Consultation Questions

1. Is a target date of the end of December for announcing tariffs (which will come into effect on 1 April in the following year) acceptable, given that details about tariff baskets and their weightings will be included in the Strategic Review of Charges 2006-10?

This is acceptable to us.

2. We would like to hear your views on the proposed changes to the standard customers used in the Strategic Review of Charges 2002-06. Do you feel that our proposals will make it easier to identify the customer group represented? Are there any other changes you would like to see being made?

Our suggestions to the tables are set out below:

Table 13.3



It is suggested that the description of manufacturing should be changed to include large pharmaceuticals. A large pharmaceutical is not identifiable with the example. While there may be customers who fit into this category, large pharmaceuticals tend to have a much larger water use. Scottish Water would propose that the pharmaceutical description be removed.

We appreciate the need to keep existing standard customer data unchanged for more straight forward comparisons. However, the food manufacturers, pharmaceutical and brewery customers would typically have trade effluent. Only water supplied and sewerage volume discharged is included in the table. Trade effluent customers do have domestic strength sewerage charged at published tariffs however they would not be at these volume levels. Furthermore a 95% return rate is not representative of a brewery, which would have a lower return as most water supplied goes into the product.

Table 13.5

It is difficult to ascertain a typical Rateable Value. Rateable Values will depend on the area the property is situated. It may be useful to add an area description such as "town" or "city".

Table 13.6

This table is difficult to interpret due to the lack of units. We suggest that the units are explained.

Typically in effluent such as bakeries and distilleries there can be a COD:BOD ratio of 2:1 (although depending on several factors such as pre-treatment this can change to greater than 30:1).

The term authorisation is used to cover all documents that give permission to discharge. The term agreement was used in section 13.5.3. However, an agreement is a specific tool used under the Sewerage (Scotland) Act.

3. *We would like to hear your views on the proposed additions and changes to the standard customers, as detailed previously. Do you consider that we have achieved broad representation of the customer types? Are there any other customer types that we should add to the lists?*

Table 13.3

Table 13.3 refers to High Street newsagents. This could refer to a nationwide retailer in a city centre environment or a small business in a small town or village. A more descriptive name is recommended.

The term 'Garages' would also benefit from a more descriptive name. It is unclear whether this is a service stations or Car Sales/Repairs. Also, Car Sales/Repairs and service stations with car wash facilities can be Trade Effluent customers and not standard metered sewage customers.

4. *Are there any other customer types that are not properly represented in the revised list?*

The majority of Scottish Water's customer base has been covered by the standard customers. Customers that may still require representation would be hospitals and community organisations such as churches.



3.2.5. Chapter 15 Connection charging regime

Responses to Consultation Questions

1. Are there any lessons from England and Wales that you want to propose for application in Scotland?

We believe that it is not appropriate for our customers to pay the entire costs of expanding our asset base to allow new development. We therefore propose that developers should make a greater contribution. We understand that in England and Wales, developers pay a connection charge, an “infrastructure charge” as well as other contributions. We propose that the Scottish Executive reviews all these different contributions made by developers in England and Wales as a set with a view to applying a similar set of charges in Scotland.

Once we understand the decision made by the Executive with regard to the principles of connection charging, we will need to consider their impact on the calculation of prices.

3.2.6. Chapter 14 Wholesale and Retail Charges

We welcome the clarity brought by the Scottish Executive’s decision to establish a legal framework for retail competition in response to the requirements of the Competition Act (1998). We want to ensure that we are in position to operate effectively within this framework.

In setting retail prices, there are in fact three separate decisions to be made:

- What are the core (non-retail) functions of Scottish Water and the core (retail) functions of Scottish Water Retail?
- What costs will the WIC allow Scottish Water and Scottish Water Retail to recover through their price settlement? and
- How will the WIC change these prices over time to drive cost reductions in the two businesses?

These decisions must be made in the light of the WIC’s duties :

1. In setting prices for Scottish Water, to ensure that it has sufficient revenue to carry out its core functions at lowest reasonable overall cost (new sections 29C and 29F in the 2002 Act); and
2. In setting prices for Scottish Water Retail, ensure the operation of an orderly retail market (section 10 of the Bill) - the Scottish Executive has indicated that in order to do this, WIC will have to ensure that Scottish Water Retail has sufficient revenue to carry out its functions at lowest reasonable overall cost while it is subject to a price control.

Within this framework, prices must be set for each organisation in a way that reduces the likelihood of the WIC being challenged by third parties.

We agree with the WIC that the accounting approach is superior at least to the LRMC approach. However, we question the WIC’s assessment of the ECPR approach. We also have some concerns about the WIC’s accounting cost approach and the cross-sector comparisons it wishes to undertake to supplement this approach.

ECPR has a key advantage as it can ensure that wholesale prices cover all joint and common costs. In particular, it permits the recovery of the cost of all government-imposed social obligations in the wholesale price without the explicit quantification of these costs. Given that ECPR wholesale prices reflect total costs, entry into the retail market will occur only if it leads to lower total costs of overall supply to the customer. In other words, ECPR prevents inefficient entry. We believe that this feature of ECPR is particularly helpful in the transition process to full competition.



At that stage, it would be difficult to appropriately quantify total costs. At the same time, “hit-and-run” entry constitutes a serious risk in a still concentrated contestable market.

We also believe that there are alternative views to the WIC’s objections against the ECPR approach. These are outlined below:

1. Our assessment of alleged theoretical weaknesses
 - “Dynamic” efficiency arguments against the ECPR are less important in the Scottish water industry than elsewhere – say, in the telecommunication sector – because of the limited scope for technological change.
 - An appropriate system of price regulation (as developed by the WIC himself) would eliminate monopoly rents. Determination of an appropriate ECPR would admittedly come at some regulatory cost. However, this cost needs to be weighed against the regulatory cost associated with other methods of setting wholesale prices.
2. Our assessment of alleged practical weaknesses
 - We do not believe that we can easily overstate our fixed costs so as to change the balance between avoidable and unavoidable costs relevant to the ECPR. After all, as a regulated company all our various costs are carefully monitored.
 - The WIC does not identify any decisive obstacles to estimating the avoidable costs associated with increasing increments of the retail business. While the required information is not yet available in companies’ statutory accounts, it could be made available in the new reporting formats.
 - We do not understand why the ECPR should not be extended to a situation for which it was not perhaps initially developed but is nonetheless appropriate. In particular, we see no obstacle to applying it to a company like us, which provides wholesale services and also operates an arms-length retail subsidiary. The company could simply charge wholesale prices both to its subsidiary and to other retailers. This is indeed what the Scottish Executive seems to have had in mind when referring to “the charges levied by Scottish Water to the retail entity and all other providers”³⁵.

The accounting approach requires “bottom-up” calculation of costs involved in providing wholesale supply. Identifying and quantifying all those costs for Scottish Water is no trivial task at this stage. Agreement will first have to be reached on the scope of Scottish Water’s wholesale and retail activities. Also, regulatory accounts will have to be submitted and approved in time.

The accounting approach is also not designed to ensure cost recovery. First, costs associated with stranded or by-passed facilities may not be incorporated in the access charge. Second, the cost of our substantial social obligations – for example, associated with provision of services to assist with fire-fighting, education programmes etc – might be difficult to identify. The failure to recognise such costs could encourage inefficient entry.

We would expect some of the practical difficulties with implementing the accounting approach to diminish once the transition to a competitive retail market for non-domestic customers has been successfully completed. We also believe that the accounting approach could, with considerable effort, be refined to quantify and allow for the cost of by-passed infrastructure and the cost of social obligations. We would therefore be prepared to consider a switch from the ECPR to a refined accounting approach once the new retail market structure has sufficiently stabilised.

As regards the WIC’s “comparator approach”, we find it hard to believe that evidence from “those industries where good information is available on wholesale and retail costs” should help to determine Scottish Water’s wholesale and retail costs at a stage where there is considerable uncertainty even about which activities will remain with its wholesale business.

³⁵ Scottish Executive (2004), “Strategic Review of Water Charges: 2006-10”, printed in Appendix 3 of WIC (2004), Vol. 1, p. 197.



In short, we believe that in the light of the WIC's own criteria, an alternative approach should be used. We suggest that:

- detailed business plan proposals for Scottish Water are used to determine the wholesale charge based on the lowest reasonable overall cost that Scottish Water will incur in carrying out its core functions excluding its current retail activities but including new functions connected with the retail market and taking into account any changes to the costs of carrying out its core functions due to separation e.g. loss of scale economies in contact management;
- detailed business plan proposals for Scottish Water Retail are used to determine the retail charge based on the lowest reasonable overall cost that Scottish Water Retail will incur in carrying out its retail functions including any new functions that are not currently carried out by Scottish Water e.g. interactions with market mechanisms and taking into account any changes to the costs of carrying out its core functions due to separation e.g. duplication of IT systems.
- Where Scottish Water and Scottish Water Retail contract for the delivery of services, these agreements would be subject to the normal constraints on inter-group contracts as set out in RAG 5.03 "Transfer pricing in the water industry", which ensures amongst other things compliance with the conditions of the Competition Act.

In this way WIC can ensure its compliance with the terms of the Bill, while avoiding being challenged by third parties. Since the wholesale charge is based on the lowest reasonable overall cost of carrying out Scottish Water's functions, no third party can successfully argue that the charge should be lower. (It can be assumed that no third party will argue the charge should be higher.)

Responses to Consultation Questions

1. Do respondents consider that the criteria that we propose to use in assessing different approaches to setting wholesale prices (i.e. that the approach should be theoretically sound, practical, consistent with Scottish Executive policy and flexible are appropriate?

We find the WIC's criteria helpful. Theoretical soundness, practicality, consistency with Scottish Executive policy and flexibility are certainly to be looked at when assessing different approaches to setting our wholesale prices. We believe however that the application of these criteria can be challenging.

We therefore encourage the WIC to supplement his criteria with detailed questions guiding their application. For instance, when assessing the theoretical soundness of a proposed approach, it is important to explore whether it ensures recovery of all legitimate costs once and once only, whether it encourages an efficient level of entry etc.

We also urge the WIC to apply his criteria with sufficient sensitivity to the special circumstances of the Scottish water industry. This is particularly relevant to an assessment of the theoretical soundness of the ECPR. For its theoretical advantages (full cost recovery, encouragement of efficient entry) are particularly helpful while managing the transition to competition in SCOTTISH WATER's non-domestic retail market. One of its alleged weaknesses – retention of monopoly rents under ECPR – can be addressed by the regulatory framework, while the other – the degree of dynamic inefficiency permitted by ECPR – is a lot less important in the water industry than in industries characterised by fast technological progress.

2. What are respondents' views on the ECPR, LPMC, accounting cost and comparator approaches to the setting of wholesale prices?

We consider our alternative approach to be the best approach to determining wholesale prices in the Scottish Water industry at the next SRC.



An accounting cost approach might be acceptable at a later stage, when our total costs, including the cost of our social obligations, can be more easily quantified and when the competitive market structure has stabilised sufficiently to prevent 'hit-and-run' entry.

We agree with the WIC that the LRMC is not an appropriate approach to setting wholesale prices in the Scottish water industry.

While some general lessons might be learned from experience with access or wholesale pricing in other industries, we doubt that more specific comparisons of cost elements and retail activities across industries will help with setting appropriate wholesale prices for Scottish Water.

3. Do respondents agree that the split between wholesale and retail activities should be a notified item?

The transition to competition in the (non-domestic) retail market presents considerable regulatory challenges. As the Scottish Executive points out in its letter to the WIC³⁶, "limits on the amounts that Scottish Water can charge for selling such services to licensed retailers, including the retail entity, will be covered in the SRC and will form part of the charge limits that the Commission will set for Scottish Water". And so far, the WIC has not clearly distinguished between our wholesale and our retail business in its proposed financial models. We take this to be indicative of the regulatory strain the WIC is currently experiencing. It is therefore important that the WIC and Scottish Water are protected against potentially sub-optimal regulatory decisions covering the split between wholesale and retail activities. Scottish Water does not consider that it would be appropriate to treat this as a notified item for the following three reasons:

- Firstly, a change of this kind is unlikely to pass the "triviality" test and is almost certain to fail the "materiality" test for Scottish Water.
- Secondly, there is no ability for Scottish Water Retail to trigger an interim determination in respect of its price control – the Bill only allows for Scottish Water to do so in respect of its own determination.
- Thirdly, changes to the split between wholesale and retail activities would require movements of staff between the two organisations.

It is worth noting in addition that since Scottish Water will not have an Instrument of Appointment, it is not possible to identify "relevant changes in circumstances" (RCC).

In any case, it would be highly desirable to reach agreement with all relevant parties on the split between wholesale and retail activities in advance of these price determinations being made. Since it is envisaged that the precise definition of retail will be agreed between Scottish Water, retailers and other stakeholders (Paragraph 14.5.4) it is recommended that this process is accelerated to provide the required agreement in advance of the price settlements being made. This is a relatively simple task since it is concerned with determining activities, not their costs, which would be more controversial.

³⁶ Scottish Executive (2004), printed in Appendix 3 of WIC (2004), see esp. p. 197

4. VOLUME 4 THE SCOPE FOR OPERATING COST EFFICIENCY

4.1. Introduction

This section sets out our detailed response to the WIC's consultation paper on operating cost efficiency

4.2. Detailed Response

Our response broadly follows the order of the WIC's consultation document, although we address some smaller chapters together.

4.2.1. Chapter 2 An Introduction to Costs, Levels of Service and Benchmarking

There are no questions associated with Chapter 2, and we have no specific comments which are not addressed elsewhere.

4.2.2. Chapter 3 Types of Regulatory Frameworks

Responses to Consultation Questions

1. *Do stakeholders agree that the RPI-X framework is appropriate to the regulation of Scottish Water? If not, what alternative would you suggest and why?*

The WIC proposes to adopt an RPI-X framework for setting prices. We agree with this approach. This is because the RPI-X framework provides strong incentives to reduce costs, and consequent reductions in prices to consumers.

However, the corollary of an incentive based regime is higher cash-flow risk, and therefore the WIC should ensure that prices are set to protect customers and Scottish Water from the inherent risk of the price-setting mechanism (accentuated with the move from the current revenue cap regime to a price-cap regime).

4.2.3. Chapter 4 RPI-X Incentive Framework and Benefit Sharing

We broadly support the WIC's two key proposals regarding:

- adoption of a rolling-incentive mechanism for opex and capex
- introduction of an explicit reward mechanism for managers and employees

Responses to Consultation Questions

2. *Assuming that an RCV approach is applied in Scotland in the Strategic Review of Charges 2006-10, is a cap required on the capital expenditure to be included in the RCV?*
3. *If so, should we implement a service-capping rule, similar to the one implemented in England and Wales*

(We are responding to both questions 1 and 2 together.)

In England and Wales, Ofwat has introduced a three-step mechanism for determining whether supplementary investment (i.e. investment not agreed at the price review) should be included within the RCV.

Subsequent to this, Ofwat has also introduced a “service-capping rule”, where it proposes to limit the level of expenditure that can be disallowed to 10% of the “*total regulatory expectation of service turnover*”.³⁷

We believe that the service-capping rule is appropriate. This is because it mitigates risk to companies from undertaking high levels of supplementary investment which are subsequently not recognised by the regulator. As Ofwat noted in its consultation document, this service-capping rule is important to ensure that companies do not delay essential improvements to infrastructure because of uncertainty regarding regulatory treatment. This would increase risk to customer services.

4. *Does the RPI-X mechanism provide appropriate incentives for Scottish Water?*
5. *Are there any significant differences between private and public companies which we have not taken into account in this analysis?*
6. *Does our assessment of the importance of benefit sharing in incentivising Scottish Water to achieve efficiencies appear reasonable?*

Questions 3, 4 and 5 are interlinked and therefore we respond to these together. We believe that that the RPI-X mechanism provides appropriate incentives for Scottish Water conditional on the creation of appropriate rolling-incentive mechanisms to address the disincentives all companies face as the review approaches.

- The introduction of an explicit reward mechanism, linking pay to performance (i.e. to play the role of private equity).

However, we have a number of concerns with the way in which the rolling incentive mechanism operates in England and Wales.

First, the incremental approach benefits companies that have a declining opex profile. Companies with a lumpy profile therefore lose out.

Second, both the opex and capex mechanisms provide minimal incentive to companies. This is because of the limited period of retention (4.5 years), and because of taxation of excess returns.

Third, the outperformance mechanism only applies to opex and capex; it does not include revenue or tax outperformance, which are passed-on immediately to customers at the review period.

In conclusion, while we welcome the introduction of a rolling-incentive mechanism, we acknowledge that the incentive properties of the mechanism are relatively limited. One way to address the limited incentives associated with this regime is to apply the “outperformance multiplier” to Scottish Water; we recommend this.

We are also concerned about the incompatibility of long-term investment planning with price cap regime. Under the price-cap regime, companies have no incentive to introduce investment projects with long-term payback because the payback is not realised by the companies, and the investment cost might not be recognised by the regulator. This means that many schemes which have a positive NPV in terms of potential savings to customers are not viable for companies. One potential way to address this problem is through the WIC’s “Spend to Save” programme, and we encourage the WIC to continue with this.

³⁷ Ofwat (2003) “A further consultation on incentive mechanisms: Rewarding future out-performance and handling under-performance of regulatory expectations”, p26.

7. *What level of transparency is appropriate for management bonuses in a public sector organisation?*
8. *Should management bonuses for Scottish Water be aligned with independently assessed regulatory and customer service targets?*

Questions 7 and 8 are interlinked and therefore we are responding to these together.

We agree that the incentives paid to management in Scottish Water should be transparent for customers. We have implemented (as far as possible) the obligations place upon quoted companies with respect to publishing a member's remuneration report within our annual report. This includes details of:

- The remuneration committee and its remit;
- The general remuneration policy;
- Policy on executive members remuneration;
- Service Contracts;
- Members Remuneration;
- Long Term incentive scheme;
- Pension provisions; and,
- Provision of Cars

We also agree that management and employee incentives should be clearly linked to performance against regulatory targets. The remuneration committee has a statutory role in this respect to ensure that performance targets and remuneration are appropriate. The remuneration committee is an independent committee made up of board members which makes recommendations to the Scottish Executive on levels of executive members' remuneration and bonus schedules. No Executive Directors are involved in deciding their own remuneration.

We will also strive to publish, in advance, the incentive framework for managers and ensure that achievement of regulatory targets is a clear and discrete element of the framework.

4.2.4. Chapter 6 Establishing a baseline for operating costs

Responses to Consultation Questions

1. *When setting operating expenditure efficiency targets, do respondents agree that we should use 2003-04 as a base year for the draft determinations and 2004-05 as a base year for the final determinations?*
2. *We invite comments on the most appropriate figure to use for baseline operating expenditure in 2005-06 and the impact that different assumptions may have.*

Taking both questions together, we approve of the WIC's proposal to use the most recent year for which opex data are available when setting opex efficiency targets in the draft determinations (DD) and in the final determinations (FD). However, we would like to note a procedural and a more serious conceptual problem with the WIC's approach.

As regards procedure, the WIC proposes to amend our reported opex for exceptional and atypical costs, as well adjust for cost allocation in evaluating our comparative efficiency. We would like the opportunity to agree these adjustments with the WIC prior to the publication of the DD and FD.

There is also a potential conceptual difficulty with the WIC's approach of using 2004/05 data to calculate our comparative efficiency but then applying this efficiency target to a 2005/06 base year. This means that Scottish Water's relative efficiency improvements in the year leading up to 2005/06 are not taken into account when evaluating our comparative performance.

This inconsistency is particularly detrimental to companies like Scottish Water that are closing the gap with the frontier quickly. This implies that the WIC should therefore exercise caution when setting the efficiency target.

We encourage the WIC to use our forecast of our actual base opex in 2005/06 as provided in our draft business plan (this corresponds to WIC's "Option 5"). This is set on the basis that our operating costs for 2005/06 outturn at £265 million.

3. *What factors do stakeholders believe could result in changes in baseline operating expenditure in the period 2006-10?*

We believe that the WIC needs to widen his initial list of factors that could result in increases to baseline opex. We set out our initial list of factors below (cf. Section B7 of our draft business plan for further discussion):

- *Retail running costs*
We believe that the initial set-up of the retail market mechanism and the management of our relationship with retailers thereafter requires a substantial increase in opex.
- *Pension costs*
It is likely that Scottish Water's annual pension contributions will have to increase beyond 2005/06 levels to eliminate the current scheme deficit.
- *Rates*
Two changes will occur in 2005/06 which are likely to increase the total rates burden on Scottish Water. First, the basis of the rating of Scottish Water activities will change from a basis prescribed by the Scottish Executive to the conventional valuation method, and second, the rateable value of all properties will change as a result of the 2005 rating evaluation.
- *Increases in energy cost*
Work carried out by Oxera³⁸ has highlighted that delivered energy costs are likely to increase by circa 39% from 2003/04 to 2009/10.
- *Others*
We will try to quantify the impact of other factors such as the Landfill Tax that could impinge on our opex.

4. *Do stakeholders think that our criteria for assessing Scottish Water's claims for changes in baseline operating expenditure are sufficient?*

We appreciate that the WIC shares its criteria (listed above) for assessing claims for changes in the opex baseline with us. We accept most, if not all, of these criteria. In particular, we are concerned with WIC's first criterion which states that "*If the future changes are a result of an economy wide factor, will their impact be accounted for in national inflation indices?*"³⁹ We note that Ofwat made an off-setting adjustment to expected energy price increases to allow for the impact of changes in general price changes. While it is true that input price changes have to be measured against general price inflation, Ofwat's approach has been strongly contested by companies in England and Wales (partly because it is not clearly set out). Therefore, we encourage the WIC to be explicit about his approach to input price adjustments.

We also note that at SRC06 the WIC will be able to treat predictable and likely cost increases differently. Predictable cost increases should be incorporated into the base opex from the start of the regulatory period. Cost increases that the WIC chooses to exclude should at least be

³⁸ Oxera (2004) "How Will Electricity Costs Change up to 2009/10", Report prepared for selected water companies including Scottish Water, 6th September.

³⁹ WIC (2004) Ibid, p64.

maintained as notified items. We will set out our list of proposed notified items in response to WIC's consultation document on setting price.

4.2.5. Chapter 7 Ensuring Comparisons are Objective

Responses to Consultation Questions

1. Do respondents agree that our proposed "top-down" approach to benchmarking will provide the most appropriate method of comparing SCOTTISH WATER's performance?

We do not agree that the WIC's proposed "top-down" approach provides an appropriate method of comparing our efficiency performance with that of our peers in England and Wales. Our objections to the WIC's approach (reliance on Ofwat's questionable models, insufficient sensitivity to special factors impinging on our cost) are set out below.

We are concerned about the WIC's exclusive reliance on Ofwat's models and his own alternative model when estimating our efficiency gap. Ofwat's OLS models, and the WIC's alternative models estimate our comparative efficiency with error. We believe that a wider range of econometric model specifications should be considered to reduce the scope for estimation error. Moreover, the WIC should not interpret the "residual gap" – i.e. the distance of Scottish Water to the frontier company – as an "efficiency gap" but should allow for the considerable statistical error associated with comparative efficiency analysis.

Even if the WIC's "top-down" approach were improved, it is unlikely to be the "most appropriate method" for assessing our comparative efficiency. We believe that ideally a range of different models should be used, notably panel data models. Moreover, in all cases, extreme caution should be exercised in interpreting model residuals as indication of efficiency.

4.2.6. Chapter 8 Ofwat's approach to assessing operating cost efficiency

1. Do respondents agree that the Ofwat econometric models for operating expenditure should be extended to Scotland for the Strategic Review of Charges 2006-10? If not, what alternative method would they suggest?

We object to the primary reliance in WIC's use of Ofwat's econometric models in setting catch-up efficiency targets where the residuals are assumed to relate wholly to inefficiency.

Our overarching criticism of Ofwat's models is that their residuals are not necessarily indicative of comparative inefficiency. Recent analysis by Cubbin⁴⁰ suggests that less than 40%-50% of the estimated efficiency gap for companies in England and Wales relative to the "frontier" can be attributed to actual inefficiency rather than estimation error. Professor Cubbin's analysis reflects the following more detailed criticisms of Ofwat's model:⁴¹

First, Ofwat's opex models are generally estimated using very small datasets. This restricts the formulation of the models to quite simple cost relationships with low explanatory power, and potentially omitted variable bias.

Second, Ofwat's methodology relies on a poorly estimated "frontier". By using OLS, Ofwat estimates the cost function for the average company. By shifting the line to the frontier company no account is taken on how the cost relationship might change – the OLS methodology does not provide a best fit or valid measures of statistical robustness for the frontier.

⁴⁰ Professor John Cubbin (2004) "Assessing Ofwat's Efficiency Econometrics", A Report for Water UK. A follow-up study by Professor Cubbin for SW suggested that the Ofwat models were likely to be even less robust when applied to SW (see Professor John Cubbin (2004) "Assessing Ofwat's Efficiency Econometrics as Relating to Scottish Water", A Report for Scottish Water).

⁴¹ We also set out a more detailed critique of Ofwat's econometric models in our Draft Business Plan.

Third, Ofwat's models have been criticised for lacking technical and engineering justification⁴² and for being susceptible to inconsistencies in companies' reporting practices.

We note that an extension of these models to include Scottish Water would accentuate these problems. First, there are greater data comparability issues for us than companies in England and Wales. Second, we differ from our peers in England and Wales in a number of important respects (geography, characteristics of its customer base, legal framework, ownership status, and quality of the asset base). These factors are not incorporated within the simple OLS models, and therefore provide a bias estimate of our comparative efficiency.

Despite these well-known concerns about the robustness of these models, the WIC adopts a less cautious approach than Ofwat, in not applying a "residual adjustment" and in setting an 80% catch-up factor over 4 years.⁴³

We strongly disagree with the WIC's proposed approach. We believe the WIC should fully implement Ofwat's residual adjustment. First, we do not believe that the alternative model provides appropriate degree of surety regarding the OLS model results. We set out our concerns about the WIC's alternative model in response to the question below. Second, we note that Ofwat uses alternative models to compare with its OLS results, yet still feels that the need to accommodate a "residual adjustment". Third, we believe that the WIC's concern about a potentially large absolute adjustment to our residuals is misplaced. A greater absolute adjustment to greater absolute residuals is perfectly appropriate given that a greater absolute part of these residuals reflects statistical error as opposed to inefficiency.

On the whole, we are disappointed by the WIC's application of Ofwat's models to Scottish Water. We very much hope that the WIC will consider alternative econometric approaches to assessing comparative efficiency (notably panel data), and moreover will interpret the "residual gap" with caution.

Finally, we note that our recommendations are consistent with the position of the Competition Commission, which has also recommended the use of alternative econometric approaches, and has also expressed scepticism regarding the robustness of the OLS models.

4.2.7. Chapter 9 An alternative method to assessing operating cost efficiency

1.. *What are your views on this alternative model [developed by the WIC]?*

We believe that the WIC's alternative approach is inadequate for determining comparative efficiency. First and foremost, the alternative approach is effectively a unit cost approach, albeit with a range of unit costs considered. Unit cost models are highly sensitive to the choice of weightings of different unit costs and the criteria guiding this choice are highly subjective. Second, unit cost models fail to capture the complexity of companies' cost functions- for example through the choice and weighting of the different unit costs. Third, there is little regulatory precedent for unit cost models in establishing comparative efficiency - indeed the WIC notes the lack of robustness of the simple unit costs reported by Ofwat⁴⁵.

Finally, we observe that this approach incorporates economies of scale in estimating efficient costs. This contrasts with the OLS models which typically do not incorporate economies of scale

⁴² See, for example, Davidson (1999) "Ofwat Efficiency Assessments Using Econometric Models: A Comment" and Montgomery Watson (1999) "Water Distribution Cost Drivers".

⁴³ Furthermore, the WIC is proposing to set the catch-up rate of 80% over four-years. Combined with the potential exclusion of a residual adjustment, the WIC is proposing a much harsher interpretation of the OLS models results than Ofwat's approach.

⁴⁴

⁴⁵ See Competition Commission (2000), "Mid-Kent Water Plc", p.252, and Competition Commission (2002) "Vivendi Water UK Plc and First Aqua (JVCo) Limited", p30.

(only 2 out of 9 of the opex OLS models allow for economies of scale). We seek clarification on which functional form the WIC believes is correct.

We also question the extent to which the results of the alternative model will influence efficiency targets in the event of a material difference between the results it yields and the results of Ofwat's models. We are uncertain as to what level of material difference will be tolerated.

While we are sceptical about the WIC's alternative model, we welcome the WIC's proposal to provide a cross-check for his OLS modelling. However, we believe this should take the form of alternative econometric approaches. This approach enjoys regulatory precedent from both the Competition Commission and Ofgem. Moreover, for all approaches it is important that the "residual gap" is not simplistically interpreted as an "efficiency gap".

In section 8.4.1 WIC highlighted the development of OLS models used by Ofwat. In particular, the involvement of recognised experts and the opportunity for public scrutiny.

The details of the alternative model have not been made available to us and we are not aware whether there has been any expert involvement in their development.

We would be very concerned if an unvalidated model is used in the setting of efficiency targets, and of the risk of potential circularity where the results of OLS may be used to validate the alternative model and the results of the alternative model used to justify the OLS efficiency targets.

Irrespective of the approach to assessing comparative efficiency, the key issue is that it is important not to automatically interpret the models' residuals as indicative of inefficiency. Cost differences will reflect a number of additional factors than solely "inefficiency".

2. What other approaches to the assessment of the scope for operating efficiency would you suggest? How would these work?

As the WIC points out, the Competition Commission has encouraged the use of alternative models for assessing the scope for opex efficiencies. In the 2000 price review inquiries in the water industry, the Commission used a total service model as a cross-check on Ofwat's econometric models. This influenced the Commission's comparative opex efficiency targets for Mid Kent Water and Sutton & East Surrey Water. In the 2002 Vivendi Water UK and First Acqua merger inquiry, the Competition Commission also encouraged the use of panel data models. We believe that the WIC should follow up these particular suggestions.

We are particularly concerned about the absence of reference to panel data models. We believe that panel data models enjoy a decisive advantage over OLS models. Panel data is effectively cross-sectional analysis undertaken through time. By adding a time dimension, the number of data observations is substantially increased. This improves the robustness of the estimated models compared to OLS techniques, and facilitates the modelling of more complex (and more accurate) cost functions.

In preparing our draft Business Plan we have also estimated our opex comparative efficiency using panel data. Our estimate of Scottish Water's comparative efficiency is slightly better than that obtained using OLS models. Our results also support a significant re-ordering of companies in England in Wales compared to OLS ranking. This highlights the sensitivity of comparative efficiency analysis to the chosen modelling approach and the need to interpret all model residuals with caution. Our conclusion that an assessment of comparative efficiency is highly sensitive to the modelling approach is also supported by independent academic work on this issue.⁴⁶

⁴⁶ Mehdi Farsi and Massimo Filippino (2004), "Regulation and Measuring Cost-Efficiency with Panel Data Models: Application to Electricity Distribution Utilities" also document the sensitivity of comparative efficiency results to the model specification used and recommend the use and comparison of several models.

4.2.8. Chapter 10 Ensuring modelled results are objective and fair

1. Do you agree that it is appropriate to take into account differences in the scope of activities when determining Scottish Water's operating efficiency, relative to England and Wales? If so, which differences do you think are important to recognise and possibly take into account?

We certainly endorse the principle that material differences between Scottish Water and companies in England and Wales should be taken into account in the WIC's benchmark comparisons. We have quantified the annual costs of these special factors at approximately £54 million. The assessment is being presented to the WIC as a separate volume to our draft Business Plan and an overview forms Appendix X5 of our Draft Business Plan.

We mostly agree with the WIC's criteria for assessing special factor claims – except one. The criteria indicate that the WIC will consider “negative” special factors, i.e. reduce his estimate of our “efficient cost” where the WIC considers a cost item is lower than the norm in England and Wales. We believe Ofwat does not allow for negative special factors, and therefore this implies a harsher treatment of Scottish Water relative to companies in England and Wales.

While we advocate a careful assessment of differences between Scottish Water and companies in England and Wales, we are concerned about the WIC's discussion of differences in the scope of activities and service quality. We believe that these differences are very difficult to quantify in money terms and should not therefore be taken into account in an assessment of a company's efficiency gap.

As set out in our draft business plan, we are committed to achieving a customer service level performance consistent with current service level performance in England and Wales. We have not allowed for additional new opex to finance customer service levels. Therefore, a consistent approach is not to take into account customer service levels in setting efficiency targets – irrespective of the fact that any adjustment would be necessarily arbitrary.

In section 10.4.7 WIC indicates that he does intend to take timing differences into account when comparing the levels of service in Scotland versus England & Wales. A number of service indicators are clearly dependent on capital investment including:

- Leakage Levels
- Pressure of Water Mains
- Unplanned Interruptions
- Planned Interruptions
- Sewer Flooding
- Risk of Sewer Flooding

Companies in E&W have operated for a number of years under a regulatory regime which encouraged investment in these areas. It is understandable therefore that companies who have targeted these areas will have superior performance to one whose owners and regulators have not set such targets.

To achieve similar performance we will have to target the same performance measures and invest capital in our assets to deliver these service level improvements.

WIC has previously indicated that companies in E&W would incur lower opex in providing the same level of service as Scottish Water. We consider that in many cases the opposite is true. In particular the lack of investment in the networks results in additional opex through:

- High levels of leakage leading to additional treatment costs
- Higher levels of unplanned interruptions requiring operational interventions
- Higher levels of sewer flooding incidents leading to requiring operational clean-up interventions

2. *Do you agree that it is appropriate to take into account differences in scope of activities/levels of service when determining Scottish Water's operating efficiency, relative to England and Wales? If so, which differences do you think are important to recognise and possibly take into account?*

Cross refer to our answer to question 1 of Chapter 10.

3. *How should we assess the cost of any such differences?*

Cross refer to our answer to question 1 of Chapter 10. We also believe that reliance on information from companies in England and Wales on the cost of providing certain services or a certain quality of service is problematic. First, as the WIC acknowledges, it can be difficult to obtain sufficiently detailed breakdowns of cost for some components of this analysis. Second, the costs to Scottish Water of introducing a new kind of service or of improving service quality might be much higher than the cost incurred by continuing to provide a certain service or level of quality due to our particular operating environment (e.g. the high population sparsity of our service area).

4.2.9. Chapter 11 The scope and timeframe for improvement

Responses to Consultation Questions

1. *Do respondents agree with our proposed approach to assessing the rate at which any efficiency gap may be closed? If not, what approach would they suggest?*

The WIC's analysis of the scope for catch-up implies that we can catch-up 80% of the WIC's assessed level of inefficiency over four years. This is based on very weak regression analysis. Our own analysis demonstrates that there is no relationship between the supposed initial level of efficiency, and the rate of catch-up (this is consistent with the OLS models providing poor estimates of comparative efficiency).

First, the WIC's evidence on the rates at which efficiency gaps have been closed by companies in England and Wales is questionable. The WIC relies on regression analysis – regressing reduction in costs against initial level of efficiency – based on only ten observations (see Figure 11.1 p. 110). The line of best fit – and therefore the relationship between initial efficiency and level of cost reduction is clearly driven by one outlier. We also note that the relationship is unlikely to be linear. We therefore consider the evidence for supporting an 80% rate of catch-up (at SR02) to be weak.

WIC's Figure 11.1 which shows that companies have historically closed 85% of the efficiency gap to the frontier, differs from Figure 11.2 which indicates that companies have closed (roughly) 33% of the efficiency gap to the frontier (the slope of the line provides the implied rate of catch-up). It is not clear why these results are not consistent.

The analysis presented by the WIC in Figure 11.2. is inconsistent with our own analysis of the empirical performance of companies in England and Wales regarding closure of the "residual gap". Our analysis of three five-year rolling time periods demonstrates that there is no robust relationship between a company's initial distance to the frontier (efficiency banding) and its percentage reduction in opex over a five year period.

It should be noted that cost reductions can arise both from genuine "efficiency savings", as well as changes in input prices (if industry input prices differ from RPI). It is not clear whether the WIC has adjusted his results for movements in water sector specific input prices.

Second, as set out earlier, in the context of setting catch-up rates Professor Cubbin concluded that at most 40%-50% of the residuals of the Ofwat models used to calculate our efficiency gap really reflect relative inefficiency. In other words, the WIC's proposed approach would overestimate the efficiency gap to which it applies its catch-up rate. To compensate for the overestimate, we believe the WIC should be very cautious when setting a catch-up rate, in fact more cautious than Ofwat.

Third, if the efficiency target is too demanding, this poses a significant risk to the financial sustainability of our business and services to customers. On the other hand, if the target is too lenient this implies customers will pay too much for their services. However, as long as Scottish Water has the appropriate incentives to reduce costs, we will move towards the least cost provision of water and sewerage services irrespective of “X”, and customers will benefit from lower charges at the next review when prices are re-set in line with costs. Therefore, the risk associated with underestimating X is that customers will over-pay for a single review period, whereas the risk associated with over-estimating X is to threaten our financial sustainability and service to customers. In short, there is asymmetric risk in setting efficiency targets which implies that the WIC should be encouraged to adopt a prudent approach.

4.2.10. Chapter 12 New operating expenditure

1. Do respondents agree that the criteria that we adopted for assessing new operating expenditure at the Strategic Review of Charges 2002-06 remain appropriate for assessing such expenditure for 2006-10?

The criteria used in the 2002-06 review remain appropriate but these are not consistent with the WIC’s other proposal to include “new opex” for meeting current service standards in England and Wales.

2. Do respondents agree that there is greater scope for achieving efficiencies in new operating expenditure than in base operating expenditure?

We do not agree that there is greater scope for achieving efficiencies in new operating expenditure than in base operating expenditure.

The WIC’s argument for drawing a distinction between new operating expenditure and base operating expenditure is not strong. The argument is that companies will be able to take significantly greater advantage of new technology or the latest operational practices for new operating expenditure than for base operating expenditure. We are not aware of any evidence that would support this view.

We also note that there is little regulatory precedent for a distinction between base opex and new opex efficiencies. As far as we are aware, Ofwat is the only regulator to propose such a distinction. The Competition Commission rejected any such distinction for frontier capex efficiency in its 2000 price review inquiries in the water sector⁴⁷.

4.2.11. Chapter 13 Public private partnership financing

1. Do respondents believe that we should set an efficiency target on PPP if we can identify that it is currently a more expensive option for customers? If not, why should customers be asked to pay more?

No.

First, in the interests of our customers, where the appropriate operating circumstances prevail we will pursue opportunities relating to reducing the costs of PPP contracts within the terms of the contract, and where such an action can demonstrate sustainable savings over the remaining life(s) of the contract(s). We are also committed to passing on the benefits of any cost reductions to our customers.

However, we are concerned that the WIC will pass-through unrealised hypothetical efficiency gains- i.e. will set an efficiency target for Scottish Water even though the PFI contracts provide no

⁴⁷ Competition Commission (2000a), p. 252

mechanism for renegotiation for hypothetical efficiency gains/losses. This would not be consistent with the proposed statutory duties for the Water Industry Commission as it is unreasonable to assume that long term contracts can be renegotiated only to Scottish Water's favour.

It is important to note that the PPP contracts were competitively tendered. Therefore, there is a presumption that these contracts reflect the efficient costs for the services over the contract period. Second, customers currently benefit from the transfer of risk from the public to the private sector permitted by PPP. These factors point towards value for money for consumers. However, even if ex post our PPP contracts do not represent value for money, it would not be appropriate to set an efficiency target for PPP or to adjust the level of allowed revenue to reflect the efficient costs of the services that are being delivered through PPP, for the following reasons:

- The PPP works are not operated by Scottish Water. Their operating costs are therefore outside the managerial control of Scottish Water.
- None of the (fixed tariff) PPP contracts expire before 2021. This limits significantly our opportunities for reducing the cost associated with PPP other than through project re-financings.

We do, however, recognise the need for the WIC to monitor the performance of the PPP contracts and our administration of them, including ensuring that we realise cost savings where legally permitted and desirable. We would welcome the opportunity to share with the WIC details of how we manage these contracts to minimise costs to customers and to work with the WIC to develop an appropriate range of reporting measures within the confines of each contract.

2. Do respondents believe that our approach to looking at the value for money of PPP is appropriate?

We disagree with the WIC's two approaches to assessing the value for money provided by PPP.

It is not clear to us exactly what the WIC's suggested first approach ("to look at the prices for which shares in the PPP concessions are changing hands") would involve. We doubt that publicly available information is available on any such share prices. Furthermore, the value for customers of any such transactions would have to be assessed. Overall, we do not believe that this approach, if at all feasible, would provide indications of the value for money provided to customers from the PPP contracts.

The second approach (benchmarking to assess the scope of inefficiency) also has problems. We set out the general shortcomings of the WIC benchmarking techniques earlier. Adding to these difficulties, in this case we cannot identify the opex element associated with the PPP cost. Notwithstanding the general shortcomings of the OLS approach, in this case we have no accurate estimate of the dependent variable, the expenditure, accurately. The fee specified in our PPP contracts covers opex, capex plus a return element, and it would be difficult to separate out these different elements.

We cannot identify with certainty the opex element associated with the tariffs paid by Scottish Water given that we are purchasing a service. The fee is used to meet expenditure in relation to opex, service and repay the debt used to fund the original capex investment, fund major maintenance reserve accounts, pay taxes, meet the overhead and operating costs of the PPP company and generate an equity return. Notwithstanding the general shortcomings of the OLS approach, in this case we have no accurate estimate of the dependent variable. The WIC proposes to estimate the level of opex associated with the PPP fee, and thus use this estimate as the basis for the efficiency target. We believe that this is inappropriate because as outlined above there is no certainty as to what the levels of opex actually are and how these will change over time in relation to both local operational and wider economic issues.

Most importantly we have no available mechanism and the PFI companies have no contractual incentive, to change the contract terms to reduce the contract costs. Equally there is a strong

safeguard for us, and our customers, in that the PFI companies cannot demand price increases to reflect their costs that are greater than those forecast when the contracts were agreed.

3. If we determined that an efficiency target was appropriate, should this be implemented at the start, during, or at the end of the next regulatory period?

We do not believe that an efficiency target would be appropriate in the absence of an actual reduction in our costs (i.e. contract renegotiation). To date no projects have undergone a project re-financing not withstanding a reduction in interest rates since the contracts were first signed. This is due, mainly, to the period of time taken to achieve a degree of equilibrium within the overall operating regime for what are, in the main, very large catchments. We believe the time taken to achieve this state is principally due to the fact that in bidding for these projects the eventual winners adopted very aggressive positions in relation to risk around design, construction, operation & maintenance, flow and catchment characteristics. In the absence of significant buffer capacity both in terms of physical size and risk transfer, which would have made their bids more expensive, they have had to work harder to achieve this state of equilibrium. It also needs to be borne in mind that there are significant costs involved in unwinding existing funding arrangements, particularly where projects have been funded through the capital markets. This will impact upon when and if a contract will be re-negotiated.

4.2.12. Chapter 14 Setting the allowed level of operating costs

Responses to Consultation Questions

1. What are the views of respondents on our proposals to set a level of allowable operating cost as the target for Scottish Water in each year of the regulatory control period?

We believe that the WIC should set out an explicit frontier efficiency and catch-up target. We do not consider that WIC's assertion that we are too distant from the frontier to be either true or relevant in terms of setting efficiency targets.

More to the point, the WIC apparently proposes to set our efficiency with reference to where he expects companies in England and Wales to be in 2010. Although the WIC's approach is unclear, we infer his approach includes adoption of Ofwat's frontier efficiency target (because by definition this is the rate by which Ofwat expects the frontier company to improve over the next control period).

As set out in Section B2 of our draft Business Plan, we have severe difficulties with Ofwat's estimation of frontier efficiency. We therefore would welcome a debate about the appropriate frontier efficiency improvement for Scottish Water.

If, however, the WIC implicitly adopts the frontier target set out by Ofwat in its Draft Determination, we caution his approach in two respects. First, it is important that the WIC only adopts the "stick" element of Ofwat's "stick" plus "carrot" approach. This is because the stick element is the only element that the companies in England and Wales will consider in either accepting or rejecting (and therefore challenging at the Competition Commission) Ofwat's Determinations. By achieving the stick efficiency targets, E&W companies will earn their allowed cost of capital and be able to finance their activities. Secondly, we note that Ofwat's efficiency targets comprise one of the key areas of contention with English and Welsh companies, and there is a possibility of the efficiency targets being revised by the Competition Commission.

2. What are the views of respondents on the scope for improved efficiency at Scottish Water? It would be helpful if stakeholders could express their views either with reference to the performance of the companies in England and Wales or to Scottish Water in isolation, and give reasons.

We set out our views on the scope for improved efficiency in Section B2 of the draft business plan. In summary, our OLS modelling demonstrates we are in efficiency band B/C, with an overall comparative efficiency of 87%. This is slightly higher than average. Correcting for the systematic bias in our results (relative to the results published by Ofwat in its Draft Determination) we estimate our comparative efficiency as 90%-95%.

We adopt a catch-up target equal to the average operating expenditure target set by Ofwat in England and Wales of 1.1% p.a. for water services and 1.6% p.a. for sewerage services. This is consistent with our assessment of that we lie well within the group of England and Wales WaSCs in terms of levels of efficiency, and with our commitment to maintain parity with the efficiency of England and Wales WaSCs.

3. Do respondents have any views regarding Scottish Water's performance beyond 2010?

We expect our scope for improvement to reduce as we approach the frontier. Therefore, the scope for future efficiency targets will approach the scope for frontier efficiency.

4. Do respondents believe that it is appropriate for us to set allowable levels of operating expenditure for Scottish Water such that the corporation has an incentive to outperform? If so, what are respondents' views on the split between efficiency targets and the incentive to outperform?

It is in customers' interest for Scottish Water to have a strong incentive to out-perform targets as this creates a positive environment of achieving success.

It would be inappropriate to expect Scottish Water to close an efficiency gap at a faster rate than in England & Wales, i.e. 60% over five years or 48% over four years.

5. Should we seek to set separate levels of allowable operating expenditure for the 'wholesale' sewerage, 'wholesale' water and non-domestic retail components of Scottish Water?

We understand that there is a case for distinguishing between wholesale sewerage and wholesale water components of Scottish Water when setting opex efficiency targets given that customers pay separately for water and sewerage services.

However, we object to the WIC's proposal to set a separate opex target for our new non-core retail service for non-domestic customers. We do not believe that an opex target for this service is required given the contestability of the non-domestic retail market, as competition or the threat thereof provides incentives for cost minimisation.

If the WIC nonetheless decided to impose a non-domestic retail opex target, it would be extremely difficult to determine an appropriate target for new non-core retail service for non-domestic customers at this stage given the uncertainty surrounding the allocation of activities between the wholesale and the retail business. If the WIC nonetheless decided to impose an opex target on our new non-core retail service, we would insist on a notified item covering the allocation of activities (and cost) to this service.

4.2.13. Chapter 15 Regulating Levels of service

1. What are respondents' views on the benchmarking approach and the target setting approach?

We agree with the WIC that the two approaches are appropriate in different situations. However, we are less enthusiastic about combining them than the WIC (cf. our response to the WIC's next question).

2. What are respondents' views on our proposed refinement of the benchmarking approach to include target setting for some key areas of service?

We are confident that Ofwat's benchmarking approach provides companies in England and Wales with sufficiently strong incentives to improve service performance appropriately. The criteria used by Ofwat in its benchmarking are sensibly defined and over-performance is rewarded while under-performance severely punished by adjustments to K factors.

We are concerned however about the extension of Ofwat's benchmarking approach in its original form to Scottish Water. We believe that the special factors relevant to assessing our efficiency gap are also relevant to assessing our service quality gap. It is important that these are taken into account when benchmarking our service quality against that of its peers in England and Wales.

In any case, we do not believe that Ofwat's benchmarking approach, if it is adopted by the WIC for regulating Scottish Water's service level, needs to be supplemented by targets for some key areas of Scottish Water's service. Indeed, such targets would impose considerable risk on Scottish Water. First, they might disadvantage Scottish Water's retail subsidiary relative to new entrants in the retail market for non-domestic customers. Second, we fear that information problems might be manifested in unrealistic service targets or an unfair assessment of our performance relative to these targets.

3. Are there any targets (e.g. leakage) that are appropriate in pursuing the benchmarking approach?

We do not believe that any service targets need to be set for Scottish Water if a benchmarking approach to service regulation is adopted.

In particular, we believe the adoption of a target for leakage is unnecessary. With the incentive framework of a price cap regime, we have the incentive to move towards the "economic level of leakage" (because this level is by definition consistent with cost minimisation).

4.2.14. Chapter 16 Monitoring operating expenditure and levels of service

1. What are the respondents' views on our proposed approach to monitoring Scottish Water's performance?

We agree with the WIC's two changes to its monitoring regime for opex (the appointment of a Reporter for the water industry in Scotland and the introduction of regulatory accounts). However, as we stated earlier in our comments on Chapter 6, we are concerned about the magnitudes of the WIC's proposed adjustments to Scottish Water's reported opex for monitoring purposes.

APPENDIX A - RATE OF IMPROVEMENT IN EFFICIENCY

This appendix presents analysis of the relationship between companies' initial efficiency rankings and the subsequent change in base opex over three five-year rolling time periods.

In Figure 11.2 (p110) the WIC presents evidence on the rate of efficiency savings achieved by companies in England and Wales. The WIC assert that companies facing larger initial efficiency gaps achieved greater cost reductions in absolute terms than companies that were already close to the efficient frontier.

The WIC relies on regression analysis – regressing reduction in costs against the initial level of efficiency – based on only ten observations (see Figure 11.2 p110). The line of best fit and, therefore, the relationship between the initial level of efficiency and percentage cost reduction is clearly driven by one outlier. We also note that the relationship is unlikely to be linear.

We have attempted to replicate the WIC's analysis. Our analysis, based on analysis of companies' initial efficiency rankings and the subsequent change in base opex over three five-year rolling time periods, demonstrates that there is no robust relationship between a company's initial distance to the frontier and its reduction in opex over a five year period.

A.1. Data Sources

For both, water and sewerage service we used "base opex" (based on 1997/98 service level) to derive the percentage change in opex over a five-year rolling period. Using base opex, and thus a constant level of service, allows us to control for changes in the provision of services over the five-year period.

It should be noted that cost reductions can arise both from genuine "efficiency savings", as well as changes in input prices (if industry input prices differ from RPI). It is not clear whether the WIC has adjusted his results for movements in water sector specific input prices. In our analysis we adjust end-of period base opex numbers by the retail price index, excluding mortgages (RPIX), but do not take water sector specific input prices into account.

We approximated companies' starting level of efficiency (cost as a percentage of the frontier company) by using published information on companies' historic efficiency bandings.⁴⁸ For instance, companies in band A are between 0% to 5%, and on average 2.5% off the benchmark; given that the frontier company is 100% cost efficient, companies in band A are on average 102.6% ($100\%/(100\%-2.5\%)$) efficient - that is, they would have to reduce their costs (on average) by 2.56% in order to catch-up with the efficient frontier. The corresponding figures for bands B, C, D and E are 111.1%, 125.0%, 142.9%, and 166.7% respectively.⁴⁹

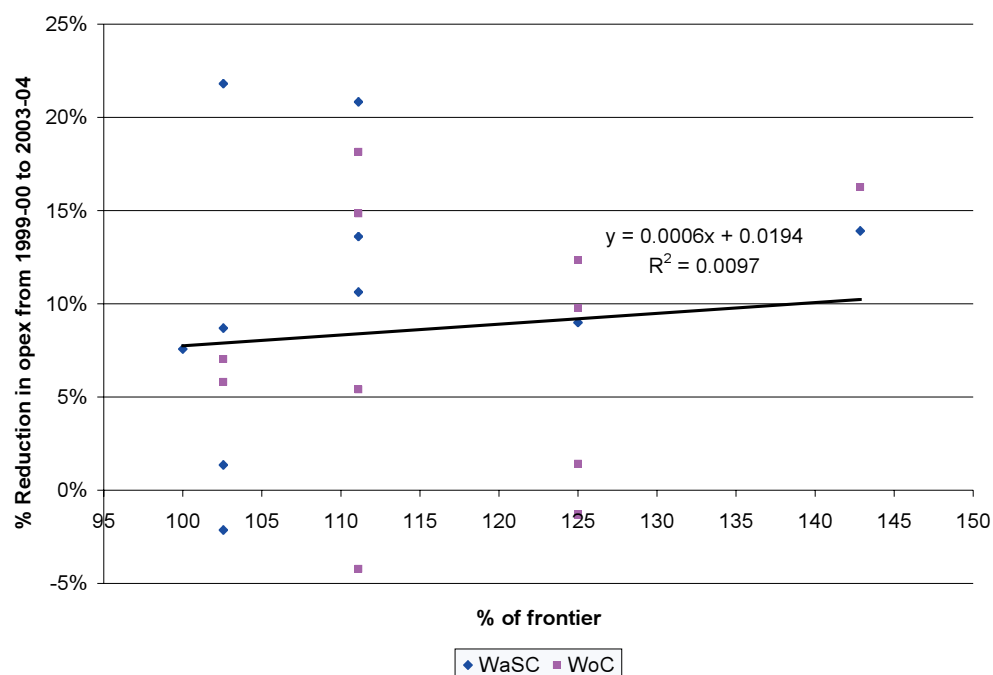
A.2. Results

Figure 4.1 depicts the results of our analysis for the most recent five-year time period (1999/00 – 2003/04) for water service opex.

⁴⁸ Company bandings for each year are reported in Ofwat "Water and sewerage service unit costs and relative efficiency", published annually since 1996/97.

⁴⁹ Note, companies in band E are 35% and more off benchmark. We made the assumption that companies in band E are on average 40% off the benchmark; this assumption is however immaterial to our conclusion of the analysis.

Figure 4.1
Reduction in Water Service Operating Expenditure for a given Level of Efficiency

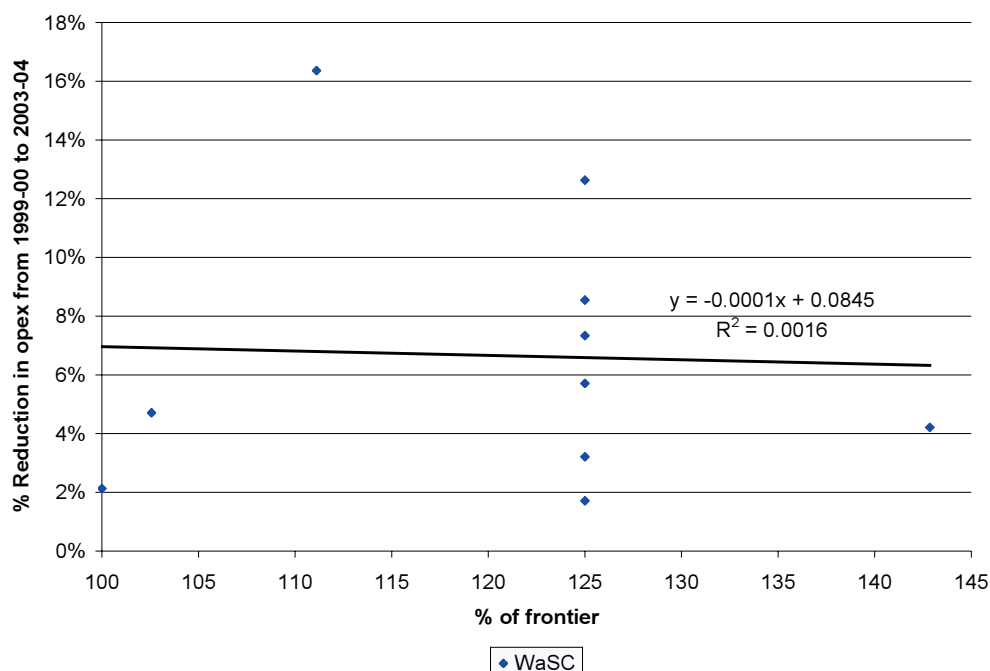


Source: NERA analysis of 2003/04 June Return data.

Figure 4.1 shows that there is no empirical evidence of a systematic relationship between the level of a company's inefficiency and its percentage reduction in water service opex over 1999/00 – 2003/04. The slope of the line of best fit is equivalent to the rate of catch-up. The positive slope, signalling a marginal positive catch-up rate, is, however, statistically not significantly different from zero. The small value of R^2 signals that the level of companies' efficiency cannot explain the observed variation in companies' opex reduction over the period from 1999/04 – 2003/04. For instance, although both in band B in 1999/00, Anglian Water reduced its base opex by 22% over 1999/00 – 2003/04 while Dee Valley Water increased real water base opex by 4% in the same period.

Figure 1.2 depicts the relationship between sewerage service base opex reduction and the initial level of efficiency for the same five-year period.

Figure 1.2
Reduction in Sewerage Service Operating Expenditure for a given Level of Efficiency



Source: NERA analysis of 2003/04 June Return data.

For sewerage service opex we get a similar result as for water service opex: there is no empirical evidence of a relationship between cost reduction and the companies' efficiency gap. The slope of the line of best fit is statistically insignificant and the variation in companies' cost reduction over 1999/00 – 2003/04 cannot be explained by the initial level of efficiency. The variation in observed cost reduction is very large: Anglian Water reduced sewerage operating expenditure by 13% over the five-year period, while United Utilities reduced its sewerage opex by 2% over the same period, although both companies were in efficiency band C in 1999/00.

Likewise, the analysis of the 1998/99 – 2002/03, and 1997/98 – 2001/02 (not presented here) five-year periods show the same results for water and sewerage service of no relationship between the initial level of efficiency and reduction in base opex; the slopes of the line of best fit, signalling catch-up rates over the five-year period, are statistically insignificant and the initial level of efficiency cannot explain the observed variation in base opex reduction (low R^2).

Overall, there is no empirical evidence that less efficient companies systematically catch-up more of the efficiency gap than more efficient companies. In Appendix X10 of our DBP we show our analysis of the average closure of the assessed efficiency gap by English and Welsh companies (based on analysis of companies' average efficiency band amelioration over three four-year rolling periods) is 17% and 8% for water and sewerage service opex, respectively.⁵⁰

⁵⁰ This is higher than the average reduction in base opex over the most recent five-year period (1999/00 – 2003/04), shown above.

Our Ref: JM/MM/CL
ORG13-A1481

Your Ref:

Katherine Russell
The Water Industry Commissioner for Scotland
Ochil House
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FK7 7XE

Directorate of
Environmental and
Organisational Strategy

If telephoning ask for:
Martin Marsden
29 October 2004

Dear Ms Russell

OUR WORK IN REGULATING THE SCOTTISH WATER INDUSTRY
VOLUME 1: SETTING OUT A CLEAR FRAMEWORK FOR THE STRATEGIC REVIEW OF CHARGES
2006-10
VOLUME 2: BACKGROUND TO AND FRAMEWORK FOR THE STRATEGIC REVIEW OF CHARGES
2006-10
VOLUME 3: THE CALCULATION OF PRICES
VOLUME 4: THE SCOPE FOR OPERATING COST EFFICIENCY

Thank you for providing the Scottish Environment Protection Agency (SEPA) with the opportunity to comment on the above consultation documents.

SEPA has restricted its comments to those aspects of the consultation documents, Volumes 1 to 4, where the proposed principles are of relevance to SEPA's duties.

SEPA notes that it is proposed to appoint a Reporter for the water industry, independent of Scottish Water, to audit the information submissions and investment programme and highlight any issues or inaccuracies. SEPA welcomes the proposals that will allow us to ask the Reporter to examine Scottish Water's performance in areas relevant to our statutory duties.

As part of the business plan submissions SEPA considers that the operational implications of environmental regulations, such as the control of dangerous substances to sewers and [river basin management planning](#) issues, should be included. SEPA currently has input into the multi-stakeholder Quality and Standards process to determine the environmental objectives of Scottish Water's capital investment programme. However, SEPA is pleased that the appointment of the Reporter will also enable SEPA to request the Reporter's examination of Scottish Water's strategy for such operational implications of environmental regulations that may have relevance to SEPA's duties.

SEPA welcomes proposals that [part of the Strategic Review will seek to establish that Scottish Water has a clear strategy in place for managing water resources in the long term](#) and will take into account factors such as; [efficient use of water](#), [limits on water extraction](#), and [future supply availability](#).

As an additional point, SEPA considers that an interim determination of prices limits should be triggered by any new or revised environmental requirements, confirmed as a necessary change to be enforced by SEPA. SEPA views this as necessary, given the time period over which price limits will be fixed, to ensure Scottish Water has adequate revenue to implement new environmental quality obligations.

As a public body committed to openness and transparency, SEPA feels it is appropriate that this response be placed on the public record. If you require further clarification on any aspect of this correspondence, please contact Martin Marsden, Water Unit Manager, SEPA Corporate Office, at the address shown below.

Yours faithfully



Janice Milne
Acting Environmental Development Manager

5 November 2004

Katherine Russell
Director of Corporate Affairs
Water Industry Commissioner for Scotland
Ochil House
Stirling
FK7 7XE

Dear Katherine

Strategic review of charges 2006-10, Volumes 3 and 4

This letter provides Water UK's comments on two papers issued by the Water Industry Commissioner; on the calculation of prices and the scope for efficiency.

We are pleased that you have explicitly committed yourselves to applying the BRTF better regulation principles as this greatly improves the quality of the regulatory process and the outcomes of that process.

Given the importance of the matters being considered, we were disappointed that only a five week consultation period was allowed. Cabinet Office guidance indicates that 12 weeks is the minimum period that should be used.

We have addressed some but not all of the questions that you have posed, mainly those put forward in paper 3. In the following comments we have referred you to papers available on our website, if you have any difficulty in finding these we are happy to supply hard copies.

Price setting and RCV

It seems sensible to move to a framework similar to that in England and Wales based on regulatory capital values.

Continued...

2

However the new framework of itself will not facilitate comparisons with England and Wales [question 9]. For example, if Scottish Water's RCV is based on MEA and debt is total historic debt for Scotland then financial comparisons with England and Wales still remain difficult. MEA south of the border is much greater than RCV and the debt writeoff at privatisation would have to be added back in – England and Wales companies' gearing could fall to say 20% from the 60% in Ofwat's current figuring.

This problem could be avoided and comparability improved if you adopted the “comparator” approach ie started from an initial RCV similar to comparator companies in England and Wales [question 16].

Allowed rate of return

The WIC analysis focuses on the cost of finance rather than the cost of capital. However, for consistency with economic principles, and also with HM Treasury guidance on required rates of return, the WIC should use the cost of capital – the rate at which investors would be willing to supply funds to Scottish Water given the fundamentals of the business. You quote Treasury guidance in paper 3 (page 105) but it is not clear why you have decided not to follow that guidance.

A starting point would be the cost of capital for the English and Welsh companies, assessed at around 5.5% by NERA in its latest study for Water UK. Ofwat's assessment of 5.1% is clearly too low as evidenced by the financeability adjustments applied in draft determinations to all water and sewerage companies by 2010 [question 17].

Presumably the WIC's position is based on the view that allowing more than the cost of finance would leave Scottish Water with too much cash in hand. However any surplus cash could be distributed to the owner [the government], who could then decide whether to reinvest in Scottish Water or use the funds elsewhere [this could include customer rebates]. The problem of embedded debt would also become less of an issue requiring specific adjustments by the regulator [question 19].

This approach would assist comparisons with England and Wales and also ensure that prices are set at the right level to achieve allocative efficiency. It would also ensure that Scotland is not in breach of the Water Framework Directive Article 9 requirement to apply cost recovery.

Continued...

3

You also discuss the separation of Scottish Water into wholesale and retail segments. What rate of return would be allowed for the retail segment? In principle this should be a commercial rate based on outside evidence taking into account the risk inter alia of losing the business, with the methodology discussed above only applied to the wholesale segment?

Risk

We could not see where the "cost of risk" was allowed in the new framework, especially if returns are set at effectively the interest rate on borrowings. Is it the notional return on the equity stake that is the reward for risk, and is there an equity cushion somewhere in the balance sheet as for Glas? The need to make proper allowance for risk reinforces the case for using the cost of capital rather than the cost of finance.

In framing financial indicators [questions 5 and 14] it would be important for you to take account of Scottish Water's special circumstances and how potential investors would regard this entity – Ofwat ratios do not necessarily apply. It would also be important to test how sensitive these indicators are to downside assumptions about risks, not just central assumptions – the approach that Ofwat has used in framing draft determinations for companies in England and Wales. The Liquid Risk model developed by NERA for use by Water UK members provides the tool for the job.

RPI incentive framework [question 4 of paper 4]

For England and Wales companies incentives are rather limited. Broadly speaking with opex 80% goes to the customer and 20% to the company. A minor adjustment has been made by Ofwat to incentives in this price review – the out-performance multiplier [MD187].

In the case of capital spending incentives are unbalanced with sharing of out performance for underspends but no sharing of overspends unless these are huge – above 10% of turnover. In framing incentives for Scottish Water you need to consider size and balance and you should not necessarily follow what Ofwat do.

We also understand that you are proposing to use CPI rather than RPI. We do not think that you should make this change unilaterally, any such proposed change should be consulted upon by regulators jointly for all utility sectors.

Continued...

4

In addition such a change would alter the balance of risk and reduce comparability with the companies in England and Wales.

Econometric Modelling

Water UK has commissioned two consultants to review the reliability of Ofwat's modelling work; Professor Weyman Jones and Professor Cubbin. Their reports are to be found on Water UK's website.

The key issue is how much of the residual from the modelling can be attributed to inefficiency, and how much is error of measurement, error of sampling or error of modelling. Ofwat only make a 10-20% allowance for error but Professor Cubbin took the view that the allowance should be much higher, around 50-60% for the opex models and 65-75% for the capital maintenance models.

Professor Weyman Jones concluded that the more inaccurate the model, the more likely it would generate high residuals and thus higher [but inappropriate] efficiency targets. Furthermore separate treatment of opex and capex in modeling can generate infeasible targets, because of potential substitution between opex and capex.

It is important therefore that you should not apply Ofwat modelling work uncritically in framing an efficiency target for Scottish Water, and you should make explicit and transparent adjustments for error. Other modeling approaches should also be examined as a further test of reliability.

There is also an issue of achievability, and over what time period. The paper refers to a previous analysis of what England and Wales companies achieved in terms of catchup over their "best five year period". It would be more sensible to base your judgment on the full evidence on catchup since 1989, rather than a biased fragment of the evidence – which can only overstate the likely achievability.

Interim determinations and logging up and down

We agree that a process to adjust prices within a regulatory control period should be introduced [question 21], and that you should consider both interim determinations and logging up and down [question 22]. That said, you should not follow the Ofwat approaches slavishly.

Continued...

5

We have had extensive discussions with Ofwat on improving the mechanisms but they still remain flawed, and will need to be revisited after the current price review is complete [see MD194]. The letter attached sets out some of our concerns – in particular we propose a more comprehensive, transparent and predictable procedure for logging up and down.

The list of relevant changes of circumstance and notified items should be considered carefully and should be clarified in advance with Scottish Water. Ofwat has developed such a list and shared it with Water UK, it is a long list given the range of uncertainties affecting the industry at present.

It is not clear whether you will also be preparing a change protocol to deal with changes in quality obligations. If so, this document and the underlying process should be transparent and consulted on in advance, and agreed with the quality regulators.

Public Private Partnerships –

Applying efficiency targets to PPP schemes appears to be in breach of the BRTF principles to which you are committed - consistency [and predictability] - whatever the legalities around these long term contracts. We are surprised that you are seeking to persuade Scottish Water to review these contracts. The effect can only be to discourage potential suppliers and to raise the future cost of capital by adding to the regulatory risk around these contracts. It also appears that you are adding a “hidden” extra element to Scottish Water’s own efficiency target if in practice Scottish Water cannot renegotiate these contracts.

Yours sincerely



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The Water Industry Commissioner
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Your Ref:
Our Ref: PW/jes/161104

16th November 2004

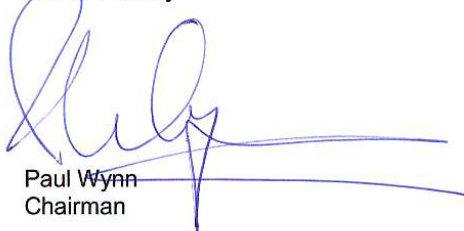
Dear Sir

**Our Work in Regulating the Scottish Water Industry
The Scope for Operating Cost Efficiency, Volume 4**

Please find attached the response on behalf of AES to the above titled paper, more specifically to Section 4, Chapter 13 – Public Private Partnership Financing, where we believe AES can comment from a position of direct experience. We apologise for the late submission of this response and hope that this does not cause any inconvenience.

If you require any further clarification to our response, please do not hesitate to contact the undersigned.

Yours faithfully



Paul Wynn
Chairman

Enc

18 NOV 2004

**Response from Aberdeen Environmental Services to the Water Industry
Commissioner of Scotland's Paper – Our Work in Regulating the Scottish Water
Industry – The Scope for Operating Cost Efficiency, Volume 4, Section 4, Chapter
13, Public Private Partnership Financing**

Aberdeen Environmental Services, as a PPP contractor to Scottish Water, has read with interest Section 4, Chapter 13 of the Water Industry Commissioner's (WIC's) Report and is pleased to note that the WIC has recognised the significant benefits to customers that have been achieved through the PPP contract process, namely:-

- The provision of improved waste water treatment to secondary and tertiary levels fully compliant with EU standards.
- Quicker delivery of the service.
- More cost effective construction and delivery of the service.
- Charges that are variable and reflect the annual costs of the service used.

It is also pleasing to note that the WIC recognises that customers have benefited from transfer of risk to the consortia, including design, construction and operating cost risk and that the charges paid by customers are lower than they would otherwise have been. As is noted, the projects were bid on an extremely competitive basis and the bids were evaluated on a whole life cost basis. This is particularly important since bidders had to apply the most cost-efficient and innovative design approaches including automation where appropriate and asset optimisation (e.g. sewerage out unnecessary assets) in order to have the lowest whole life cost and win the bids. These bids were based upon the experiences of English water utilities by applying the same techniques that have been used to achieve front line waste water treatment operational and capital efficiencies in England.

The Public Private Partnership contracts that now exist are whole life 25 year contracts in which a contractor earns a return for providing the service and insulating Scottish Water's customers from the risks associated with designing, building, financing and operating waste water plants. For example, the current upward operating cost pressures arising from power increases and the knock-on effects on chemicals pricing are all being absorbed by the contractors. It is also important to note that the contractors are only paid when the assets are achieving their necessary discharge consents which is, of course, not the case for customers served by plants not operating under a PPP regime in England, Wales and other areas of Scotland.

Mention is made of the potential for these projects to be refinanced in light of current interest costs. It is important to note that the contracts already provide for the possibility of refinancing and the sharing of benefits between Scottish Water and its customers and the contractors in the event that such a refinancing occurs. If circumstances arose that meant refinancing was a sensible proposition, bearing in mind the refinancing costs and the current risk profile of the projects, then inevitably all parties would be interested in undertaking such refinancing because there would be benefits to all. These aspects were anticipated at the time when the PPP contracts were agreed and in many cases are already incorporated into the relevant arrangements.

Imposing an efficiency target on one party to the contract will make no difference to when and if any such refinancing takes place.

In summary, therefore, and in response to the questions posed for consultation in Section 13.9 we respectfully offer the following:-

1. We do not believe that the imposition of an efficiency target on Scottish Water for PPP would have any impact for the following reasons. Firstly, the efficiency of operating costs is already built into the plant designs on a whole life basis taking account of risks and capital maintenance requirements. Further future operational efficiencies, if any, would likely require additional capex which would be funded by the consortia if they believed there were economic benefits to them. Consequently, Scottish Water and its customers can be confident that high efficiency will be maintained throughout the contract for their further subsequent benefit. Secondly, In the event that refinancing makes business sense then all parties to the contracts will reach that conclusion and will share in the benefits without the need for any external influence. This is already recognised in the existing PPP arrangements. Finally, since indexation does not apply full to some capital and financing aspects of the tariff, annual charges to the client often fall in real terms over the contract period, thereby benefiting Scottish Water and its customers.
2. AES operates its contracts on the basis of experience gained within its shareholder organisations and, therefore, is confident that it has built and is operating the Aberdeen contract in a most efficient manner. PPP has been and continues to be good value for the customers of Scottish Water. In particular, the approach adopted to assess the value for money of PPP does not appear to take into account any of the original construction cost savings. Rather, it assumes that Scottish Water's predecessor bodies would have been equally efficient in the design and construction phases, which appears not to be borne out by the examples quoted in 13.5. Equally, it is unclear how the Average Weighted Cost of Capital (WACC) has been calculated. Indeed, at the time when the PPP contracts were being negotiated, WACC's may well have been higher.
3. None of the above responses would be affected by the timing of the introduction of an efficiency target.

The natural place to live

Your Ref:

09 NOV 2004

Our Ref: DP/INU2/ KY/SW

5 November 2004

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Dear Ms Russell

RESPONSE TO CONSULTATION: "OUR WORK IN REGULATING THE SCOTTISH WATER INDUSTRY: THE SCOPE FOR OPERATING COST EFFICIENCY"

Thank you for giving Dumfries and Galloway Council the opportunity to respond to the above document.

I would wish to highlight the following general points :-

The Dumfries and Galloway Council area has significant issues regarding constraints to Development (see Attached document submitted to recent Scottish Executive Consultations). These problems have been faced under the Quality and Standards II programme and as such these difficulties partly arise from the approach that is being adopted to Water Services Investment including its Regulation.

There is a need to consider Scottish Water's infrastructure in the wider perspective of the impact on the economy if development is prohibited. In this context efficiency savings may not represent best value for Scotland as a whole.

I hope you find the above comments raised by Dumfries and Galloway Council useful and will give them further consideration

Yours sincerely

pp A. Maxwell

Alistair M Speedie
Group Manager – Strategic Planning and Transportation

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08 NOV 2004

The Water Industry Commissioner for Scotland,
Ochil House
Springkerse Business Park
STIRLING FK7 7XE

Thursday 4th November 2004

Dear Commissioner

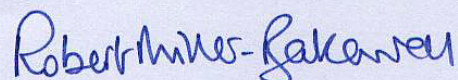
Regulating Scottish Water

I am responding to your comprehensive consultation exercise on the future obligations and financing of Scottish Water. I shall restrict my comments to the following four key issues:

- **Methodology** The concept of RPI-X regulation is well established and proven in the UK for infrastructure intense utilities. It works well for the water industry in England & Wales, and has sufficient flexibility to allow the Water Commissioner to adjust the econometric assumptions to adequately reflect the special circumstances of Scotland. To consider alternatives would trigger a wholly unnecessary debate about their relative merits, and would almost certainly delay the charges review process. Scottish Water should be benchmarked against its ten counterparts in England & Wales – these represent a very reliable pool of industry performance data.
- **Infrastructure Connection Charges** OFWAT has set infrastructure connection charges at £239 (in 2002/03 prices) for both water and wastewater services in 2005/06. There's no obvious reason why these charges should any different in Scotland. Nor is there any rational argument to support their linkage to council tax bands. Overall, if the objective is to follow the OFWAT template then such deviancy would be rather strange. Or, is it intended to be the 21st century equivalent of the infamous "windows" tax?

- **Promotion Of Water Conservation** UK government policy is to promote water conservation, not least through meters. Indeed DEFRA minister Elliot Morley MP was recently arguing for dramatic increases in the numbers of meters in England & Wales. Does Scotland have an “opt out” clause in this context? It shouldn’t, in my opinion.
- **PPPs** It may well be the case that the nine PPPs now offer less value for customers than when originally negotiated. However, seeking to renegotiate their terms would, I believe, have much wider ramifications for the future participation of private capital in public infrastructure, particularly in Scotland. Would the NPV saved for the customers of Scottish Water be even a small fraction of the extra costs to Scotland on future infrastructure projects?

Yours sincerely



Robert Miller-Bakewell



Making all consumers matter

Katherine Russell
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Graeme Millar MRPharmS
Chairman

Martyn Evans
Director pmwicoc041

28 October 2004

Dear Katherine

THE SCOPE FOR OPERATING COST EFFICIENCY

This is a very brief response to the Executive Summary document of the above consultation. We are not qualified to comment on the detailed economic regulatory and modelling options in the paper. However, we would like to respond to some consultation questions where there is a need for the consumer interest to be highlighted in this aspect of the Strategic Review of Charges.

Question 6 Does our assessment of the importance of benefit sharing in providing incentives to Scottish Water to achieve efficiencies seem reasonable?

We recognise that customers may benefit from incentivised performance. However, in the publicly-funded Scottish water industry, customers are shareholders too. They have every right to benefit from outperformance by seeing lower charges. Striking the right balance between the two will be vital. We agree that the emphasis should be on encouraging exceptional performance and we support the proposals that this should be developed within a transparent framework placed within the public domain.

However, the paper is unclear about whether customers will receive any benefits. Page 5 initially mentions that, after a period of five years, the benefits of outperformance will be passed to customers. But bottom of the page stops short of including this and appears to give the impression that Scottish Water will retain all benefits of outperformance. We would be concerned if this was the case and

would welcome further clarification on the extent to which customers will receive any benefits and within what timescale.

Question 17 Do you agree that it is appropriate to take into account differences in the scope of activities when determining Scottish Water's operating efficiency, relative to England and Wales?

In the absence of any other comparator, we believe it to be essential for Scottish Water's efficiency to be benchmarked relative to companies in England and Wales. The approach set out in the paper to reflect the different scope of activities seem reasonable and we agree that Scottish Water should be required to demonstrate the evidence for any reduction in efficiency targets, based on the scope of activity relative to England and Wales.

Question 31 What are respondents' views on the benchmarking approach and the target setting approach?

We support these approaches.

Question 34 What are respondents' views on our proposed approach to monitoring Scottish Water's performance?

We believe that the framework for monitoring levels of service should include the following:

- A programme of customer research
- Consultation with stakeholders
- Consultation with the Water Customer Consultation Panels
- Audit of complaints handling by Scottish Water and audit of WIC complaints data about Scottish Water. In the event of the complaints handling function being transferred to another body it will be vital to ensure that appropriate liaison mechanisms are developed so that this information on the customer experience is fed into the regulatory process.

I hope these comments are helpful. Please get in touch if you have any queries.

Yours Sincerely

Trisha

Trisha McAuley
HEAD OF CORPORATE RESOURCES

Responses to Volume 5

QUESTIONS for CONSULTATION

Our Work In Regulating The Scottish Water Industry Volume 5:

The Scope for Capital Expenditure Efficiency

GENERAL COMMENTS:

1. The presentation of what is sometimes quite dense material is outstanding. In each chapter, the reader is told what is going to be presented, the material is then presented, and at the end it is summarised. Throughout the volume there is cross-referencing of topics, and the whole procedure is encapsulated in a diagrammatic framework, (p.120). No reader can possibly complain that they did not understand the argument, nor that there was any ambiguity about it.

2. I understand that there is a strong probability that Scottish Water will shortly be seeking additional funds because alleged flaws in the wording of early PPP contracts mean that the cost of the further investment required to correct odour and other problems arising in some of these capital projects may fall on Scottish Water, and not on the contractors. If this were in fact to happen, it would represent an additional financial burden on customers. It therefore should be a matter of concern to WICS.

I hope that before WICS authorises the payment of any such additional funds it will satisfy itself that the relevant contracts are indeed flawed. This would require, in my opinion, obtaining independent legal advice. Indeed, to avoid customers losing out again, there should be a process in place whereby WICS can scrutinise any such claims which might arise in the future.

RESPONSE TO SPECIFIC QUESTIONS:

Chap 2:

Q1. Yes. Unless the investment programme is defined in detail at the project level, (with the obvious exception of very small projects), then proper accountability is impossible, as the experience of Q&S 2 has shown.

Q2. Since we are talking about public money, and since no question of commercial confidentiality arises because SW is a monopoly, the programme should be placed in the public domain.

Chap 3:

Q3. Yes

Q4. Yes

Chap 4:

Q5. Yes

Q6. No

Chap 5:

Q7. As far as the cost-benefit analyses for water are concerned, one of the problems must be that it may be difficult to evaluate the benefits in the same terms as the costs.

SW admit to an average Scottish leakage rate of 43%, so the true figure may be over 50%. Where there is extensive leakage, customers are disadvantaged twice. To achieve a given flow of water to final use, the capacity of treatment plant will be larger than necessary (higher capital expenditure), while the operating costs per unit of water will also be higher.

If 50% is the average loss of water by leakage, there must be areas of the country where water supplies are limited. In those areas the costs of leakage-reducing measures are likely to be less than the value of the water saved. Hence it may be appropriate to set targets to achieve a reduction in leakage in such locations.

For wastewater, anecdotal evidence suggests that the present system for allocating investment seems to produce widespread distortions in the form of 'development constraints' whose magnitudes are difficult to estimate. It is not clear from the text how the approach outlined here will resolve these problems.

Q8. The most important factors appear to have been identified.

Chap 6:

Q9. (It looks as if the version of this question which appears on page 19 may be incorrect. Instead, I shall answer the question that appears on page 65). Figure 6.4 on page 59 confirms that investment per property in Scotland and in England&Wales has been broadly similar when cumulated over the last 22 years. It is not quite clear to me to what extent this comparison may be affected by differences between the two areas in the use of PFI, (see, for example, page 51, section 6.2, para 3).

Chap 7:

Q10. Without a comprehensive and transparent list of individually named investment projects, each with specific and quantified outputs, adequate accountability for these very large sums of public money would simply not be possible.

Q11. Since this is about the use of public money, the programme should definitely be published. Whether it is published in full or in regional lists is a matter of

convenience. Perhaps regional lists could be published in paper form, while the full list could be available electronically.

(This chapter is notable for its verbal chastisement of Scottish Water. One would not normally expect to find such material in a volume of this kind, but in the circumstances it seems entirely appropriate.)

Q12. I strongly agree. There can be no possible justification for an 'early start' to Q&S 3 until its baseline programme has been defined and agreed.

Chap 8:

Q13. It seems essential to identify at least those individual components of the Q&S 2 overhang which may be of critical importance. It is also true that the aggregate size of the overhang will have an effect on the feasibility of delivering all of the Q&S 3 programme on time.

(It may be a little harsh to say that a measured 'inefficiency' of £10m on a programme of £1600m means that the programme has been delivered "inefficiently", especially when it is recognised that Q&S 2 was a very large programme by UK standards. The last sentence of section 8.2 on p. 73 is also perhaps a touch severe.)

Q14. Yes

Q15. The detailed comparisons you have drawn with the England & Wales experience throw light on 'deliverability', and your proposed further analysis of possible correlations between size and efficiency should also be instructive.

Q16. Yes

Chap 9:

Q17. It would be a great simplification if you did not have to specify the 'inputs', but could just rely on monitoring the 'outputs'. Readers might like to know why this would "increase the scope for argument about delivery". It would also be interesting to know how many of the 2,500 capital maintenance projects lie above the £250k limit.

Q18. I think that the proposed degree of detail is probably sufficient.

Q19. The rationale is fine as far as it goes. However, the quantity of information captured and processed must incur costs. Can these be assessed objectively?

Chap 10:

Q20. Yes. It is difficult to think of any more appropriate person to perform this function.

Q21 Only that it looks as if it will require a great deal of work on the part of WICS staff.

Q22. Yes

Q23. I am not sure how it is proposed to “take full account of potential synergies”. Also I am not quite sure that I understand the difference between “effective” and “efficient” on page 83.

Chap 11:

Q24. The fact that Ofwat has refined these methods over a number of years means that they must be taken seriously. However, I am unimpressed by the econometric models. The explanatory power of the selected independent variables is poor.

Q25. It may be a bit late to suggest this, but I wonder if an approach which focused on ‘best practice’ might be preferable?

Chap 12:

Q26. None of the other regulators seems to rely on econometric modelling. Because of the different characteristics of these other industries, one should not expect to find any really specific methodological analogies with water. But it was well worth carrying out and reporting your investigation of the methods used by the other regulators if only to demonstrate that you have not overlooked anything.

Chap 13:

Q27. Yes

Q28. See the answer to Q24 above. However, if you are going to use Ofwat’s models the proposed adjustments seem quite suitable.

Q29. That’s fine

Q30. Yes

Chap 14:

Q31. Yes. In particular, it is prudent to follow the approach suggested by the Competition Commission, whatever its intrinsic merits or demerits.

Q32. No

Q33. Since the method of offering companies incentives for outperformance seems to have worked so well in England & Wales, (as well as in other regulated industries), there seems no reason why it should not work in Scotland, suitably adjusted for the public sector context. I think that SW might be allowed to keep at least 50% of any outperformance benefit, with an agreed fraction of that going to staff bonuses and

another fraction to their reserves. (The latter to give management some future discretionary spending power.)

Q34. I strongly agree. However, as the Executive is carrying the risk of future under-performance would it not be logical for it also to share in the benefits of future outperformance? It could take part of the 50% share going to SW. While this would not be significant financially, it might be important psychologically for both the management of SW and for the Executive, emphasising the significance of the owner-manager relationship.

Chap 15:

Q35. It is indeed. Not only that but crystal clear, so that anyone who wishes to propose any amendments can easily do so. My only general comment would be that the emphasis is on setting targets for allowable capital expenditure, the 'inputs', rather than on monitoring 'outputs', but that is perhaps largely a task for the other regulators.

Q36. Yes. I think that the arguments you have presented in favour of taking these factors into account are quite conclusive.

Chap 16:

(Instead of answering Q37 on p.20, I shall answer Questions 1 and 2 on page 126)

Q1: The involvement of as wide a range of stakeholders as possible in performance monitoring sounds like a good idea.

Q2 Yes.

DRFS
27.1.05

East Ayrshire Council response to Volume 5

From: "Crawford, John (Cmt. Ser)" <John.Crawford@east-ayrshire.gov.uk>
Date: 14 January 2005 16:00:25 GMT
To: "SRCM" <SRCMethodology@watercommissioner.co.uk>
Cc: "Cassels, Suzie (McNaughton)" <Suzie.Cassels@east-ayrshire.gov.uk>, "Stafford, William" <William.Stafford@east-ayrshire.gov.uk>
Subject: **Our work in regulating the Scottish Water Industry: The scope for capital cost efficiency**

Further to your email of 17th December 2004 to the Chief Executive, I now set out the Council's responses to the various questions set out in the consultation document.

Q.1 The Council agrees that the final investment programme should be defined in detail at an asset level.

Q.2 The Council agrees that this investment programme be placed in the public domain.

Q.3 The Council agrees that the UKWIR common framework approach for capital maintenance provides a suitable mechanism for establishing Scottish Water's (SW's) capital maintenance requirements.

Q.4 The Council agrees that the three-stage approach will establish whether SW's capital maintenance proposals are justified, well costed and meet best practice.

Q.5 The Council agrees with the proposed approach to assessing SW's quality investment proposals.

Q.6 The Council has no view on other factors which might be taken into account to ensure customers receive value for money.

Q.7 The Council agrees with the proposed framework for assessing SW's water resource and sewerage and sewage treatment planning.

Q.8 As per response to Q.6

Q.9 The Council agrees that the scope for improvement is different between capital maintenance and capital enhancement and between water and sewerage.

Q.10 The Council agrees that a baseline investment programme is an essential pre-requisite for the Strategic Review of Charges 2006-2010.

Q.11 The Council view is that the investment programme should be published in regional list format.

Q.12 The Council does not support an 'early start' programme for Quality and Standards III unless appropriate definition of the II & III programmes is available.

Q.13 The Council has no view on the treatment of the potential overhang from Quality & Standards II.

Q.14 The Council agrees that lessons learned from this experience should be used when setting the investment programme for the next regulatory period.

Q.15 The Council has no view on factors to be considered when establishing the deliverability of the investment programme.

Q.16 The Council agrees that the efficiency target be adjusted if the proposed investment programme is very large.

Q.17 The Council agrees that the proposed degree of definition for the baseline programme is sufficient.

Q.18 Not applicable.

Q.19 The Council support the rationale behind the definition of the baseline investment programme.

Q.20 The Council agrees that the Reporter carry out the process of verifying SW's capital investment proposals.

Q.21 The Council has no comment on the proposed verification process.

Q.22 Not applicable.

Q.23 The Council view is that the proposed areas of assessment are sufficient to ensure the programme is deliverable.

Q.24 The Council view is that Ofwat's methods for assessing capital expenditure efficiency are appropriate.

Q.25 The Council has no comment to make here.

Q.26 The Council has no comment to make here.

Q.27 The Council agrees that there are benefits in using Ofwat's benchmarking techniques to assess the scope for SW to improve its capital efficiency.

Q.28 The Council has no comment to make here.

Q.29 The Council has no comment to make here.

Q.30 The Council agrees that the proposed mechanisms for taking account of 'special factors' are appropriate.

Q.31 the Council agrees with the proposed approach to establish the scope for improvement in capital efficiency.

Q.32 The Council supports the proposed approach to treat capital maintenance and capital enhancement separately.

Q.33 The Council agrees with the proposal to introduce an incentive mechanism for outperformance.

Q.34 The Council has no view on grant-in-aid being used to fund any future failure to meet efficiency targets.

Q.35 The Council view is that the proposed methodology for setting targets is robust.

Q.36 The Council agrees that account should be taken of the 'critical factors' listed.

Q.37 The Council agrees that the scope for improvement is different between capital maintenance and capital enhancement and between water and sewerage.

I trust this information is of some assistance.

Regards,

JFC

Katherine Russell
The Water Industry Commissioner for Scotland
Ochil House
Springkerse Business Park
STIRLING
KY7 7XE

**Direct Line: Pamela Ewen
01592 416238**

E-Mail: pamela.ewen@fife.gov.uk

Your Ref :

Our Ref : PE/236/dg

Date : 17th January 2005

Dear Ms Russell

**RE: CONSULATION – OUR WORK IN REGULATING THE SCOTTISH WATER
INDUSTRY: THE SCOPE FOR CAPITAL COST EFFICIENCY”**

Thank you for the opportunity to respond to this consultation. Fife Council's responses to the Scottish Executive's consultation 'Investing in Water Services 2006-2014' and 'paying for Water Services' remain valid. (Copies attached.)

The Council is keen to ensure that the delivery of its development strategy will not be hindered by a lack of availability of water and drainage infrastructure. Fife Council is keen to work in partnership with Scottish Water and other parties to ensure that Fife's plans for regeneration and strategic expansion of settlements as set out in the Draft 20-Year Structure Plan 'Fife Matters' are delivered timeously.

There is clearly scope for more joint working between the local authority and Scottish Water to deliver future development in Fife, to identify development priorities and ensure that appropriate finance is available. In this regard, the Q&SII investment programme should be placed in the public domain, together with the baseline investment programme for Q&SII. This detail is essential for local authorities in putting in place comprehensive development and regeneration strategies and making best use of available infrastructure. This information requires to be provided at a Fife level. This information sharing alone would assist in greater efficiency.

Delivering the investment programme is vital to future development in Fife and across Scotland. There is potential for local authorities to assist in this process in ensuring that developer contributions are available in the correct locations to allow deliverability of employment and housing land.

Yours sincerely

Pamela Ewen
Team Leader (Strategic & Corporate Policy)

Glasgow City Council response to Volume 5

From: "Murray, Phil" <Phil.Murray@drs.glasgow.gov.uk>

Date: 17 January 2005 12:07:26 GMT

To: "SRCM" <SRCMethodology@watercommissioner.co.uk>

Subject: Our Work in Regulating the Scottish Water Industry-The Scope for Capital Cost Efficiency

I refer to your circulation of the Executive Summary on 17.12.04, inviting comments by 17.01.05, and, following discussions with technical and financial colleagues on the implications thereof, set out below the general observations of Glasgow City Council

- * Criteria for Investment Review (Page 12 of Executive Summary)-Following the steps set out, such as comparing the Plan with Ministerial Guidance, inviting various bodies to review the programme, comparing with models used by OFWAT in England and Wales to determine relative efficiency, is a very complex process. This very complexity may well give scope for challenging the results of the process, albeit the basis of such challenges may be invalid due to many users of Scottish Water being uncertain of the process.
- * One of the steps to help determine the relative efficiency of the capital programme is the use of models based upon those used by OFWAT in England and Wales. While elements of this approach have been scrutinised by the Monopolies and Mergers Commission and the Competition Commission and found to be fit for purpose, the WIC report does not comment on the effectiveness of this approach in improving the efficiency in comparable capital programmes of English and Welsh Water companies.
- * Benchmarking with other water companies is a key element of the process set out in the WIC report. This again is a complex model and will require cross checking to ensure unique factors in Scotland do not distort results (eg Scottish Water's existing debt burden when compared with private utilities in England and Wales). It is understood that OFWAT in England and Wales utilise an independent consultant to endorse the benchmarks-there is no reference in the report as to how such independent assessment will be carried out in Scotland.
- * The reference in the report to the scale of the potential Q+S III programme as being without precedent in comparison to England and Wales, when read alongside another step in the process whereby '... assessment of the degree to which scope for improvement (in efficiency) is limited by the size of the investment programme' is of concern to the City Council and no doubt to the majority of local authorities, particularly in relation to an adequate element of the finalised Q+S III programme being allocated to the removal of development constraints. The possibility of the Programme being reduced in real terms to accommodate the need for significant efficiency savings would underline those concerns.
- * The reference to the limitation on total investment arising from the national capacity of the civil engineering market in Scotland has already been highlighted by the City Council in its response to the Scottish Executive Consultation Paper on Investing in Water Services 2006-14.

- * Overall the absence of detailed reference to the specific issue of development constraints suggests that the aim of WIC's overall analysis is to protect the overall assets, rather than to give any priority to the national regeneration programme.
- * In relation to specific questions
 - Chapter 11 Question 24-Ofwats methods have been developed over a number of years and are used to 'establish the scope for improvement'.It is not clear how successful the water companies have been in achieving these targets which is one way of measuring the robustness of the process.
 - Question 25-In addition to the detailed approach set out, there should be high level indicators to simply demonstrate that any capital investment programme is improving(or in some areas maintaining) performance. The trend will only become apparent over aperiod of time but statistics on current performance need to be in place now.
 - Chapter 12-Question 26-It is clear that comparison of costs with other organisations is a fundamental part in measuring efficiency , and in some areas this was inconclusive due to the lack of robust cost information.
 - Chapter 13-Questions 27-30 The benefit is that it is a method which has been tried in other areas and is not being used for the first time. The methods allow for factors which Scottish Water can demonstrate real impact on their levels of efficiency to be taken into account by WIC.

Phil Murray

Principal Planner

Development Plan Team

Development and Regeneration Services

Glasgow City Council

From: Macnicol, John [John.Macnicol@argyll-bute.gov.uk]

Sent: 12 January 2005 17:07

To: SRCM

Subject: Strategic review of charges

Hi,

I have recieved an email copy of the Strategic review of charges and titled "our work in regulating the Scottish Water industry" by the Water industry commisioner.

The first point i would like to make clear is this is a a personal and professional input and not those of Argyll and Bute Council .

My position here at Argyll and Bute Council is of Chief Asset Manager and My Qualifications are as a professional engineer (B.Sc, M.Sc. C.Eng M.I.E.E. membership no 34021586). My aim is to comment on the Asset management aspects and also to make some general comments.

Given the timescale it has not been possible to give this document the consideration it merits and hence the following comments are being provided on this basis.

Main points general

The consultation period has been extremely poor, and of short duration and isnt acceptable given the magnitude, significance and contents of the document and the time of year the document was issued. The consultation period should be extended by at least another 1 month , to allow professional people sufficient satisfactory time to examine,consider and investigate the large number of items being discussed and issues highlighted.

A much wider consultation should occur , ie by putting the document on a Web site with public access and asking for comments.

Stakeholder information days must include representatives from Argyll and Bute. It is not possible to establish if this has or will happen during this consultation period.

Whilst in general there are a number of good sound principles being suggested they are largely vague and non-specific , consider the first couple of points under asset management.....

In summary the document needs much more explicit details on how it would work and specifically we are very interested in how it would be applied and the impact to Argyll and Bute area.

Asset Management

on what basis/criteria are assets to be rationalised ? this criteria should be clearly stated in the consulting document which performance indicators are to be employed? How are these defined , how many are going to be applied used on what type of Assets?

which performance targets are going to be set and who defines the targets for asset performance?

Asset investment must be defined for each individual asset and should be available for public viewing.

Geography

How does the document recognise geographical location of remote communities and how are costs likely to affect them.

What is the expected capital programme for Argyll and Bute for each year

Costs

What are the anticipated water charges to be per household in Argyll and Bute Annually and for each year over the next 10 years?.

Who has set/agreed the criteria set for affordability of the programme, to be met by the consumers and in relation to Argyll and Bute?

How are costs going to be apportioned, and specifically how does it impact remote/rural areas.

Risk Management

what risk management processes are being implemented ? what is the risk programme and criteria being implemented for capital projects.

Capital Budget

Normally the capital programme is constrained due to affordability reasons , what constraints or limits are being applied in the case of Argyll and Bute .

What is the expected or planned capital programme for Argyll and Bute for each year over the next 10 years.

Do the individual assets conform/consistent with individual Asset management plans in place by the Scottish executive eg the Roads Asset Management plan.

Maintenance Budget

It is important to separate maintenance programme costs from improvement or enhancement costs and these costs would have to be provided for each year and an acceptable and affordable maintenance programme be agreed.

Benchmarking

We need much more detailed information on the benchmarking processes/benchmarking criteria

Efficiency savings

We are not clear on how this would work.

Consultation

Local consultation is required to discuss the overall impact to Argyll and Bute people, prior to agreement and implementing this programme

Finance

What finance controls are being implemented would expect a prudent approach to financial management for planning, implementation & Investment appraisals to be performed, for capital programmes to be carried out.

Quality

How is quality criteria going to be matched to investment in assets

Government initiatives/programmes

How is this programme considered, recognised and consistent with other government programmes eg "sustainable communities", "best value regime", "Asset management planning" and is this document consistent with these existing programmes.

John MacNicol

Northumbrian Water Limited**Response to consultation by the Water Industry Commissioner for Scotland****NORTHUMBRIAN WATER LIMITED****RESPONSE TO CONSULTATION BY THE WATER INDUSTRY
COMMISSIONER FOR SCOTLAND****“OUR WORK IN REGULATING THE SCOTTISH WATER INDUSTRY:
THE SCOPE FOR CAPITAL INVESTMENT EFFICIENCY”**

1. Northumbrian Water Limited (NWL) welcomes the opportunity to respond to the consultation by the Water Industry Commissioner for Scotland on the scope for capital investment efficiency. Our response is limited to areas where proposals rely on methodologies drawn from the regulatory regime in England & Wales.
2. *Question 3: Do respondents agree that the UKWIR common framework approach for capital maintenance provides a suitable mechanism for establishing Scottish Water’s capital maintenance requirements?*

It must be understood that the UKWIR common framework is a “framework” and not a detailed methodology that, if followed correctly, provides the “right” answer. The framework contains excellent principles but requires companies to develop their own appropriate methodologies, backed-up by robust data. In England & Wales few companies, if any, reached a position where they could say in PR04 they had applied the framework to perfection. It is important to recognise that Scottish Water will likewise have to improve its methodologies and data over time and some degree of judgement will inevitably be required regarding suitable levels of capital maintenance in the next review of requirements.

In PR04, Ofwat used assessments of companies’ compliance with common framework principles to determine how much of companies’ proposed capital maintenance uplifts to allow for in price limits. The rationale behind this approach was not consulted upon, was not properly explained to companies, and did not address the important question of whether the investment proposed was actually required to maintain serviceability. We would caution against this or similar arbitrary approaches.

3. *Question 24: What are respondents’ views on Ofwat’s methods for assessing capital expenditure efficiency?*

In common with the vast majority of water companies in England & Wales we believe that Ofwat’s comparative efficiency tools (econometric models and cost base) are not fit for purpose. This is because the explanatory powers of the models are limited and the differences between companies’ relative costs derived from the models are the result of a number of factors, not just efficiency or inefficiency. These factors are not properly taken into account by Ofwat and therefore the resulting “catch-up” efficiency targets are over-estimated.

Northumbrian Water Limited
Response to consultation by the Water Industry Commissioner for Scotland

4. *Question 25: What other approaches to the assessment of the scope for capital efficiency would respondents suggest? How would these work?*

Ofwat's econometric comparative efficiency assessment using the Corrected Ordinary Least Squares (OLS) method of regression takes the extreme view that all of the regression residual can be regarded inefficiency. An alternative econometric approach would be to use Stochastic Frontier Analysis (SFA), which suggests that deviations from the efficient cost frontier are due to both inefficiency and random error, a more realistic assumption.

Given the critical role played by catch-up targets we would urge the WIC for Scotland to take a pragmatic approach of only setting catch-up targets proportionate to the statistical confidence that can be placed in models used and supporting data.

At the very least the regulator should not rely solely on the results from only one statistical technique. Whilst evidence shows that the correlation between (OLS) and Data Envelopment Analysis (DEA) generally result in similar efficiency rankings, the estimates of the efficiency gap tend to be smaller by several orders of magnitude when DEA is used.

5. *Question 28: What are respondent's views on our proposed use of Ofwat's econometric models and cost base technique as the basis for establishing an efficient level of capital maintenance spend for Scottish Water?*

Ofwat bases its derivation of capital maintenance efficiency on its econometric and cost base models.

Econometric Models

NWL disagrees with the quote in the consultation paper on Page 7 of the Executive Summary (bottom of column 1): "*Ofwat can determine relative efficiency with a good degree of accuracy*".

Ofwat uses econometric modelling to identify the "catch-up" efficiency to be applied, in addition to the assumed frontier movement. Ofwat's models have limited statistical reliability and do not adequately explain the reasons for differences in companies' capital maintenance costs. Ofwat's catch-up assessments imply that an implausible 80% to 90% of the econometric model residuals are attributable to inefficiency. This has led to large differences in the catch-up efficiency targets applied to companies in PR04.

The large range is counter intuitive given that the comparative efficiency regime has been in operation for 15 years and companies' relative positions should now be converging. It is our view that such large apparent efficiency gaps are a consequence of the reliance on poor econometric models.

Northumbrian Water Limited**Response to consultation by the Water Industry Commissioner for Scotland**

The explanators in Ofwat's capital maintenance models are substantially at odds with the technical knowledge of the industry. Key cost drivers such as asset age, type and condition have been excluded from the analysis. Furthermore, many of the econometric relationships have broken down since PR99. It is quite clearly becoming very difficult to attain significance with non-scale variables for capital maintenance investment. The differences between companies after 15 years of privatisation is now more to do with their specific operating circumstances, hence the difficulty in finding explanatory factors.

The underlying presumption of Ofwat's econometric models is that the residual difference between actual and frontier cost is inefficiency. Other, more dominant influences will include missing, inadequate and inappropriate explanators, random noise and data errors and inconsistencies. Ofwat's residual adjustment in PR04 to account for model error (10% for water, 20% for sewerage) implies that the models are 90% and 80% reliable respectively. These adjustments appear to have been chosen on a highly subjective basis and bear no relation to the actual statistical reliability of the models. A perverse feature of Ofwat's approach is that the more unreliable are its econometric models, the greater the residual difference between actual and frontier cost is, and the greater the efficiency target applied.

Professor John Cubbins¹ concluded, in his thorough review of the econometrics, that only 25% (water) and 35% (sewerage) of the capital maintenance residuals in Ofwat's models are attributable to efficiency.

If these models are to be used, adjustments proportional to the actual explanatory power of the models must be applied (also recommended by Professor Tom Weyman-Jones²).

Finally Professor Cubbin also shares Professor Weyman Jones' concerns about the "double jeopardy" created by setting opex and capital maintenance frontiers independently. Ofwat is effectively benchmarking companies against the two companies with the lowest capex and opex simultaneously, effectively creating a hypothetical combined frontier beyond that actually achieved by any company.

Cost Base Models

Ofwat places too much reliance on the outputs of the cost base modelling process. The analysis overestimates the extent to which the difference between companies' costs and the benchmark is due to inefficiency. A recent report by Ove Arup³ concludes that less than 40% of the demonstrated variance may actually arise from

¹ "Assessing Ofwat's Efficiency Econometrics", Professor John Cubbins, City University, February 2004.

² "Comparative Efficiency Analysis in the Water Industry", Professor Tom Weyman-Jones, December 2002.

³ "Review of Cost Base Submission": Arup, E C Harris, September 2004

Northumbrian Water Limited**Response to consultation by the Water Industry Commissioner for Scotland**

efficiency. Catch-up efficiencies derived from cost base modelling should significantly moderated, in-line with the model's true reliability.

The main issue is that not all differences in companies' standard costs are efficiency related. This is because the standard cost specifications and the requirements for inclusion or exclusion of costs are open to very wide interpretations.

We acknowledge that Ofwat in PR04 attempted to tighten-up on standard cost specifications and companies' interpretation of them. However, Ofwat's efforts were largely unsuccessful. This is demonstrated by the evolution of standard costs over the three submissions for PR04. Each time companies submitted unit costs many standard costs changed significantly, and each time apparently signed-off by Reporters as correct. Another iteration of standard cost submissions would have resulted in yet different standard costs, but these would not necessarily be any more "correct" or "standardised".

Ove Arup's report (September 2004), describes further factors that should be considered when analysing the reasons for the differences between standard costs. It concludes a major proportion of the difference (over 60%) should not be considered to be efficiency related. Ofwat's assessment, based on 100% of the variance, is therefore not sound.

Combination of Econometric and Cost Base

Ofwat combines the efficiencies from the econometric and cost base models to derive the resulting capital maintenance efficiency target. A weighting of 50:50 is used to combine the efficiencies derived from the two modelling techniques. We note that Ofwat has ignored in PR04 a Competition Commission recommendation⁴ regarding the application of weightings that would help to mitigate the inaccuracies of both the cost base and econometric models used by Ofwat.

The Competition Commission recommended that a revised weighting of 75:25 should be applied (where the higher weighting applies to the lower of the efficiencies from the two approaches).

6. *Question 29: "What are respondents' views on our proposal of Cost Base as the basis for establishing an efficient level of capital enhancement spend"*

Our views on cost base are set out in 5 above. If the cost base is to be used the resulting efficiency targets must be adjusted to take fully into account the element of the difference between standard costs that is not due to efficiency/inefficiency.

Ofwat expects enhancement catch-up efficiencies to be achieved in year 1. This does not allow time for innovative design or procurement practices to be identified and

⁴ "Competition Commission Reference by Mid Kent Water plc, section 2.176" August 2000

Northumbrian Water Limited**Response to consultation by the Water Industry Commissioner for Scotland**

introduced. We are concerned to note that yet again Ofwat did not implement in PR04 a Competition Commission recommendation⁵ that capital enhancement catch-up efficiencies should be phased in over three years.

7. *Question 32: Do respondents consider that we should treat capital maintenance and capital enhancement expenditure separately?*

There may be some limited scope for higher capex efficiencies from some forms of capital enhancement expenditure than for capital maintenance. However, we believe that Ofwat's analysis grossly overstates the difference, bringing further doubt on Ofwat's application of the econometric and cost base tools. It must be acknowledged that many investment activities are exactly the same in both the capital enhancement and capital maintenance programmes (eg. mains replacement and building/rebuilding treatment process elements). The scope for efficiency is the same for work items of the same type no matter what the initial driver of the expenditure happens to be. It is clear that two different capex efficiencies should not apply to the same work.

Ken Oswald 11.01.2005

⁵ "Competition Commission Reference by Mid Kent Water plc, section 2.179" August 2000

SCOTTISH WATER RESPONSE
TO
WATER INDUSTRY COMMISSIONER FOR SCOTLAND
CONSULTATION ON

OUR WORK IN REGULATING THE SCOTTISH WATER INDUSTRY
The Scope for Capital Investment Efficiency - Volume 5

January 2005

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EXECUTIVE SUMMARY

Overview

If there is to be a successful outcome to the Strategic Review of Charges 2006-10 for customers, it is important that there should be a shared understanding between the WIC and Scottish Water of the baseline for the review. This includes quantifying the extent to which there exists a backlog of capital maintenance expenditure to be made good; the true nature of Scottish Water's asset base relative to companies south of the border; and with potentially a capital programme constrained to around £450-500m pa, the prospects for convergence with service standards in E&W.

This document contains Scottish Water's evidence and analysis of those areas where our conclusions differ from those of the WIC.

Capital Maintenance

Scottish Water's understanding of our asset base

The WIC's comparison of the size of the asset base (Vol. 5, table 1) omits both lateral sewers and public septic tanks from comparisons with England and Wales (E&W). Scottish Water has additional assets due to additional legal obligations and a requirement to serve a sparse customer base. These assets need to be operated and maintained through investment. To exclude these assets from comparisons understates the true scale of the asset base that requires to be both operated and maintained. An amended table including all assets is presented on page 18 in Table 2.

Scottish Water serves a customer base spread over a land area equivalent to over 50% of England and Wales. The sparse nature of the population served across Scotland means that Scottish Water requires relatively more assets than the average company in England and Wales for the number of properties served. This is reflected in comparisons made of replacement asset value. Table E1 below presents a comparison of the replacement asset value of assets in Scotland compared with England and Wales.

Table E1: Fixed assets per property

Investment per Property	Value of Fixed Assets (£m)	Number of Properties (000s)	Value of Fixed Assets per Property £
E&W WASC Totals	199,336	21,148	9,426
Scotland	26,605	2,386	11,152

In simple terms, serving a property in Scotland requires more assets than serving an average property in England and Wales.

The analysis presented above and table 2 (page 18) shows that each property in Scotland requires more assets than an average property in England and Wales. To maintain these assets

in an equivalent condition to England and Wales would require 18% more investment per property per annum than on average in England and Wales (assuming equivalent asset lives).

Condition of Scotland's Asset Base

WIC states that his "analysis shows that, with the possible exception of water mains, the condition of assets in Scotland is broadly similar to that in England and Wales. For all asset categories, the percentage of 'poor' and 'very poor' assets in Scotland lies within the range for companies in England and Wales."

WICs analysis of asset condition presented in table 6.5 clearly shows Scottish Water's infrastructure assets to be below average. The analysis presented does not, however, illustrate the cumulative effect of poor quality assets in all areas of the asset base. While we may be within the band of results reported within England and Wales, Scottish Water assets are at the lower end of this band and are in a significantly worse condition than the average company in E&W. Dwr Cymru is the only company with a similar percentage of assets in grade 4/5 condition. A comparison of results is presented in figure 1 below:

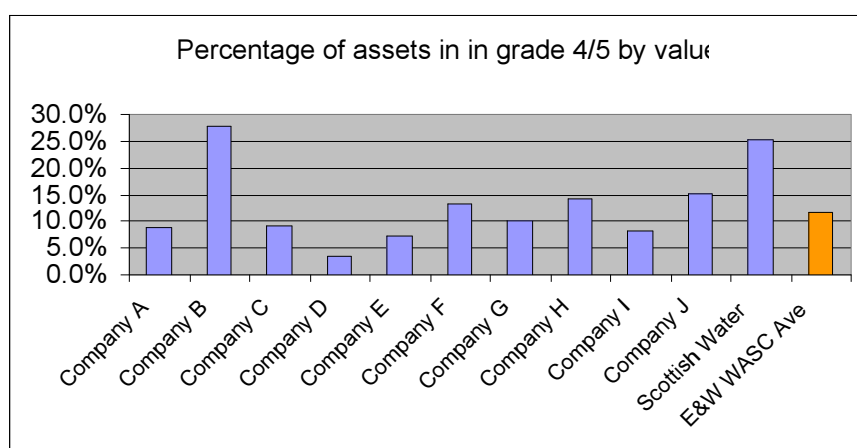


Figure 1

Scottish Water disagrees with WIC's assertion¹ that links can be drawn between asset performance, asset condition and operating practices.

The performance of an asset (such as a water treatment works) in service to the customer is generally a function of:

- The condition grade of its component elements;
- The performance grade of its component elements;
- The completeness or lack of key elements, required to meet regulatory standards;
- The adequacy of operational practice.

¹ WIC Volume 5 page 62; commentary on Table 6.6

If elements of a system (either the network or treatment process) are missing or inadequate, this is not a reflection of Scottish Water's competence to operate the assets.

Backlog of Investment

The analysis presented (in our response to Chapter 6 and below) clearly shows that investment in Scotland has been at a lower historic rate than in England and Wales for an equivalent asset base. This under-investment has resulted in a deterioration of the assets within Scotland relative to England and Wales. This view is supported by our analysis presented on the condition of assets.

Figure 2 in the WIC executive summary indicates between 1984 and 2006 approximately £3200 per property will have been invested in both Scotland and England and Wales. Comparing Scottish per property investment to average E&W per property investment is inappropriate because Scotland's asset/property ratio is necessarily much greater than the E&W average as a result of Scotland's geography and topography.

Comparisons of spend between the average levels in England and Wales and Scotland are an over simplistic form of analysis which masks the different investment levels required in different areas.

By examining the proportion of the asset base renewal in both Scotland and E&W over the 1984 – 2006 period, it is clear that the relative level of asset investment backlog in Scotland has grown over the period.

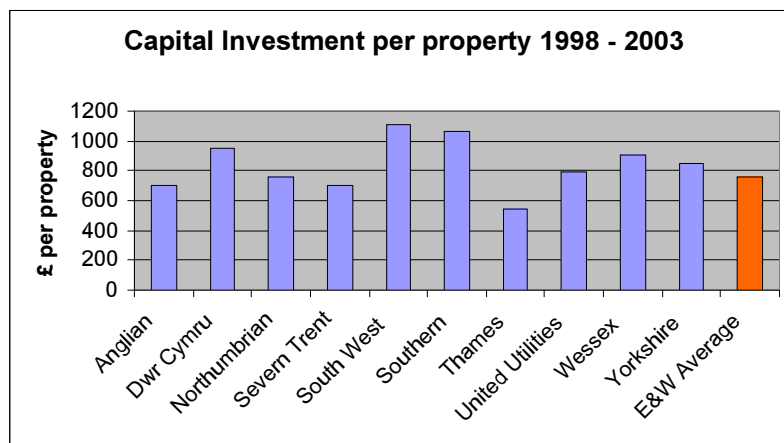


Figure 2

Actual investment by companies in England and Wales varies from around 70% to nearly 145% of average. The ranges for a five year period are shown in figure 3:

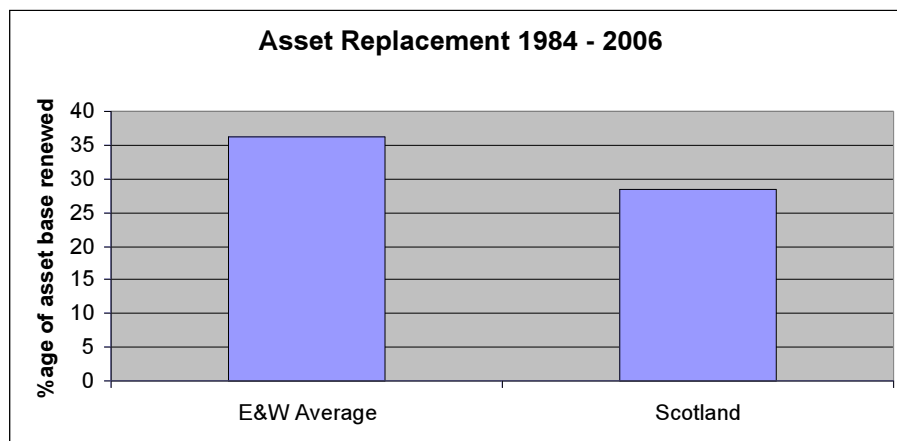


Figure 3

It should be noted that companies in urban areas appear to need less than average investment per property and rural / coastal companies appear to need more than average.

The issue of backlog was recognised in the Q&SII consultation document. During this consultation three investment options were considered:

Minimum option: *This 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 on;*

Central option: *This meets the legal standards and makes some improvements to the assets, though only investing enough in the underground infrastructure to prevent further deterioration; and*

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.*

Under Q&SII, the chosen central option was only funded to stop deterioration of the asset base although the enhanced option was supported by SEPA who recognised the issue of backlog "Past under investment has left a major backlog. The choice is between continuing this trend of deterioration, or halting or reversing it."²

The issue of backlog has been carried forward into Q&SII and not addressed. The consequence of this underinvestment now manifests itself in:

- a significantly higher risk profile for Scottish Water than for companies in E&W;
- an increased incidence of asset failures; and
- a requirement for ongoing repairs that are more expensive and complex to undertake.

The existence of backlog also prevents our convergence with levels of service in E&W.

² Water Quality and Standards, Page 5

For Q&SIII, backlog of investment is not being addressed. This is evident from the approach taken, again, to only maintain the current level of service to customers rather than to fund a convergence with companies' levels of service in E&W. We believe that the gap in levels of service between Scotland and E&W can be largely attributed to the inherited backlog of investment in the Scottish water industry. While the Common Framework methodology can be used to target investment into areas of accumulated service risk, only with explicit funding to address backlog could an accelerated convergence with E&W be achieved.

WIC states that Scottish customers have paid for an equivalent standard of service to that provided to the average customer in England and Wales. The analysis presented above does not support that conclusion.

Capital Maintenance Methodology

Scottish Water notes that the WIC supports the use of the Common Framework Approach to Capital Maintenance Planning (CFACMP) to establish our capital maintenance requirements. The Common Framework is a very new process, and only just being tested in Scotland, as in E&W. As data specific to the Common Framework is gathered our understanding will improve further and may refine our view on backlog versus serviceability.

The consultation document proposes a three-stage approach to assessing our capital maintenance requirements:

1. Review of capital maintenance spending and the condition and performance of the asset base.
2. An assessment of Scottish Water's capital maintenance proposals contained in its first and second draft business plans.
3. An assessment of the scope for efficiency in delivery of the capital maintenance programme.

Our overall opinion on the WIC's proposed approach is that it is difficult to see how this will allow the WIC to establish whether Scottish Water's capital maintenance proposals are justified, well costed and meet best practice. Scottish Water therefore cannot agree with the 3 stage proposed approach.

Stage 1 and Stage 3 do not relate expenditure to customer levels of service and therefore will not provide a useful comparison with the Stage 2 assessment. If the econometric models predict a different requirement for capital maintenance from that derived in Stages 1 and 2, as could possibly be the case, it is not clear how this would be reconciled, or which would be deemed most accurate. Scottish Water seeks clarification on how the WIC is going to reconcile potentially different results.

A detailed assessment of Stage 2 alone should establish whether Scottish Water's capital maintenance proposals are justified, well costed, and meet best practice objectives. It will also highlight our risk profile which will be critical to the prioritisation of maintenance using the CFACMP approach.

Investment to balance Supply & Demand

The WIC promotes an “economic” approach to water and wastewater supply-demand balance, whereby a *“range of supply-demand balance options has been considered and the costs of these have been properly estimated”*³

We generally agree with the approach for water resource planning to be on the basis of an economic approach but, without a detailed understanding of leakage levels and specific impact of the Water Framework Directive (WFD) this is not always possible. While we continue to work towards a greater understanding of the economics of leakage in Scotland, we believe that the industry has insufficient information from the asset base to enable smart leakage targets to be set for Scotland.

It should be recognised that companies in the England and Wales water sector have had the funding and opportunity over time to reduce leakage. It is therefore not surprising that there are lower levels of leakage in England and Wales, relative to Scotland. The ways in which E&W companies have been funded to tackle leakage over time are detailed in our response to Chapter 5.

For the period 2006-14, we have adopted an approach to resource planning for both water and wastewater which aims to minimise cost, while ensuring security of supply for customers. Our strategic approach to water service investment is based on UK Water Industry Research (UKWIR) methodology, as described in our business plan. Our overall strategy will also be set out in more detail in our Water Resource Plan, for which we await draft guidance from SEPA later in January. We are committed to delivering a plan to SEPA by April 2006.

Until a full cost benefit analysis for every site has been completed by SEPA we cannot determine the scale of the actual impact of the loss of available yield as a result of the implementation of WFD.

We are committed to enhancing water supply through both reduction in leakage and the development of additional resources. Our proposed leakage programme will ensure that we continue to move towards our economic level of leakages.

Lessons Learned from Q&SII

Scottish Water expects a clear baseline and clearer specification of outputs under *Quality and Standards III* than under *Quality and Standards II*. However, this needs to be complemented by improved procedures for substituting required outputs for others to ensure sufficient flexibility in the face of changing priorities, revised practices, new technologies and new information. We look forward to discussing any proposals on this issue with the WIC.

We proposed an “early start” programme for *Quality and Standards III* in our first draft business plan because this would help us to deliver our *Quality and Standards III* outputs, and avoid any cyclicity in capex spend caused by the regulatory review process. In his letter of 1 November

³ WIC (2004) op. cit. p.53

2004, the Minister agreed that it would be desirable to identify projects to be brought forward from Q&SIII.

Our early start programme is aimed at:

1. more stability in delivery, by the retention of design and contracting expertise that could otherwise leave Scotland; and
2. enabling a more balanced workload. Without early start work there would be a decline in the investment profile due to less construction activity taking place in the first year of Q&SIII

We do not agree that the early start programme should be dependent on the progress of the Q&SII programme. Projects for inclusion in the early start programme will be subject to the scrutiny and approval by the environment and quality regulators. The early start programme will therefore include projects that are clearly identifiable as not being associated with Q&SII. It should be recognised that the resources required for early start are not the same as those required for the completion of Q&SII.

Deliverability

We believe that to maximise efficiency the capital programme should:

- (a) have no more than a manageable number of projects: and
- (b) have a stable profile of expenditure over time

A large investment programme with a great number of small projects needs much more planning and management both by Scottish Water and by its contractors than a similar programme of large projects. The major benefit of keeping the profile of the programme relatively stable is that we should be able to maintain delivery, as the supply chain will sustain resource to that steady level of investment.

We do not believe, however, that delivering an annual investment of circa £500million in Scotland is the most efficient. It is more likely that fully efficient delivery would constrain the investment to much less than £500 million per year. However we recognise the need for a large and inherently less than fully efficient programme because of the scale of investment that requires to be undertaken in Scotland.

A larger investment programme also implies greater cost risks. These risks reflect the greater likelihood of cost shocks as well as the greater absolute scope for estimation errors in determining capex needs (even in the absence of cost shocks).

Capital Efficiency

As we stated in the detail of our response to Volumes 1-4, we believe that Ofwat's benchmarking techniques for assessing the scope for capital efficiency improvements are problematic even when applied to companies in England and Wales. We believe replication of these techniques in Scotland would accentuate the difficulties with these approaches. We discuss the particular difficulties regarding the application of these approaches in Scotland in our detailed response.

We agree that neither Ofwat's approach nor that of any other regulator in the UK would qualify as the "standard regulatory approach" to assessing the scope for capital efficiency.

NERA (2002) assessed different regulatory approaches for Water UK.⁴ As an output of this review, Water UK adopted a checklist of best practice to be followed in setting efficiency estimates. The checklist notes that, inter alia, company cost comparisons may be misleading about the efficiency factor ("X") because inefficiency cannot be separated from unexplained costs, and because cost differences may not be able to be "caught up". Instead, it would be better to focus on comparator company productivity changes over time, taking care to identify productivity effects from input price effects in interpreting unit cost reductions.⁵

The efficiency target should reflect the size of programme, and potential dis-economies of scale along with the approach to Q&SIII early start. Scottish Water does not believe that supplier discounts that may arise from a larger programme would offset the significant additional overheads costs associated with managing such a programme. This is partly because of the number of different types of projects and their average costs. There is also evidence that suppliers are reluctant to forward order because of the cost of raw materials e.g. steel.

We believe that our proposed approach (ref Chapter 11, Q2 response) based on market-based evidence represents a better way of assessing efficiency than the application of Ofwat's econometric and cost base models to Scottish Water.

This is robust because: (i) the contractually agreed rates with SWS represent a market-based estimate of the costs of delivering a capital programme in Scotland up to 2006/07; and, (ii) the rate of improvement over the subsequent period will represent (if accepted by UU and Thames) the "regulatory contract" agreed rates of our main project partners in SWS, UU and Thames.

We have two specific comments regarding the WIC's proposed approach to special factors. First, while we agree that any special factor claim needs to be carefully justified, we do not share the WIC's implicit presumption that *"special obligations, the character of all or part of [Scottish Water's] customer base, or the result of historical development of water and wastewater systems in its area of supply"* exhausts the available justifications. For example, a special factor based on regional cost differences would not fall into these categories.⁶

Second, and more importantly, we note that other regulators, notably Ofwat, do not consider "negative" special factors in assessing comparative efficiency. We believe it is inappropriate to calculate our relative efficiency by comparing Scottish Water's costs adjusted for negative special factors to benchmark costs in England and Wales which are not adjusted for negative factors.

⁴ NERA (2002) Setting X in a Price-cap regime, A Report for Water UK.

⁵ NERA (2002) op. cit., Chapter 6; NERA (2004) Estimating Opex and Capex Efficiency, p.2

⁶ As the WIC acknowledges on p. 110 of Vol. 5 of "Our work in regulating the Scottish water industry", Ofwat (2004) accepted an argument by some companies that their construction, tender and labour costs were higher than those of other companies because of their location in the country. This argument does not neatly fit into any of the justification categories put down by the WIC.

CHAPTER 2: THE SCOTTISH EXECUTIVE'S CONSULTATION: INVESTING IN WATER SERVICES 2006-2014

1. Do respondents agree that the final investment programme should be defined in detail at an asset level?

Scottish Water agrees that the investment programme should be defined in sufficient detail to ensure customers and other stakeholders have an adequate understanding of our investment objectives, and to facilitate monitoring of our performance. This is agreed for all quality, environment and enhancement projects and for planned capital maintenance projects greater than £250,000. However, it is not possible to define the investment programme for certain parts of the programme e.g. other capital maintenance and growth.

We believe that the capital maintenance programme should be detailed at an asset level for planned maintenance on a 12-18 month rolling programme basis and that there should be annual allocations for reactive maintenance investment.

It should also be recognised that capital maintenance projects are not currently presented at Local Authority (LA) level and we believe that the breakdown of the capital maintenance programme on a LA basis could hinder our ability to move capital maintenance to maintain serviceability across Scotland. At this stage it is not feasible to predict the number and value of reactive maintenance projects.

We are keen to agree the level of detail across the final investment programme with the WIC.

However, while we agree that the programme can be detailed at an asset level on some areas of the investment programme, the process also requires flexibility, to allow us to respond to possible changing investment needs during the Strategic Review period, 2006-14, and to allow substitution of projects where more cost-effective solutions are identified. We acknowledge that the need for a "substitution" process is recognised in Chapter 7.⁷

Related to this issue, it is important that the WIC establishes a clear logging mechanism, whereby capital expenditures incurred by Scottish Water but not identified at the beginning of the process are added to the RCV, and investments that are no longer required (e.g. where we have identified a more effective way of realising the desired outcome) are no longer included. In our response to Volume 3 we proposed that this process is formally codified.⁸

⁷ SW (2004) op. cit. p.69

⁸ See SW (November 2004) Scottish Water response to the Water Industry Commissioner for Scotland's in our work in regulating Scottish Water industry, p.22.

2. *Do respondents agree that this investment programme should be placed in the public domain?*

We believe that the quality programmes could be published in the public domain as the changes to these are limited and will be covered through a transparent substitution mechanism agreed by Stakeholders. This is common with Ofwat's approach in E&W.

However it is not in customers' interests to publish individual project investment values prior to agreement of contracts as this may affect the commercial negotiations over the price of delivery contracts. Publication of this information could also build up public and MSP expectation of a level of investment rather than the benefits to be delivered in an area.

The level of definition of our capital maintenance programme will vary annually and should only be published when we are committed to this investment going ahead, avoiding the potential for unnecessarily raising customers' expectations.

There are also difficulties with the communication of the investment for growth and it will be difficult to place this in the public domain until Scottish Water is committed to individual projects following prioritisation of investment by a wider stakeholder group.

CHAPTER 3: CAPITAL MAINTENANCE

1. *Do respondents agree that the UKWIR common framework approach for capital maintenance provides a suitable mechanism for establishing Scottish Water's capital maintenance requirements?*

Scottish Water notes that the WIC supports the use of the Common Framework Approach to Capital Maintenance Planning (CFACMP) to establish our capital maintenance requirements. The Common Framework is a very new process, and only just being tested in Scotland, as in E&W. As data specific to the Common Framework is gathered our understanding will improve further and may refine our view on backlog versus serviceability.

In common with many companies in England and Wales, our capital maintenance programme is not fully based on the Common Framework approach because the process is still new. We have set out our approach to setting capital maintenance expenditure in our first draft business plan, and we will revisit this with the submission of our second draft business plan. For these reasons, we note that failure to comply fully with the Common Framework should not be a reason for WIC to revise our proposed capital maintenance programme.

2. *Do correspondents agree that our three stage approach will allow us to establish whether Scottish Water's capital maintenance proposals are justified, well costed and meet best practice?*

The consultation document proposes a three-stage approach to assessing our capital maintenance requirements:

1. Review of capital maintenance spending and the condition and performance of the asset base.

2. An assessment of Scottish Water's capital maintenance proposals contained in its first and second draft business plans.
3. An assessment of the scope for efficiency in delivery of the capital maintenance programme

With regard to Capital Maintenance, the text refers to the OFWAT 4 stage approach:

- Stage A: Maintaining serviceability to customers to date
- Stage B: Is the future period different
- Stage C: Scope for improvements in efficiency
- Stage D: Impact of the enhancement programme

and refers to Chapter 3, where it is stated that Stages A, B & D have been covered previously.

We note that Chapter 3 refers to the 3 stage approach as set out above and observe that, Stage 1 clearly does not review serviceability, Stage 2 does not mention future serviceability and Stage 3 makes no mention of the enhancement programme. The proposed approach therefore appears not to follow the OFWAT approach.

We have a number of concerns with the WIC's approach:

Stage 1:

In particular, we are concerned about the WIC's assessment of the condition and performance of our asset base relative to English and Welsh companies as a basis for setting our capital maintenance expenditure.

Stage 1 refers to WIC reviewing its analysis of the condition and performance grades in Scotland. This needs clarification. If this analysis is limited to Scottish Water, so that a company trend can be analysed then this compares strongly with the Ofwat methodology. However if the analysis is to compare with E&W, we are concerned about the differences in methodologies between Scotland & E&W e.g. burst and residual life methodologies for estimating condition grade. We note that the WIC also highlights the difficulty of inter-company comparisons because of the subjectivity in assessing asset condition and performance⁹. We believe that setting our capital maintenance expenditure on the basis of the observed relationship between expenditure and asset condition and performance for English and Welsh WaSCs, is potentially weak.

Any comparison of investment needs based on comparing Scotland with average E&W spend fails to take into account company specific needs. Capital investment needs and spends vary significantly between companies in England and Wales.

Figure 2 in the WIC executive summary indicates between 1984 and 2006 approximately £3200 per property will have been invested in both Scotland and England and Wales. Comparing Scottish per property investment to average E&W per property investment is inappropriate because Scotland's asset/property ratio is necessarily much greater than the E&W average as a result of Scotland's geography and topography.

⁹ Ref WIC document page number 38

It should also be noted that companies in urban areas appear to need less than average investment per property and rural / coastal companies appear to need more than average. This analysis highlights company specific needs dependent on geography. It is therefore to be expected that Scottish Water with its geography and topography will also require higher than average levels of investment per property.

Stage 2:

The details of stage 2 of the approach are limited. We seek greater clarification and transparency on how the WIC will assess the area of overlap between the capital maintenance proposals and other elements of the investment programme.

Stage 3:

We disagree with the WIC's approach to efficiency, which we address in more detail in our responses to Chapters 11 to 16.

Conclusion

Our overall opinion on the proposed approach is that it is difficult to see how this approach will allow the WIC to establish whether Scottish Water's capital maintenance proposals are justified, well costed and meet best practice. Scottish Water therefore cannot agree with the 3 stage proposed approach.

Stage 1 and Stage 3 do not relate expenditure to customer levels of service and therefore will not provide a useful comparison with the Stage 2 assessment. If the econometric models predict a different requirement for capital maintenance than that derived in stages 1 and 2, it is not clear how this would be reconciled, or which would be deemed most accurate. Scottish Water seeks clarification on how the WIC is going to reconcile the results from each of the stages.

A detailed assessment of Stage 2 alone should establish whether Scottish Water's capital maintenance proposals are justified, well costed and meet best practice objectives.

For Q&SIII, backlog of investment is not being addressed. This is evident from the approach taken, again, to only maintain the current level of service to customers rather than to fund a convergence with companies' levels of service in E&W. We believe that the gap in levels of service between Scotland and E&W can be largely attributed to the inherited backlog of investment in the Scottish water industry. While the Common Framework methodology targets investment into areas of accumulated service risk this will only achieve a convergence of levels of service over a long period of time. Only with explicit funding to address backlog could an accelerated convergence with E&W be achieved.

CHAPTER 4: IMPLICATIONS OF THE QUALITY PROGRAMME

1. *Do respondents agree with our proposed approach to assessing Scottish Water's quality investment programme?*

Scottish Water broadly agrees with the proposed approach proposed by WIC.

However with respect to the detailed guidance given to the Reporter it should be noted that it is not wholly Scottish Water's responsibility to interpret legal obligations and ministerial guidance. Through the Quality & Standards III process, under the environmental quality programme, it was SEPA who interpreted legislative obligations into consent and licence conditions and it is against those conditions that Scottish Water has costed specific projects. Similarly DWQR was also required to interpret legal obligations and issue guidance in the form of a guidance document or information letter. It is against DWQR's setting of legal obligations that we have costed specific projects.

With regard to the Water Framework Directive the legislation has been interpreted by Regulators and the Scottish Executive. For example Class A2 has been identified as good status in Scotland, which is ahead of the final determination of good status for Europe. In E&W, the Environment Agency has not yet identified good status and Water Framework Directive expenditure has been excluded from PR04.

2. *Are there are other factors that we should take into account to ensure customers receive value for money?*

We believe that another factor that should be taken into account, for the benefit of customers, is whether the requirements of the Scottish Executive and quality regulators in Scotland are reasonable (for example where the requirements go beyond the strict legislative interpretation), whether a robust cost benefit analysis supports their approach and whether the approach is consistent with that taken in E&W and the rest of Europe.

CHAPTER 5: INVESTMENT TO BALANCE SUPPLY AND DEMAND STRENGTHEN

1. *Do respondents agree with our proposed framework for assessing Scottish Water's water resource and sewerage and sewage treatment planning?*

The WIC promotes an "economic" approach to water and wastewater supply-demand balance, whereby a "*range of supply-demand balance options has been considered and the costs of these have been properly estimated*".¹⁰

It is disappointing however that this section makes no reference to Customer Levels of Service. This is particularly relevant for Water Supply i.e. not only do we need to meet the demands of future customers, but we need to allow for backlog growth. Historically the Regional Councils and latterly the Water Authorities have allowed customers to connect to the network, which in some areas has resulted in:

- a) a reduction in headroom; and
- b) a lowering of the level of service.

¹⁰ WIC (2004) op. cit. p.53

We generally agree with the approach for water resource planning to be on the basis of an economic approach but, without a detailed understanding of leakage levels, specific impact of the Water Framework Directive (WFD) etc this may not always be possible. While we continue to work towards a greater understanding of the economics of leakage in Scotland, we believe that the industry has insufficient information from the asset base to enable smart leakage targets to be set for Scotland.

It should be recognised that companies in the England and Wales water sector have had the funding and opportunity over time to reduce leakage. It is therefore not surprising that there are lower levels of leakage in England and Wales, relative to Scotland. The ways in which E&W companies have been funded to tackle leakage over time are detailed in Appendix B of this response.

For the period 2006-2014, we have adopted an approach to resource planning for both water and wastewater which aims to minimise cost, while ensuring security of supply for customers. Our strategic approach to water service investment is based on UK Water Industry Research (UKWIR) methodology, as described in our business plan. Our overall strategy will also be set out in more detail in our Water Resource Plan, for which we await draft guidance from SEPA later in January. We are committed to delivering a plan to SEPA by April 2006.

Until a full cost benefit analysis for each site has been completed by SEPA we cannot determine the scale of the actual impact of the loss of available yield as a result of the implementation of WFD.

It should be acknowledged that for a large percentage of our customer base we currently assess headroom, as extremely low when compared with E&W. Customers' exposure to supply restrictions is also unacceptably high in Scotland, with return periods as low as 1 in 3 or 1 in 8 years in areas, in contrast with E&W where the position is generally 1:50 or better.

While we are committed to enhancing supply through both reduction in leakage and the development of additional resources, funding is required to redress the supply / demand balance, as is usual at each periodic review in E&W. Our draft business plan included proposals to move to 1 in 30 years across Scotland.

Our proposed leakage programme will also ensure that we continue to reduce our overall leakage thereby moving towards our economic level of leakage.

2. *Are there other factors that we should take into account to ensure customers receive value for money?*

We believe there are four other factors that need to be taken into account:

1. Customer Levels of Service with regard to the imposition of water restrictions should also be taken into account. These are not as a result of new connections, but are a combination of:
 - historic growth;
 - historic design of water resources and water treatment works differing across Scotland; and
 - lack of tools and techniques to understand water resource levels of service.

To ensure that customers receive value for money, other Regulators such as SEPA will need to be involved in addressing the supply/demand balance, as the option to review discharge consents may be available at certain sites as opposed to building new capacity.

2. Clear guidance is required on where development is to proceed i.e. if we base our demand estimates on Local Authority estimates, then it is likely that excess capacity will be unnecessarily constructed.

Value for money requires an integrated approach from stakeholders that provides an economic balance between investing and managing asset capacity and headroom and the environmental constraints and objectives.

3. Consideration will also have to be given for projects such as flooding investment for integrated solutions, where an inter agency approach will be necessary. There may also be the need for investment for interim/contingency flooding solutions to await permanent solution.
4. A further factor to be given consideration is the significant uncertainty about the future demands from large users, because of:
 - the vagaries of the economic cycle affecting business activity;
 - the effectiveness of water efficiency measures;
 - the opportunity for large users to procure services other than from Scottish Water's network; and

The possibility of large users who have procured services off the network seeking to return to use of the network.

CHAPTER 6: CAPITAL EXPENDITURE IN THE SCOTTISH WATER AND WASTEWATER INDUSTRY

1. Are there any factors we should take into account in the Strategic Review of Charges 2006-10 with regard to the historic level of capital expenditure in the Scottish water industry?

In Chapter 6, the WIC puts the case against any special factors relating to Scottish Water's existing asset base which might put upward pressure on its capital costs. In particular, the WIC argues that:¹¹

- *"The size and composition of the asset base in Scotland is similar to that in England and Wales."*
- *"The condition and performance of the assets in Scotland appears to be no worse than in England and Wales and cannot be used to justify poor customer service."*
- *"By the end of the current regulatory period, investment levels per property in Scotland will be equivalent to England and Wales over the previous 10 and 20-year periods."*

We disagree with each of these claims, as set out below:

¹¹ WIC (2004) op. cit. p.65

Size and composition of the asset base in Scotland

As the WIC acknowledges, Scottish Water is unique in terms of its legal responsibility for “sewer laterals”. The WIC’s comparison of the size of the asset base (Vol. 5, table 1), however, omits both lateral sewers and public septic tanks from comparisons with England and Wales.

Scottish Water has additional assets due to additional legal obligations and a requirement to serve a sparse customer base. These assets need to be operated and maintained through investment. To exclude these assets from comparisons understates the true scale of the asset base that requires to be both operated and maintained. An amended table including all assets is presented below:

	SW	Ranking	Water & Wastewater companies in E&W		
			Smallest	Mean	Largest
No. of properties served (water) million	2,481	4th	542	1,848	3,490
No. of properties served (wastewater) million	2,373	5th	654	1,980	5,377
Length of water mains (km)	46,508	1st	11,294	27,823	45,949
Length of main per property (m)	18.74	5th	9.00	15.59	20.82
Length of sewers (km)	44,854	3rd	8,886	28,487	67,335
Length of sewers per property (m)	18.90	1st	11.80	13.6	14.76
Number of WTW	371	1st	39	104	172
Number of WWTW (incl septic tanks)	1836	1st	349	639	1078

Table 2

Scottish Water serves a customer base spread over a land area equivalent to over 50% of England and Wales. The sparse nature of the population served across Scotland means that Scottish Water requires relatively more assets than the average company in England and Wales for the number of properties served. This is reflected in comparisons made of replacement asset value. Table E1 below presents a comparison of the replacement asset value of assets in Scotland compared with England and Wales.

Table E1: Fixed assets per property

Investment per Property	Value of Fixed Assets (£m)	Number of Properties (000s)	Value of Fixed Assets per Property £
E&W WASC Totals	199,336	21,148	9,426
Scotland	26,605	2,386	11,152

In simple terms, serving a property in Scotland requires more assets than serving an average property in England and Wales.

The analysis presented above shows that each property in Scotland requires more assets than an average property in England and Wales. To maintain these assets in an equivalent condition to England and Wales would require 18% more investment per property per annum than on average in England and Wales (assuming equivalent asset lives).

In making comparisons with England and Wales the WIC also states that a higher number of water treatment works “may indicate that in Scotland a less proactive approach has been taken to rationalising works”

The number of treatment works and the length of water mains are an interrelated issue. In an urban area it is feasible to have a limited number of treatment works supplying a large number of customers through a large network. In a rural environment it is neither economic nor feasible to link an equivalent number of customers to a single treatment works. Smaller communities tend therefore to be served by a small treatment works with a local network.

By stating that the higher number of treatment works in Scotland indicates a less than proactive approach to rationalisation it indicates a lack of understanding of the geography and topography of Scotland.

We serve a population of around 5 million. However, these customers are spread across a far greater area than any WaSC in England and Wales. Our analysis shows that:

- the population of Scotland is spread throughout the country, around the coastline and on the islands;
- as a consequence of the highly distributed population, Scottish Water’s asset base is also very sparsely distributed in order to serve the remote and sparsely populated settlements; and
- the relative topographical restrictions in Scotland (rivers, lochs, mountains and hills) compared to England, very significantly restrict the prospect of cost effective asset rationalisation.

Scottish Water’s combination of small treatment works and local networks are well suited to the operating environment in Scotland. Comparisons of the number of treatment works to area served demonstrate Scottish Water to have one of the lowest numbers of works per area served.

Table 3: Area served per treatment works

Company Name	Water Area Served (Hectares)	Number of WTW	Area per WTW	Rank	Waste Area Served (Hectares)	Number of WWTW	Area per WWTW	Rank
Scottish Water	7,997,600	371	21,557	2	7,960,800	2,044 ¹²	3,895	2
Anglian Water	2,209,000	143	15,448	6	2,750,000	1,078	2,551	4
Welsh Water	2,040,000	97	21,031	3	2,130,000	865	2,462	5
Severn Trent Water	1,974,500	172	11,480	7	2,165,000	1,017	2,129	10
United Utilities	1,441,500	140	10,296	8	1,444,500	607	2,380	7
Yorkshire Water	1,424,000	81	17,580	5	1,360,000	614	2,215	8
Northumbrian Water	1,184,300	61	19,415	4	940,000	435	2,161	9
South West Water	1,030,000	39	26,410	1	1,080,000	640	1,688	11
Thames Water	820,000	97	8,454	9	1,375,000	349	3,940	1
Wessex Water	735,000	119	6,176	10	1,000,000	414	2,415	6
Southern Water	445,000	95	4,684	11	1,045,000	373	2,802	3

The above issues also apply to the sewerage network and the number of waste water treatment works. Scottish Water has many small treatment works serving small communities. As with water treatment works it is neither economic nor feasible to link these communities to large treatment works through long sewerage networks. It is disappointing that WIC chooses to omit the 1220 septic tanks, serving a population equivalent of 132,300¹³, which Scottish Water operates from comparisons with England and Wales. These septic tanks provide sewage treatment to many small communities and the associated sewerage network is included in WIC's comparisons. Septic tanks are a valid method of treatment accepted by SEPA. They require emptying at regular intervals, and many are consented (200), sampled by SEPA and form part of our compliance performance. 47 of these serve a population in excess of 250 people and some include screens and storm overflows as part of the treatment process.

We have included all wastewater treatment works in the above table comparing the number of works required to serve a given area. As with water treatment we have the second highest ratio of area to works in Great Britain. Taking both Water and Sewerage performance together we have the smallest number of assets per hectare in Great Britain. This would indicate that the current combination of treatment works and networks is close to optimum.

¹² Number of works includes outfalls

¹³ Scottish Water Annual Return 2004

Condition of Scotland's Asset Base

WIC states that his "analysis shows that, with the possible exception of water mains, the condition of assets in Scotland is broadly similar to that in England and Wales. For all asset categories, the percentage of 'poor' and 'very poor' assets in Scotland lies within the range for companies in England and Wales."

WIC's analysis of asset condition presented in Vol 5, table 6.5 clearly shows Scottish Water's infrastructure assets to be below average. The analysis presented does not, however, illustrate the cumulative effect of poor condition assets in all areas of the business. While we may be within the band of results reported within England and Wales, Scottish Water assets are at the lower end of this band and are in a significantly worse condition than the average company in E&W. Dwr Cymru is the only company with a similar percentage of assets in grade 4/5 condition. A comparison of results is presented in figure 1 below:

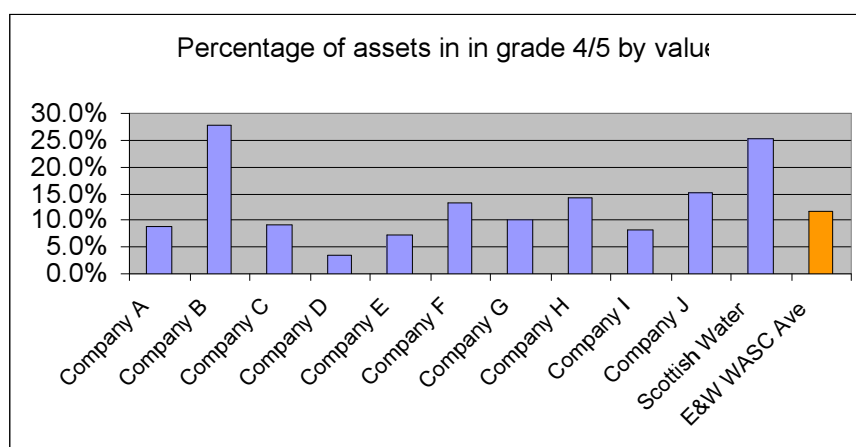


Figure 1

Scottish Water disagree's with WIC's assertion¹⁴ that links can be drawn between asset performance, asset condition and operating practices.

The performance of an asset (such as a water treatment works) in service to the customer is generally a function of:

- The condition grade of its component elements;
- The performance grade of its component elements;
- The completeness or lack of key elements, required to meet regulatory standards;
- The adequacy of operational practice.

If elements of a system (either the network or treatment process) are missing or inadequate, this is not a reflection of Scottish Water's competence to operate the assets.

¹⁴ WIC Volume 5 page 62; commentary on Table 6.6

Condition and Performance of our assets

Regarding the WIC's assertion that asset condition cannot be used to justify lower levels of customer service, we note the WIC's Table 6.5 shows very clearly that Scottish Water's asset condition is very poor relative to the mean in England and Wales: Scottish Water ranks 10th and 9th (in a group of 11 WaSCs) respectively on water mains and sewers, and 5th and 6th place on water treatment works and wastewater treatment work.¹⁵ The cumulative effect of these lower gradings is an asset stock in significantly worse condition than the average in England and Wales.

WIC concludes that service performance in Scotland should be on a par with the performance in England and Wales based on the premise that we have similar level of asset condition. WIC's assessment, however, fails to take into account "fitness for purpose", that is, whether our asset base is designed to meet modern regulatory standards.¹⁶ Therefore, even if our assets were in a similar condition to the assets in England and Wales, we would not necessarily expect to have commensurate service performance or level of capital maintenance as companies in E&W.

For these reasons, we therefore disagree with the WIC's assertion that the asset condition in Scotland implies that we should have similar levels of service to English and Welsh companies.

Investment Levels per property in Scotland

Regarding overall levels of investment, the WIC's Figure 6.4 on "*cumulative investment per property in Scotland and England and Wales in 1984-2006*"¹⁷ does not support his claim that by the end of the current regulatory period, investment per property in Scotland will be equivalent to England and Wales over a 10- or 20-year period as it does not take into account capital efficiency or the relative size of the asset base.

The investment per property data shown has not been adjusted for the relatively poor *historic* capital efficiency of the industry in Scotland cited by WIC. This is so despite the WIC's own comment that "*When comparing investment levels in Scotland and Wales, we also need to take account of the relatively poor capital efficiency of the industry in Scotland. [...] Actual cash expenditure in Scotland needs to be adjusted for inefficiency so that a fair comparison can be made with investment by companies with higher efficiency.*"¹⁸

WIC's makes comparisons of longer term investment over the period between 1984 and 2006 do not take into account the size of the asset base nor the investment needs of Scottish Water .

The analysis presented here clearly shows that investment in Scotland has been at a lower historic rate than in England and Wales for an equivalent asset base. This under-investment has resulted in a deterioration of the assets within Scotland relative to England and Wales. This view is supported by our analysis presented on the condition of assets.

Figure 2 in the WIC executive summary indicates between 1984 and 2006 approximately £3200 per property will have been invested in both Scotland and England and Wales. Comparing

¹⁵ See WIC (2004) op. cit. Table 6.5, on p. 61

¹⁶ We have previously documented our concerns in our Annual Report. See Scottish Water (2004) Annual Return 2003/04

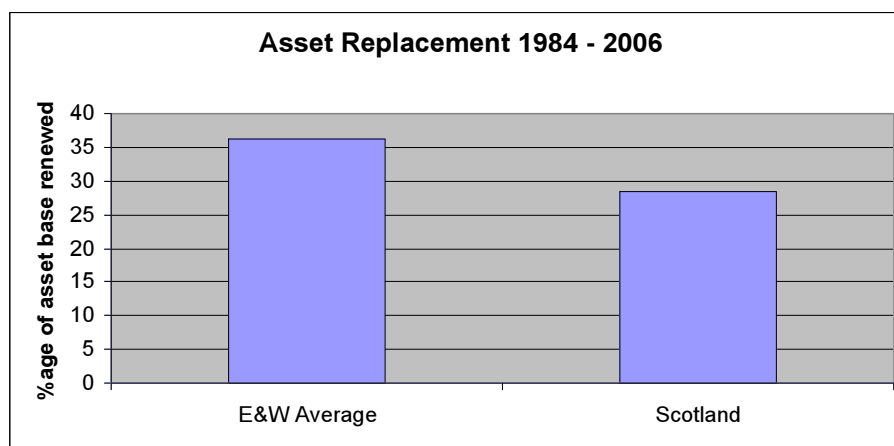
¹⁷ WIC (2004) op. cit. p. 59

¹⁸ WIC (2004) op. cit. p. 57

Scottish per property investment to average E&W per property investment is inappropriate because Scotland's asset/property ratio is necessarily much greater than the E&W average as a result of Scotland's geography and topography.

By examining the proportion of the asset base renewal in both Scotland and E&W over the 1984 – 2006 period, it is clear that the relative level of asset investment backlog in Scotland has grown over the period.

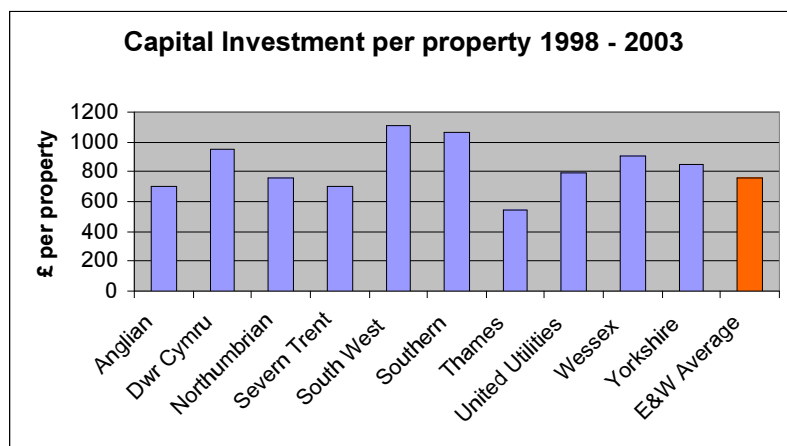
Figure 3: Asset replacement rate



Comparisons of spend between the average levels in England and Wales and Scotland are an over simplistic form of analysis which masks the different investment levels required in different areas.

Actual investment by companies in England and Wales varies from around 70% to nearly 145% of average. The ranges for a five year period are shown below:

Figure 2



It should be noted that companies in urban areas appear to need less than average investment per property and rural / coastal companies appear to need more than average.

WIC states that Scottish customers have paid for an equivalent standard of service to that provided to the average customer in England and Wales. The analysis presented above does not support that conclusion, where in E&W, there is, of necessity, a wide variation in investment levels to deliver and maintain similar levels of service.

Summary

We conclude that both our asset composition - notably our unique responsibility for sewer laterals and high number of water treatment plants serving rural communities - and historically low levels of effective investment should be taken into account in any comparison of our capital investment needs relative to English and Welsh companies.

We also believe that there are other capex special factors involving regional cost factors in Scotland that need to be taken into account.

In addition, we believe it is wrong to assess relative performance regarding customer service on the basis of a comparison of "asset condition". This fails to take into account the backlog of investment in Scotland.

CHAPTER 7: LESSONS LEARNED FROM ESTABLISHING THE BASELINE INVESTMENT PROGRAMME FOR QUALITY AND STANDARDS II

1. Do respondents agree that, based on experience from Quality and Standards II, a baseline investment programme detailing, at a project level, the deliverables from Scottish Water's capital expenditure is an essential pre-requisite for the Strategic Review of Charges 2006-10?

Scottish Water agrees that a baseline investment programme is essential. We also agree that it should be at project level, but not necessarily at an asset level. For items such as growth it is not possible at this stage to assign this to individual assets, due to a lack of clarity over both when and where development may take place. The same comment applies to sewer flooding due to overloading sewers where future problems will be identified/emerge. Therefore these items will only be able to be allocated once we are at the detailed design stage and as knowledge is gained.

We expect a clear baseline and clearer specification of outputs under *Quality and Standards III* than under *Quality and Standards II*. However, this needs to be complemented by improved procedures for substituting required outputs for others to ensure sufficient flexibility in the face of changing priorities, revised practices, new technologies and new information. We look forward to discussing any proposals on this issue with the WIC.

However, we also believe that it is important that there should be a shared understanding between the WIC and Scottish Water of the baseline for the review, for there to be a successful outcome for customers to Strategic Review of Charges 2006-10. This includes quantifying the extent to which there exists a backlog of capital maintenance expenditure to be made good; the true nature of our capital base relative to companies south of the border; and with a capital programme potentially constrained to around £450-500m pa, the prospects for convergence with service standards in E&W.

2. Do respondents think the investment programme should be published? If so, should it be published in full or should regional lists be provided?

As stated in our response to question 2 (Chapter 2) Scottish Water is keen to share the information contained in the investment programme, providing it is clearly explained that the programme is subject to change through the substitution process. It should also be recognised that the timing for individual project starts and completion needs to be flexible due to the uncertainty arising from planning, land matters, consenting as well as profiling for capital efficiency. Planned Capital Maintenance projects may also change to ensure that serviceability at a Scotland level is maintained.

3. Do respondents agree that an “early start” programme for Quality and Standards III is not appropriate unless appropriate definition of the Quality and Standards II and III programmes is available?

We do not agree that there is any need for the early start programme to be dependent on the progress of the Q&SII programme. Projects for inclusion in the early start programme will be subject to the scrutiny and approval by the environment and quality regulators. The early start programme will therefore include projects that are clearly identifiable as not being associated with Q&SII.

We proposed an “early start” programme for *Quality and Standards III* in our first draft business plan because this would help us to deliver our *Quality and Standards III* outputs, and avoid any cyclicity in capex spend caused by the regulatory review process.

The early start programme is aimed at:

1. more efficient delivery, by the retention of design and contracting expertise that could otherwise leave Scotland; and
2. enabling a more balanced workload. Without early start work there would be a decline in the spend profile due to less construction activity taking place in the first year of Q&SIII.

CHAPTER 8: INVESTMENT PROGRAMME DELIVERABILITY

1. *How do respondents believe we should treat the potential overhang from Quality and Standards II?*

As set out in our WIC 51 submission, we currently estimate that the level of Q&SII expenditure that will be delayed until Q&SIII will be approximately £289 million .

We will continue to work with the WIC to refine the size and nature of the overhang from *Quality and Standards II* in order clearly identify the Q&SII projects falling into the next review period.

Scottish Water is delivering these projects later than anticipated for reasons set out earlier but it should be recognised that we are also delivering additional investment within the Q&SII period. It should also be noted that the Q&SII overhang was funded as part of WIC18.

There are three issues to be addressed with regard to the treatment of the Q&SII overhang:

- the funding of the overhang. Scottish Water should be given funding equivalent to the indexation above 1.5% inflation and the funding associated with the additional outputs being delivered.; and
- the size of the overhang. The Q&SIII programme size should be set by the delivery capacity less the predicted overhang (Scottish Water view this to be £288M). This acknowledges that the Q&SII overhang is largely committed.
- the relationship to the opening RCV. The way that the overhang is treated is not linked to the methodology adopted to derive the opening RCV for Scottish Water, whether the opening RCV is derived using a comparator or asset based approach. In both cases, as the opening RCV will not reflect the value of non-delivered outputs, it would be inappropriate to deduct the value of the shortfall in outputs from the opening RCV value.

The Q&SII overhang already has drivers and outputs from WIC18 and should be measured against WIC18 and thus kept separate from the Q&SIII programme and monitored to completion to enable final sign off of Q&SII delivery. This would provide a clear audit trail of Q&SII efficiencies, project costs and budgets, along with Q&SII outputs delivered.

2. *Should we learn from this experience in setting the investment programme for the next regulatory control period?*

We should learn from the Q&SI overhang that the Q&SII overhang will be largely committed work and therefore no further efficiency is available on the associated costs of these projects.

3. *What factors should we take into account in establishing the deliverability of the investment programme?*

- a thorough assessment of the construction industry's ability to deliver investment in Scotland should be undertaken involving Clients, Contractors, Consultants and Suppliers. However while this will establish the capacity of the construction industry in Scotland, it will not identify what constitutes efficient delivery;
- comparison of E&W companies ability to deliver; and
- the ability of SWS to build up and sustain delivery in 2004/05 and 2005/06.

The WIC challenges the deliverability of our proposed £2.46 billion investment programme with reference to:

- the frequency with which companies in England and Wales have delivered four-year investment programmes of a similar size; and,
- the existence of overhang from the *Quality and Standards II* programme.

We do not find the WIC's use of this evidence convincing, for the following reasons:

- The WIC claims that "Scottish Water's proposed investment programme is almost without precedent in the recent history of the water and sewerage industry in the UK" (p. 75). His own data (Table 8.6) on the same page, however, shows that the largest companies in England and Wales have in fact delivered an investment programme of a similar or greater size on 12 occasions.
- We also believe that our rate of expenditure will increase significantly over the final two years of the Strategic Review. The "overhang" in Q&SII is largely explained by the time taken to establish the baseline for the merged programme with regulators and the set-up of Scottish Water Solutions, our capex delivery vehicle. As set out in our DBP, we believe we can now deliver an annual spend to deliver the £2.2 billion programme set out in our DBP.

4. Should we adjust the efficiency target if the proposed investment programme is very large?

Yes, the efficiency target should be adjusted downwards.

Evidence from Ofwat's assessment of capital efficiency in E&W suggests that larger investment programmes tend to be less efficient than smaller investment programmes. The efficiency target should reflect the actual size and composition of programme, and potential dis-economies of scale. A larger programme with a significant number of smaller projects needs much more planning and management both by Scottish Water and its contractors than a similar programme of large projects. Scottish Water does not believe, however, that delivering an annual investment of circa £500million in Scotland is the most efficient outcome for Customers. It is more likely that fully efficient delivery would constrain the investment to much less than £500 million per year. However we recognise the need for a large, and inherently less than fully efficient programme because of the scale of investment that requires to be undertaken in Scotland.

CHAPTER 9: DEFINING THE INVESTMENT PROGRAMME

1. *Is the proposed degree of definition for the baseline investment programme sufficient?*
2. *If not, what other information should be captured and why?*
3. *Would respondents agree with the rationale given in this chapter for the extent of definition of the baseline investment programme? In particular, is the reporting burden on Scottish Water appropriate?*

The level of definition proposed is more onerous than that required by Ofwat. It is unclear as to whether the measurements of delivery will be based on outputs or inputs (workscores). If it is the latter then the Regulators share the risk that the proposed inputs (workscores) do not deliver the anticipated output, which is not the normal regulatory model. This type of intervention from regulators will also potentially stifle innovation in solutions as the incentives are very much diluted (refer to chapter 14). There is an agreed need for definition of drivers of investment and to have clear measurable outputs that will enable confirmation of the delivery of these.

We do not agree that the definition of capital maintenance projects for four years is beneficial as it is known that this will change to meet the overall programme objective. The onus is placed on Scottish Water to define projects for all areas of the programme but this can only be achieved if stakeholders confirm their priorities in advance. In particular the area of growth constraint should be carefully considered as to the level of detail that is to be produced at this stage as this may result in setting expectations that will not be delivered in the final Q&SIII programme as a result of substitution. Providing planning consent dates at this stage is not relevant as planning will only be determined once proposed solutions are developed.

Allocation of drivers requires SEPA and DWQR to define the hierarchy of drivers and protocol for allocation of costs. This was raised by Scottish Water over a year ago and as a fix it was agreed that at this stage all drivers would be allocated equally to projects until preferred scenarios were confirmed. Therefore until this is provided to Scottish Water we cannot provide that level of detail in the investment programme. We suggest that for the investment programme we only define the Base, Quality, Growth and ESL split of projects and if necessary, proportionally allocated these allocations equally to the drivers.

The proposed output measures do not tie in with measuring benefit to customers of investment. Length of mains rehabilitated should relate to serviceability indicators such as interruptions, dirty water, water quality etc. Maintenance of treatment works should reflect an environmental benefit (number or PE of failing works) and a customer benefit (population receiving water below standards), not size of works in which investment takes place.

We strongly believe that the reporting burden in Scottish Water is excessive, and costly, and will rise depending on the level of variance reporting required. It should be recognised that the detail of a £500million investment programme at this stage of planning will change.

We are very concerned that by providing milestone information for each project by project level, there will be a need for variance reporting against these milestones at project level that adds no value to the overall delivery.

It is unclear why this microregulation of the programme by WIC and other regulators is required and we believe that we should only commit to providing programme level monitoring which should be overall progress, level of commitment, forecast completion dates against legislative, yearly expenditure profile met etc. as is provided in our current monthly report to Scottish Executive. The WIC Quarterly CIR is too detailed for stakeholder and customer monitoring.

CHAPTER 10: INVESTMENT PROGRAMME REVIEW

1. Do respondents agree with our proposed use of the Reporter to carry out the process of verifying Scottish Water's capital investment proposals? If not, which other party do you think should be used for this exercise and why?

Scottish Water welcomes the use of the Reporter who, we believe, will provide an independent overview of the work carried out in the development of our investment programme.

Use of an industry expert such as the Reporter, should give those who are not so familiar with the industry the confidence that costs to customers will be minimised and that stakeholders requirements are met. However selective use of Reporter information is not in the long term interest of customers.

2. Do respondents have comments on our proposed programme review process?

Scottish Water is broadly comfortable with the proposed process. We observe that the WIC's list of 11 criteria is longer than Ofwat's 5 criteria.

3. Does it meet the needs of customers and stakeholders?

The review process will include the Reporter, SEPA, DWQR and the WICS office, but does not appear to include the WCCP. The text often refers to the requirements of the customer, with regard to the visibility of the programme, the provision of improved levels of service and keeping costs to a minimum, but this group does not seem to be adequately represented.

As growth is likely to be a key issue in Q&SIII, the review should specifically refer to how it is intended to deal with this element of the programme.

4. Are the proposed areas of assessment sufficient to ensure that the programme is deliverable, takes full account of potential synergies and will meet the objectives set out by Ministers?

The assessment does not fully address the question of whether the programme is deliverable. This requires a detailed assessment of the construction market in Scotland along with the capacity of manufacturers and suppliers. In addition an assessment of the type and volume of work included in the programme will be required e.g. proportion of civil engineering work against electrical & mechanical work, to test this against the availability in the market. This work is

additional to an assessment of Scottish Water/Scottish Water Solutions ability to deliver the programme.

CHAPTER 11: HOW OFWAT ASSESSES CAPITAL EXPENDITURE EFFICIENCY

1. What are respondents' views on Ofwat's methods for assessing capital expenditure efficiency?

As set out in the consultation document, Ofwat uses both an econometric approach and a cost base approach to assess comparative efficiency. Our view of these two approaches is set out below.

Ofwat undertakes ordinary least squares (OLS) econometric modelling to assess capital maintenance comparative efficiency and to set catch-up targets. Under this approach, a company's comparative efficiency is based on the difference between a company's actual costs and the costs predicted by the econometric and unit cost capex models. The difference between actual and predicted costs is referred to as the "model's residual". Capex comparative efficiency is based on the aggregation of the model's residual for nine difference models relating to different business areas, of which four models are simple unit cost models.

In interpreting the econometric results, we note that model residuals are "unexplained costs" and should not be mechanically interpreted as measures of relative efficiency. It is therefore very important to consider what proportion of the residuals is attributable to actual inefficiency rather than a product of the statistical process.

Differences between actual and modelled costs might arise from a number of factors including model misspecification (e.g. because key cost drivers are omitted); data constraints; and statistical error in the model – as well as (in)efficiency. As we set out in our draft business plan, the reliability of both the opex and capex models as indicators of "(in)efficiency" have been heavily criticised in the context of E&W because of:¹⁹

- Very poor explanatory power of the models;
- The susceptibility of the models to data inconsistencies; and
- The absence of engineering or technical justification for the models.

In particular, Ofwat's econometric models for capital maintenance expenditure omit key explanatory variables that we would expect to explain variation in companies' costs. For example, the models exclude variables relating to asset age, condition, utilisation and fitness for purpose, although these are key cost drivers. We also have concerns about the specification of the models. For example, four of the nine capital maintenance models are simple unit costs. There is also considerable potential for measurement errors of the independent and explanatory variables. All of these factors suggest that a significant proportion of the models' residuals reflect statistical error rather than inefficiency. Consistent with our assessment of Ofwat's

¹⁹ For more details, see Scottish Water (2004) Draft Business Plan, Appendix X9

methodology, the Competition Commission concludes that the capital maintenance models are less robust than the opex models.²⁰

As with the opex models, Water UK commissioned Professor Cubbin to provide an assessment of the degree to which capital maintenance models' residuals could be interpreted as inefficiency. Cubbin concluded that only 25% and 35% of the assessed "efficiency gap" for the water and the sewerage service respectively were attributable to inefficiency. In a subsequent update of this report for Scottish Water, Cubbin confirmed that these estimates apply equally to results for Scottish Water (if we were to replicate Ofwat's approach exactly, which we cannot do).

The clear conclusion from this analysis is that models' residuals should not be interpreted wholly as a measure of inefficiency. This has also been recognised by Ofwat. At PR04 Ofwat introduced a "residual adjustment" of 10% and 20% for water and sewerage service capex models to take account of the "*underlying error term in the model residuals*".²¹

We also believe Ofwat's cost base analysis is questionable as a method for assessing comparative efficiency. The key problems with the cost base approach were set out in a report by Ove Arup, who were commissioned by Water UK to provide an audit on Ofwat's approach at PR99²². Ove Arup's report highlighted a number of shortcomings of the cost base approach, including:

- the subjectivity regarding the interpretation of the standard cost specification,
- the limited coverage of the standard costs in relation to companies' capital programme, and
- the variable quality of companies' cost data from which standard cost estimates are drawn.

On the basis of their review, the consultants concluded that the variation in companies' standard costs were not representative of companies' relative efficiency. A follow-up report by Ove Arup commissioned in the context of the 2004 price review in E&W concluded that only 40% of the cost base gap reflected relative efficiency²³.

2. *What other approaches to the assessment of the scope for capital efficiency would respondents suggest?*

In the absence of a robust methodology for assessing our capital efficiency, we propose the following approach (discussed in detail in Section B2 of our first draft business plan) which we would encourage the WIC to adopt:

- For the period 2002/03 to 2006/07, assuming that we will achieve the same level of efficiency as contractually agreed with SWS for the part of the programme that has been allocated to SWS (ACIP).
- For the period 2007-08 to 2009-10, using the capital efficiency target set out by Ofwat for our two primary project partners in SWS, United Utilities and Thames Water.

²⁰ Competition Commission (2002), "Sutton and East Surrey", p. 252

²¹ Ofwat (2004) Future Water and Sewerage Service Charges 2005-10, Final determinations, p. 153.

²² Ove Arup (1998), "Review of Ofwat Cost Base Submission"

²³ Ove Arup and EC Harris (2004), "Review of Cost Base Submission", Draft Final Report

- We believe this approach is robust because: (i) the contractually agreed rates with SWS represent a market-based estimate of the costs of delivering a capital programme in Scotland up to 2006/07; and, (ii) the rate of improvement over the subsequent period will represent (if accepted by UU and Thames) the “regulatory contract” agreed rates of our main project partners in SWS, UU and Thames. We therefore believe that our proposed approach based on market-based evidence represents a better way of assessing efficiency than application of Ofwat’s econometric and cost base models to Scottish Water.

CHAPTER 12: OTHER WAYS TO ASSESS CAPITAL EXPENDITURE EFFICIENCY

1. *Are there lessons that we should learn from the experience of other regulators?*

The WIC concludes from its survey of methods used by other UK regulators that

[...] there is no standard regulatory approach [to assessing the scope for capital efficiency]. Regulators have developed approaches that are tailored to the particular characteristics and asset bases of the industry they are regulating.

We agree that neither Ofwat’s approach nor that of any other regulator in the UK would qualify as the “standard regulatory approach” to assessing the scope for capital efficiency.

However, good practices in regulation should guide the WIC’s approach to setting efficiency targets. NERA (2002) assessed different regulatory approaches for Water UK.²⁴ As an output of this review, Water UK adopted a checklist of best practice to be followed in setting efficiency estimates. The checklist notes that, inter alia, company cost comparisons may be misleading about the efficiency factor (“X”) because inefficiency cannot be separated from unexplained costs, and because cost differences may not be able to be “caught up”. Instead, it would be better to focus on comparator company productivity changes over time, taking care to identify productivity effects from input price effects in interpreting unit cost reductions.²⁵

We also note there is asymmetry of risk in setting capex comparative efficiency targets (say “X”) that are either too low or too high. If the efficiency target is too demanding, this poses a significant risk to the financial sustainability of our business and services to customers. On the other hand, if the target is too lenient this implies customers will pay too much for their services. However, as long as Scottish Water has the appropriate incentives to reduce costs, we will move towards the least cost provision of water and sewerage services irrespective of “X”, and customers will benefit from lower charges at the next review when prices are re-set in line with costs. In short, there is asymmetric risk in setting efficiency targets, i.e. greater risk associated with setting an X which is too high, and this implies that the WIC should adopt a prudent approach in setting capex efficiency targets.

Finally, we note the regulatory framework should encourage us to seek the most efficient solution to delivering water and sewerage services. A regulatory framework that is transparent and

²⁴ NERA (2002) Setting X in a Price-cap regime, A Report for Water UK.

²⁵ NERA (2002) op. cit., Chapter 6; NERA (2004) Estimating Opex and Capex Efficiency, p.2

predictable, and provides appropriate incentive mechanisms for out performance will enhance efficiency. In this regard, we comment further on the WIC's proposals to create additional incentives through an out performance mechanism for capex (see Chapter 15).

CHAPTER 13: OUR PROPOSED APPROACH TO ASSESSING CAPITAL INVESTMENT EFFICIENCY

1. *Do respondents agree that there are benefits in using Ofwat's benchmarking techniques to assess the scope for Scottish Water to improve its capital efficiency?*

As we stated in our response to the first question for consultation of Chapter 11, Ofwat's benchmarking techniques for assessing the scope for capital efficiency improvements are problematic even when applied to companies in England and Wales. We believe replication of these techniques in Scotland would accentuate the difficulties with these two approaches. We discuss the particular difficulties regarding the application of these approaches in Scotland in our response to the following two questions.

2. *What are respondents' views on our proposed use of Ofwat's econometric models and cost base technique as the basis for establishing an efficient level of capital maintenance expenditure for Scottish Water? In particular, do our proposed adjustments to the econometric models appear appropriate? Are there other factors we should take into account?*

In our response to Chapter 11, we set out difficulties with Ofwat's econometric models and cost base technique to Scottish Water on general grounds. We comment here more specifically on the difficulties that would arise from applying Ofwat's methods for assessing capital maintenance efficiency to Scottish Water.

As the WIC notes himself, the long-term data Ofwat uses to populate its econometric models is not available to Scottish Water. The WIC acknowledges that "*as a result we are not able to use the models to compare Scottish Water's capital maintenance costs with the [E&W] companies' costs to determine relative performance over time*". The WIC believes, however, that he can "*use the models to predict the expenditure that Scottish Water should incur given its current asset base*", i.e. "*to establish how much Scottish Water should need to spend to maintain its assets if it were as efficient as the average company in England and Wales*"²⁶.

Thus, the WIC appears to state that although he cannot identify the relative efficiency of Scottish Water because of the lack of historic capital maintenance cost data, he can identify the explanatory variables to estimate our efficient level of costs. Thus, it appears that rather than applying a catch-up efficiency target, he will simply set an allowed level of expenditure. We foresee two difficulties with this approach. First, this approach does not make any comment on the required rate of improvement in efficiency, to enable an assessment of whether the allowed level of expenditure is realistic. Second, it is unclear to us how the WIC will combine his econometric results (which will provide a target level of expenditure) with the results from the

²⁶ WIC (2004), Chapter 13, p.104

cost base analysis (which will provide a required rate of change) to provide an overall allowed level of capital maintenance expenditure.

The shortcomings of cost base analysis are also accentuated when it is extended to Scottish Water. This is because:

- There is limited comparability between Scottish Water and E&W benchmarks in evaluating efficiency. For water and sewerage non-infrastructure, the cost base comparison is based on only five and eight observations respectively, although these expenditure areas relate to approximately half of Scottish Water's planned expenditure over SR06.
- The standard costs do not reflect Scottish Water's capital programme. In relation to the non-infrastructure programme, the standard costs cover less than one-third of the water non-infrastructure programme and less than one-tenth of sewerage non-infrastructure expenditure. Therefore, the standard cost approach involves significant extrapolation of results based on a small proportion of Scottish Water's actual programme.

As mentioned above, an external audit by Ove Arup for Water UK concluded that only 40% of the "residual gap" arising from the cost base analysis was explained by relative levels of efficiency. Given the limited comparability between Scottish Water and E&W standard costs, we believe that this will provide an upper estimate of the residuals attributable to inefficiency in the context of Scottish Water. Furthermore, we have serious concerns regarding the extension of Ofwat's capital maintenance models to Scottish Water because of the specific characteristics of Scottish Water's operating environment. We provide detailed comments in Appendix A.

With the adoption of the common framework approach to capital maintenance Ofwat have recognised the need for an increased level of capital investment to maintain assets. Capital Maintenance spending has therefore jumped from £6.41 bn in PR99 to £8.4 bn in PR04. Ofwat have also indicated that this is likely to increase further in PR09. As the econometric models predict investment based on historic levels their use to predict efficient levels would seriously penalise Scottish Water relative to funding levels provided by Ofwat.

3. What are respondents' views on our proposed use of the cost base as the basis for establishing an efficient level of capital enhancement spend?

We discuss the shortcomings of cost base analysis in our response to the previous question for consultation and to the first question for consultation of Chapter 11.

4. Are our proposed mechanisms for taking account of "special factors" appropriate?

We have two specific comments regarding the WIC's proposed approach to special factors. First, while we agree that any special factor claim needs to be carefully justified, we do not share the WIC's implicit presumption that *"special obligations, the character of all or part of [Scottish Water's] customer base, or the result of historical development of water and*

wastewater systems in its area of supply” exhaust the available justifications. For example, a special factor based on regional cost differences would not neatly fall into these categories.²⁷

Second, and more importantly, we note that other regulators, notably Ofwat, do not consider “negative” special factors in assessing comparative efficiency. We believe it is inappropriate to calculate our relative efficiency by comparing Scottish Water’s costs adjusted for negative special factors to benchmark costs in England and Wales which are not adjusted for negative factors.

We also disagree with the WIC’s assertion that the quality of our asset base, and historically low levels of investment in Scotland compared with England and Wales, do not comprise legitimate reasons for a higher level of capital maintenance expenditure in Scotland (see our response to Chapter 6).

We intend to provide a special factors submission relating to capital expenditure with the second draft business plan submission in April 2005. In our response to question 2 we have already highlighted some of the issues relating to the use of the Ofwat capital maintenance models within Scotland.

CHAPTER 14: SCOPE FOR AND PACE FOR IMPROVEMENT

1. Do respondents agree with our proposed approach to establishing the scope for improvement in capital efficiency?

The WIC proposes to take account of the following factors in determining the scope for Scottish Water to improve its capital efficiency:

- Evidence published by Ofwat on the performance of water and sewerage companies in England and Wales in improving efficiency.
- Evidence from Ofwat and its consultants (such as Europe Economics and London Economics) on the scope for further improvement in England and Wales.
- The WIC’s assessment of the efficiency gap between Scottish Water and the companies in England and Wales.
- The WIC’s assessment of the scope for Scottish Water to improve performance by adopting best practice techniques such as the UKWIR common framework and achieving economic levels of leakage.

The WIC has not commented on how he will reconcile these different approaches in setting the scope for efficiency improvements, for example, how he will reconcile the anticipated average industry rate of productivity improvement from the EE and LE studies, with results from comparative efficiency modelling. Scottish Water seeks clarification on WICS method to reconciling these different approaches. Notwithstanding the lack of detail, we believe that there are three important issues regarding the WIC’s proposed assessment of the rate of catch-up.

²⁷ As the WIC acknowledges on p. 110 of Vol. 5 of “Our work in regulating the Scottish water industry”, Ofwat (2004) accepted an argument by some companies that their construction, tender and labour costs were higher than those of other companies because of their location in the country. This argument does not neatly fit into any of the justification categories put down by the WIC.

First, regarding the use of empirical evidence of efficiency improvements in England and Wales, e.g. evidence compiled by Ofwat, it is important to distinguish between productivity improvements and input price changes in interpreting historic trends. If historic efficiency gains have been realised through falling input prices, these might not be repeated in the future.

Second, regarding evidence from Ofwat's consultants, EE's best estimate for the scope for efficiency improvements is 1.9% p.a. rather than the ranges set out by the WIC in Table 14.6 (with reported values from 1.5% to 4.25%), whereas, LE's best estimate for the scope for industry wide improvements is 0.7% p.a.²⁸

There is also wider evidence for the scope for overall efficiency which is not cited by the WIC, but was included in our draft business plan submission. These studies comprise a study by CEPA for Ofgem, NERA for Water UK, and an independent study by Saal and Parker. The range of studies supports a total factor productivity (TFP) value of 1.4% on average. (See Table 1.)

Table 1
Best Estimates of TFP for UK Water Industry

Author (Date)	Commissioning entity	TFP Estimate (% change p.a.)
NERA (2004)	Water UK	0.4
LE (2004)	Ofwat	0.7
CEPA (2004)	Ofgem	2.6
EE (2003)	Ofwat	1.9
S&P (2001)	Independent study	1.6
Average	-	1.4%

Source: NERA (2004) "Estimating Opex and Capex Efficiency", A Report for Water UK.

Third, we do not believe the WIC's econometric models or cost base approach provide a robust method for the assessment of comparative efficiency. We have previously commented on the shortcomings of these approaches in general, and the additional difficulties of extending these models to Scottish Water in Chapters 11 and 13.

Regarding the "pace of improvement", unfortunately, the WIC has not stated his position regarding the proportion of the "residual gap" arising from the econometric and cost base analysis that can be closed. However, the WIC has stated that the efficiency targets will be phased-in over a three-year period.²⁹

²⁸ EE's March 2003 report estimated real reductions in base opex and capital maintenance of 1.5% to 3% p.a. for water, and 1.75% to 3.25% p.a. for sewerage over the period 2003-13. (Note, the higher end ranges reported by the WIC relate to base opex reductions only, and are thus not relevant to capital efficiency.) EE were then asked by Ofwat to revisit their March 2003 conclusions. (See EE (November 2003) Office of Water Services PR04- Scope for Efficiency Improvement, Uncertainties and Measurement Issues). In this updated report EE concluded that their earlier central estimates of 2.3% p.a. (water) and 2.5% p.a. (sewerage) constituted an upper bound, and revised downwards their central estimate for water and sewerage efficiency to 0.6% p.a. net of economy-wide TFP. This equates to an efficiency target of 1.9% p.a. gross of economy-wide TFP. (See EE (November 2004) op. cit, p.5, para. 22.)

²⁹ WIC (2004) op. cit. p.117

We note the potential pace for improvement is bounded above by the proportion of residuals that are attributable to efficiency. Thus, it is important to re-iterate the results of the Cubbin and Ove Arup studies that have examined this issue. Professor Cubbin concluded that only 25-35% of Ofwat's econometric models' residuals were attributable to inefficiency. In a follow-on study, for Scottish Water, he estimated that the models were less suited to the particular operating characteristics of Scottish Water.³⁰ Ove Arup concluded that only 40% of the cost base difference could be attributable to inefficiency.

2. Do respondents consider that we should treat capital maintenance and capital enhancement expenditure separately?

In Chapter 14, the WIC writes that “we do not plan to distinguish between the scale and pace of improvement in capital maintenance and capital enhancement expenditure in setting targets”³¹. In Chapter 15, however, the WIC proposes to “adopt a different approach to setting targets for capital efficiency in capital maintenance and in quality enhancement expenditure”³². Thus, it is unclear to us what the WIC intends.

In our draft business plan we assume the scope for capital maintenance and capital enhancement expenditure is identical, and we profile this expenditure reduction over the period of SR06. We believe that this approach is appropriate. This approach is justified because a large component of the capital maintenance and capital enhancement programme involve similar activities; this is also consistent with Competition Commission's view that continuing efficiency is the same for both maintenance and enhancement expenditure³³.

3. Do respondents agree that our proposals for introducing an incentive mechanism for out performance will be in the interests of customers and stakeholders?

We agree that an incentive mechanism for out performance will be in the interest of customers and stakeholders. The WIC proposes that the details will be worked out following SRC06. Regarding the WIC's tentative proposals we note:

- We agree that any over (or under) performance on the capex programme should be used to supplement under (or over) performance on the opex side. This provides us with the flexibility to seek capital or opex solutions to achieve the least cost solution, and not be bound by the regulator's separate opex and capex allowances. This also then lends itself to the monitoring of overall targets for the business as a whole.
- There should be symmetry of treatment of over/underperformance. If Scottish Water has to bear the full risk of under-performance, it should retain the full benefit of over-performance. The WIC does not directly deal with the issue of potential underperformance relative to capex efficiency targets. We propose that any capex underperformance is treated in an identical way to over performance. That is, we propose that Scottish Water incurs a proportion of the cost of underperformance (25-50%), and the rest is passed onto customers (in the form of a higher RCV). This approach ensures symmetry in the treatment of capex under and over-spends. It is also consistent with the regulatory

³⁰ Professor John Cubbin (2004) [XX]

³¹ WIC (2004), “Our work in regulating the Scottish water industry”, Volume 5, Chapter 14, p. 117

³² WIC (2004), “Our work in regulating the Scottish water industry”, Volume 5, Chapter 15, p. 120

³³ Competition Commission (2000), Mid-Kent, p.252.

principle of “proportionality” because it ensures companies do not incur the full cost of capex not recognised at the review, with consequent financial risk.

- We do not agree with the WIC’s proposal to institutionalise the allocation of outperformance within the regulatory contract. We believe that there should be symmetry of treatment of underperformance and overperformance. Therefore it should rest with our owner alone to determine how the benefits from overperformance should be allocated during the period of the regulatory contract, which may include discretionary investment in extra outputs. At the time of the next regulatory review, the overperformance will be taken into account in applying benefits for customers.

4. *Do respondents agree that any failure to meet efficiency targets should be funded by grant-in-aid from the Scottish Executive?*

We disagree with the WIC’s proposed approach.

Efficiency targets are a regulator’s estimate of the achievable future costs of a regulated company. Over or under achievement of efficiency targets is both a function of company performance and the robustness of the regulator’s future cost assessments.

With regard to capital efficiency targets, we believe that Scottish Water should have a symmetrical opportunity/risk e.g. if Scottish Water are allowed to retain 50% of over-performance, they should be exposed to 50% of under performance.

To the extent that any under-performance occurs and requires to be financed by Scottish Water, the nature of that financing is a matter between Scottish Water and the Scottish Executive. Customers will be protected from Scottish Water’s share of any under-performance through the regulatory capital value mechanism. It is therefore beyond the remit of the Water Industry Commissioner to specify how that under-performance should be funded.

We would encourage the WIC to adopt the same process as in E&W for adjusting the RCV to reflect out-turn costs.

CHAPTER 15: SETTING TARGETS FOR EFFICIENCY IN CAPITAL EXPENDITURE

1. *Do respondents think that our proposed methodology for setting targets is robust?*

In Chapter 15, the WIC summarises his methodology for setting targets as follows:

For both capital maintenance and capital enhancement, the WIC proposes to

- Establish a fully defined investment programme
- Review the programme and establish a baseline

For capital enhancement, the WIC will

- Assess the current efficiency gap using the cost base approach

- Assess the scope for further improvement with reference to the targets set by Ofwat
- Establish the total allowance expenditure for capital enhancement

For capital maintenance, the WIC will

- Estimate the annual efficient level of expenditure for Scottish Water using Ofwat's econometric models
- Adjust the results to take into account special factors
- Check the adjusted results of the econometric models
- Use the cost base approach to assess the current efficiency gap
- Assess the scope for further improvement
- Use the cost base results to set an appropriate level of capital maintenance spending
- Finally, the WIC will set a total level of capital expenditure and final baseline of project with associated outputs.

We critically commented on the WIC's methodology for assessing Scottish Water's efficiency in our response to Chapters 11 and 13 and on the WIC's assessment of the scope for further improvement in our response to Chapter 14. We discuss the WIC's assessment of Scottish Water's investment programme and its treatment of overhang from Quality and Standards II in Chapter 8.

2. *Do respondents agree that we should take account of the 'critical factors' we have listed (Quality and Standards II overhang, limitations on the size of the programme and incentives to outperform) in setting investment targets for Scottish Water? Are there other factors that we should take into account?*

Yes

3. *Do respondents think that the scope for improvement is different between capital maintenance and capital enhancement and between water and sewerage?*

In our draft business plan, we do not adopt separate estimates for water and sewerage services and by base and enhancement expenditure. We believe this approach is appropriate. We note that many of the activities for capital maintenance and capital enhancement programme are identical, and therefore the scope for efficiency should also be identical. We also note that our approach is consistent with the Competition Commission's decision to set identical frontier efficiency improvements for capital maintenance and enhancement.³⁴

However, if WIC is to apply differential efficiencies, we note that the Common Framework Approach to Capital Maintenance Planning (CFACMP) already embodies strategic efficiencies (i.e. deferring work on assets in poor condition while they do not harm serviceability to customers) and we would seek reassurance that the inherent strategic efficiency of CFACMP has been taken into account in setting efficiency targets.

³⁴ See Competition Commission (2000) [XX]

CHAPTER 16: MONITORING CAPITAL DELIVERY

1. *What are respondents' views on our proposed approach to monitoring Scottish Water's investment performance?*

The WIC proposes to develop its framework for monitoring capital expenditure by:

- Reviewing the format for investment reporting in the Annual Return and Capital Investment Return to ensure that it is consistent with the format of the baseline investment programme
- Providing further independent assessment of the regulatory submissions by the Reporter
- Introducing a serviceability monitoring regime which is similar to that used by Ofwat
- Extending the stakeholder forum to ensure detailed performance monitoring
- Consulting with stakeholders on a mechanism for allowing projects to be substituted within the baseline programme
- Consulting with stakeholders on the mechanism for treating out performance of investment delivery

We agree with these proposals. We look forward to commenting on the WIC's proposals on mechanisms for substitution of projects within the baseline programme and on mechanisms for treating out performance of investment delivery.

2. *Is our regulatory reporting mechanism sufficient to meet the needs of both customers and stakeholders?*

We believe that the regulatory reporting mechanism is sufficient to meet the needs of customers and stakeholders.

APPENDIX A – ADDITIONAL COMMENTS ON ECONOMETRIC MODELS

In addition to the general comments made relating to the accuracy of the econometric models (both for Scotland and England and Wales) there are a number of issues which are specific to applying the Ofwat approach in Scotland.

The factors affecting capital maintenance in Scottish Water differ from those in the England and Wales water companies, giving rise to increased costs, for the following reasons:

- The sparsity of population has led to the need for a higher number of smaller treatment plants and storage reservoirs to serve isolated communities.
- The profile of raw water assets (e.g. intakes) is significantly different because of the differing sources of supply.
- Historical investment in water and sewerage assets has been at a lower level and has not been targeted at the same outputs.
- As a result of the condition of inherited assets Scottish Water must deal with a higher level of infiltration to sewers compared with E&W companies and this has a subsequent effect on the condition of assets and the cost of maintenance.

An initial review of the econometric model has also identified the following specific issues with the capital maintenance econometric.

Water Resources & Treatment Model

The Ofwat model estimates required investment based on the number of connected properties only, taking no account of the number of sources or facilities. Assessment of the raw water source and distribution system shows Scottish Water with more facilities per thousand connected properties than E&W companies with the exception of borehole sources. Scottish Water has developed an alternative model which takes resources into account and correlates well with the output of the Ofwat model in predictions for E&W companies. This model shows that the Ofwat model underestimates the Scottish Water capital maintenance requirement for water resource and treatment by some £20m.

Water Distribution Infrastructure Model

The econometric model reflects the current investment levels in England and Wales

Scottish Water inherited an ageing infrastructure network with a significantly higher level of leakage per property than E&W companies. Reducing leakage will require an increased rate of spend relative to England and Wales companies who are now generally operating at an equilibrium position. Under Q&SII Scottish Water has an obligation to renew or replace target lengths of water main. This obligation currently requires an investment level above that predicted by the Ofwat econometric model.

Water Distribution Non-infrastructure Model

The Ofwat econometric water distribution non-infrastructure model uses water service reservoir capacity as an explanatory variable. This takes no account of the number or size of individual reservoirs. Scottish Water has a high number of small volume service reservoirs. Maintenance

of service reservoirs involves structural maintenance of walls and roofs and reservoir related pipework. The capital maintenance cost is therefore more directly related to the surface area and number of reservoirs. In serving the sparse population in the rural areas particularly in the highlands Scottish Water has a higher proportion of service reservoirs and small reservoirs per head of population than England and Wales companies. This leads to a greater structural area and more pipework to be maintained per head of population with consequent higher costs. An initial assessment of the increased capital maintenance costs incurred by Scottish water as a result of the number and size of its service reservoir assets is £1.3m.

Water Management & General

The econometric model reflects the spend level required by companies operating in England and Wales. Scottish Water supplies a customer base spread across a land area equivalent to over 50% of England and Wales. Of necessity we therefore require more vehicles and buildings per property due to the geographical area served than equivalent companies in England and Wales.

Sewerage Infrastructure

WIC states that combined sewers have higher maintenance costs than foul sewers and that the model uses the number of CSOs as a proxy for the length of combined sewers.

Scottish Water has responsibility for approximately 16,000 km of lateral sewers. Lateral sewers are an additional obligation on Scottish Water over and above E&W counterparts. They constitute a third of the network and are almost entirely combined sewers. The use of CSOs as a proxy to estimate the length of combined sewers is therefore likely to provide an under estimate in the case of Scottish Water.

Scottish Water also currently reports a significantly smaller portion of critical sewers than E&W companies. We consider that this may well be due to differences in interpretation or under recording in Scotland. We will update this information in the June 2005 return.

Sewage Treatment

The sludge treatment and disposal model estimates investment levels based on expenditure per weight of sludge dry solids. Scottish Water has a lower weight of dry solids per head of population than any E&W company which results in a lower than expected total dry solids weight. Scottish Water intends to investigate this further and will provide an update with the second draft business plan submission.

Sludge Treatment

Comments as per Sewage Treatment model

Sewerage Management & General

Comments as per Water Management & General

APPENDIX B – FUNDING OF LEAKAGE IN ENGLAND & WALES

How have E&W companies been able to tackle leakage?

Companies in the E&W water sector have had the funding and opportunity over time to reduce leakage. It is therefore not surprising that there are lower levels of leakage in E&W, relative to Scotland. The ways in which E&W companies have been funded to tackle leakage over time are as follows:

In the periodic reviews, funding allowances have been made for maintenance of the network, including allowances for tackling bursts. The assumed base level of service has subsequently ratcheted up at periodic reviews. Historically, Ofwat has used a top-down ‘serviceability’ methodology for assessing maintenance needs. For the 2004 review (PR04), companies have been developing a ‘common framework’ approach to maintenance;

Funding through the quality programme has had overlaps with the maintenance programme. For example, replacement of old iron pipes over the 1990s, for water quality reasons, had the additional benefit of improving the overall condition and reliability of the network, with the effect of reducing leakage in E&W;

in the 1999 periodic review (PR99), Ofwat made funding allowances available to certain companies for improving security of supply. Companies would have targeted leakage reduction, as part of their strategy.

Moreover, companies in E&W have, over time, had the opportunity to reduce leakage, even though this has been assumed by Ofwat to not have a direct effect on bills:

companies in E&W have been able to reinvest efficiencies in leakage reduction over time;

in PR99, companies needed to weigh-up different options for addressing the supply-demand balance, as part of a least cost strategy. By targeting an economic level of leakage (ELL), leakage reduction formed part of this strategy. Other options would have included demand management, pressure reduction, optional metering, targeted metering, leakage reduction, distribution enhancements, bulk supplies, extension of existing resources and new resources.

There is a debate in E&W as to how much supply-demand balance expenditure requires funding and how much is self-financing. For example, Ofwat argued in PR99 that increased demand due to new development or growth in demand (excluding optional metering) did not have a net effect on bills.³⁵ Ofwat looked set to modify its stance in PR04, in particular for companies with a large unmeasured customer base.³⁶ In PR99, Ofwat also argued that targeting an ELL should not have a net impact on bills (since the reduction in distribution input reduces costs elsewhere), although targeting a level of leakage below the ELL might.³⁷ For companies lying significantly above the ELL, however, it is arguable that there could be a net impact on bills of reducing leakage. Notwithstanding these points, which remain contentious in E&W, the PLCs have still had the opportunity over time to reduce leakage.

³⁵ See Ofwat (1999) ‘Final determinations: future water and sewerage charges 2000-05’, November.

³⁶ See Ofwat (2003) ‘Setting water and sewerage price limits for 2005-10: Framework and approach’, March.

³⁷ See Ofwat (1999) *op cit*.

As highlighted above, Thames Water has particularly high leakage relative to the E&W average. In its final business plan for PR04, Thames has proposed replacing over 1000 miles of mains in inner London hotspots, to renew the network and to tackle leakage. Additional funding is also being sought for by the company for resource enhancements. Scottish Water will also need sufficient funding over time for it to reduce its inherited leakage problem.

APPENDIX C – COMMENTS ON VOLUME 5 APPENDIX 1: INVESTMENT PLAN DEFINITIONS

Introduction

Cost base is at average 2003-04 prices – how are we to inflate the Q&SII element to this cost base?

Column Definitions

Column 5 – can a category of Gen be allocated for M&G instead of allocating it to Non-infra

Column 9 – some projects may be a mix of Scenarios e.g. capital maintenance and quality enhancement. For these combined projects do we use the dominant scenario?

Column 14 – Project location, we recommend allocating by:

Enhancement – by Local Authority

Capital Maintenance – by Scottish Water operating area

M&G – by Scottish Water operating area

Column 28 – This will be an estimate based on a notional solution from the process selection matrix. It may move from a bolt-on to a step change in the process this will have a significant effect on the impact of the GEARC of the total asset base.

Project driver information

As agreed at the SE meeting attended by SE/WICS/SEPA/DWQR/SW the allocation of cost to multiple drivers within a project is based on an equal portion for each driver. A paper was submitted by Scottish Water on the approach to costing in November 03 outlining the various options including marginal costing which would have required a driver hierarchy from both SEPA and DWQR. Scottish Water was told that the purpose was to inform the Minister of the costs between scenarios not across individual drivers – as such it would be acceptable to divide the cost by the number of drivers.

As stated in Section 9.4 for the AMP4 process Environmental drivers were initially ranked by the EA and companies were asked to first assign costs to the highest ranked driver. The costs assigned to the next highest ranked driver were then the net additional costs of delivering these improvements over and above those delivered by the highest ranked driver, etc. Scottish Water explained this process at the meeting in November 03 but were instructed to proceed on the above basis. The costing system used by Scottish Water can allocate costs as per the AMP4 process but we will require the driver hierarchy from SEPA/DWQR and additional time to revisit the projects and allocate the costs.

Table E

Do we retain Q&SII drivers/outputs or have we to convert to Q&SIII equivalents?

Drivers

CS10 has been removed – this was a driver where spend had been allocated in our first draft BP. We ask that this is reinstated.

There are no growth drivers

Outputs

We would like to record general concern regarding outputs – some examples of issues below

DW17 and DW18 have Pe as an output

DW9 only has number of sites made compliant – this requires to be broken down into no of TWS sites, no of chlorine stores, no of EKP sites etc

DW15 – Should be no of recommendations from reports implemented

DW17 – Should be no of x connections disabled or addressed

DW21 – Should also have no of critical sections duplicated as these will be expensive items (pipe bridges, critical valves etc) and we will not gain an output for these as things stand

Environmental outputs should be no. of unsatisfactory intermittent discharges addressed - not Pe benefiting from work

CS11 only states no. of properties removed from at risk register but we will be addressing 4 areas:

- No. of internal properties
- No. of external properties
- No. of highway flooding problems
- No. of other flooded areas
- There are no growth outputs

³⁸ Ref our previous submissions

³⁹ NERA (2002) Setting X in a Price-cap regime, A Report for Water UK.

⁴⁰ NERA (2002) op. cit., Chapter 6; NERA (2004) Estimating Opex and Capex Efficiency, p.2

⁴¹ As the WIC acknowledges on p. 110 of Vol. 5 of "Our work in regulating the Scottish water industry", Ofwat (2004) accepted an argument by some companies that their construction, tender and labour costs were higher than those of other companies because of their location in the country. This argument does not neatly fit into any of the justification categories put down by the WIC.

⁴² WIC (2004) op. cit. p.53

⁴³ NERA (2002) Setting X in a Price-cap regime, A Report for Water UK.

⁴⁴ NERA (2002) op. cit., Chapter 6; NERA (2004) Estimating Opex and Capex Efficiency, p.2

⁴⁵ As the WIC acknowledges on p. 110 of Vol. 5 of "Our work in regulating the Scottish water industry", Ofwat (2004) accepted an argument by some companies that their construction, tender and labour costs were higher than those of other companies because of their location in the country. This argument does not neatly fit into any of the justification categories put down by the WIC.

⁴⁶ SW (2004) op. cit. p.69

⁴⁷ See SW (November 2004) Scottish Water response to the Water Industry Commissioner for Scotland's in our work in regulating Scottish Water industry, p.22.

⁴⁸ Scottish Water (2004) Annual Return 2003/04, Section 8.

⁴⁹ Ref WIC document page number 38

⁵⁰ WIC (2004) op. cit. p.53

⁵¹ WIC (2004) op. cit. p.65

⁵² WIC Volume 5 page 62; commentary on Table 6.6

⁵³ Number of works includes outfalls

⁵⁴ Scottish Water Annual Return 2004

⁵⁵ See WIC (2004) op. cit. Table 6.5, on p. 61

⁵⁶ WIC Volume 5 page 62; commentary on Table 6.6

⁵⁷ We have previously documented our concerns in our Annual Report. See Scottish Water (2004) Annual Return 2003/04

⁵⁸ WIC (2004) op. cit. p. 59

⁵⁹ WIC (2004) op. cit. p. 57

⁶⁰ WIC (2004) op. cit. p.65

⁶¹ Scottish Water, unlike WaSCs in England and Wales, has responsibility for the parts of the sewer network, termed 'laterals', which run between the main sewer and the edge of customers' properties. These laterals account for around 10,000km of the total sewer length.

⁶² See WIC (2004) op. cit. Table 6.5, on p. 61

⁶³ We have previously documented our concerns in our Annual Report. See Scottish Water (2004) Annual Return 2003/04

⁶⁴ WIC (2004) op. cit. p. 59

⁶⁵ WIC (2004) op. cit. p. 57

⁶⁶ E&W data for Year 2002-03, SW data for year 2003-04

⁶⁷ For more details, see Scottish Water (2004) Draft Business Plan, Appendix X9

⁶⁸ Competition Commission (2002), "Sutton and East Surrey", p. 252

⁶⁹ Ofwat (2004) Future Water and Sewerage Service Charges 2005-10, Final determinations, p. 153.

⁷⁰ Ove Arup (1998), "Review of Ofwat Cost Base Submission"

⁷¹ Ove Arup and EC Harris (2004), "Review of Cost Base Submission", Draft Final Report

⁷² NERA (2002) Setting X in a Price-cap regime, A Report for Water UK.

⁷³ NERA (2002) op. cit., Chapter 6; NERA (2004) Estimating Opex and Capex Efficiency, p.2

⁷⁴ WIC (2004), Chapter 13, p.104

⁷⁵ As the WIC acknowledges on p. 110 of Vol. 5 of "Our work in regulating the Scottish water industry", Ofwat (2004) accepted an argument by some companies that their construction, tender and labour costs were higher than those of other companies because of their location in the country. This argument does not neatly fit into any of the justification categories put down by the WIC.

⁷⁶ EE's March 2003 report estimated real reductions in base opex and capital maintenance of 1.5% to 3% p.a. for water, and 1.75% to 3.25% p.a. for sewerage over the period 2003-13. (Note, the higher end ranges reported by the WIC relate to base opex reductions only, and are thus not relevant to capital efficiency.) EE were then asked by Ofwat to revisit their March 2003 conclusions. (See EE (November 2003) Office of Water Services PR04- Scope for Efficiency Improvement, Uncertainties and Measurement Issues). In this updated report EE concluded that their earlier central estimates of 2.3% p.a. (water) and 2.5% p.a. (sewerage) constituted an upper bound, and revised downwards their central estimate for water and sewerage efficiency to 0.6% p.a. net of economy-wide TFP. This equates to an efficiency target of 1.9% p.a. gross of economy-wide TFP. (See EE (November 2004) op. cit. p.5, para. 22.)

⁷⁷ WIC (2004) op. cit. p.117

⁷⁸ Professor John Cubbin (2004) [XX]

⁷⁹ WIC (2004), "Our work in regulating the Scottish water industry", Volume 5, Chapter 14, p. 117

⁸⁰ WIC (2004), "Our work in regulating the Scottish water industry", Volume 5, Chapter 15, p. 120

⁸¹ Competition Commission (2000), Mid-Kent, p.252.

⁸² See Competition Commission (2000) [XX]

⁸³ See Ofwat (1999) 'Final determinations: future water and sewerage charges 2000-05', November.
⁸⁴ See Ofwat (2003) 'Setting water and sewerage price limits for 2005-10: Framework and approach', March.
⁸⁵ See Ofwat (1999) *op cit.*

Katharine Russell
Water Industry Commissioner for Scotland
Ochil House
Springkerse Business Park
STIRLING FK7 7XE

28th January 2005

Dear Ms Russell

WIC Consultation on SRC Methodology

Thank you for giving SEPA the opportunity to comment on the WIC's consultation document, "Our work in regulating the Scottish water industry: the scope for capital investment efficiency," which sets out the proposed methodology for the Strategic Review of Charges 2006-10.

We welcome the opportunity to comment on these proposals. In general the approach is fair, proportionate and will provide the basis for a clear, transparent and accountable investment programme for Scotland's water services provider, Scottish Water.

In particular we welcome the proposals for increased involvement and co-ordination between Scottish Water's regulators to ensure the required outputs have been adequately determined and to monitor progress to their delivery.

We have provided responses to any relevant questions posed by the consultation, by reference to the relevant page number, in the attached Annex which we hope are constructive and useful.

We look forward to seeing the final methodology for the Strategic Review of Charges and discussing some of the consultation's proposals with you further in due course.

Yours sincerely,

Martin Marsden
Water Unit Manager

SEPA Response to the WIC Consultation, “Our work in regulating the Scottish water industry: the scope for capital investment efficiency.”

Page 71 – Q1	<p>SEPA strongly supports the need for a final investment programme that is defined in detail at an asset level. This provides clarity on the scope of schemes that form part of the investment programme and when delivery of these can be expected.</p> <p>There will be some schemes where further definition of the investment requirements is needed. This particularly applies to investment in unsatisfactory collecting systems, first time sewerage provision and water resource assets. In these instances, a timetable and sign-off process is needed to ensure that Scottish Water and its regulators have an agreed view of what the work entails.</p>
Page 71 – Q2	<p>In line with the approach taken to the development of the Q&SIII projects, from which the final reports identifying investment needs will be available to the public, the final investment programme should also be placed in the public domain. This will provide the accountability and clarity expected of a public company.</p> <p>An appropriate substitution process is required to allow flexibility within the programme. The rules for this substitution process are being developed, building upon the approach taken in Q&SII. It is important that the substitution rules and resultant changes to the list of assets are also made public.</p>
Page 50 – Q1	<p>SEPA agrees with the proposed approach to assessing Scottish Water’s quality investment programme, which should provide an adequate check of the main issues relating to the costing methods, assumptions and standards used by Scottish Water to establish the investment costs of environmental legislation.</p>
Page 55 – Q1	<p>SEPA supports the development of an approach to water resource planning that seeks to minimise both the economic and environmental costs as set out in section 5.2.3. This will require a water resources plan of sufficient resolution to identify the specific investment options in demand management and resource development for individual resource zones. We also support the view that such a plan needs to address the long term nature of managing water resources and that a minimum of 20 years is appropriate. SEPA is currently developing guidance to SW on the production of a water resources plan and are in contact with the WIC’s office regarding this. SEPA sees merit in developing a common planning framework with the WIC along the same lines as that which exists between Ofwat and the EA and we would welcome further dialogue on this issue.</p> <p>SEPA agrees that the current level of leakage is inefficient in both economic and environmental terms. We support the objective of using the water resources planning process to provide a robust calculation of the economic level of leakage and the setting of a clear timetable, based on the</p>

	use of leakage targets, for the ELL to be achieved.
Page 71 – Q1	SEPA supports the need for a baseline investment programme detailing, at a project level, the deliverables from Scottish Water's capital expenditure. Experience from Q&SII has made it difficult to provide effective advice, support and regulatory control (through the issue of consents) over such projects without a clear understanding between all parties as to what has been agreed as environmental quality improvements.
Page 71 – Q2	In line with Freedom of Information requirements placed on public bodies, SEPA believes it would be prudent for the investment programme to be published as part of Scottish Water's list of publications to ensure its stakeholders are able to easily access this information.
Page 71 – Q3	SEPA is aware of a number of investment needs that will require a long lead-in time to deliver the required investment in time with the deadlines required by European legislation. It would, therefore, be advantageous to have an "early-start" programme for these types of schemes, especially for improvements to collection systems. We are also conscious that any overhang from the Q&SII programme could result in EU deadlines being missed. SEPA therefore supports the need for an "early-start" programme where this can be reconciled, at a project level, against the Q&SII programme to ensure compliance with regulatory drivers is maximised.
Page 76 – Q1	<p>SEPA is conscious that the overhang from Q&SII is likely to be significant. This has the potential compromise achievement of EU deadlines, both from the Q&SII and Q&SIII investment periods.</p> <p>SEPA believes that a project level prioritisation exercise is therefore required to manage the delivery of any Q&SII overhang alongside schemes with an early deadline in the Q&SIII programme. SEPA is keen to use the stakeholder group to manage this process, monitor progress and consider candidates for substitution.</p>
Page 82 – Q1	In general SEPA supports the level of detail suggested for the baseline investment programme. Lessons from Q&SII have highlighted the need to provide the discharge quality standards that will need to be met. The provision of information on the drivers for investment, by scheme, was insufficient and we are concerned that no mention of standards has been made as part of the definition. Similarly, this information would also be required to measure delivery of projects relating to water resources.
Page 82 – Q3	Development of the investment needs and related costs of environmental quality component of the Q&SIII project has been carried out at a level of detail equivalent to that set out in Chapter 9 of the consultation document. As information has already been collected at this level of detail we believe the reporting burden on Scottish Water would not, therefore, be overly onerous.
Page 86 – Q1	SEPA supports the proposed use of an independent Reporter to carry out the

	process of verifying Scottish Water's capital investment proposals.
Page 86 – Q2/3	The proposals to involve SEPA in the review provide an adequate opportunity for SEPA to confirm the investment programme conforms to the investment needs developed as part of the Q&SIII project and will deliver the standards, assumptions and solutions used as part of this process. SEPA should also be able to establish whether they are in line with the Ministerial Guidance.
Page 119 – Q3	<p>SEPA strongly supports the proposals for an incentive mechanism for out-performance, which provides a share of any savings for Scottish Water, customers and additional schemes identified by Q&SIII.</p> <p>SEPA considers that the current approach to savings within Q&S II has failed to ensure that money is spent efficiently for the benefit of Scottish Water customers. In Q&S II there is a perverse incentive for Scottish Water Solutions to minimise investment in an asset so as to maximise profits. Scottish Waters Solution's behaviour in negotiations with SEPA has on occasions appeared to reflect this financial incentive. Similarly there is an incentive for SEPA to maximise the investment in an asset to ensure a maximum environmental benefit at that specific site.</p> <p>A system which allowed a proportion of the resources saved at an asset to be redirected towards other, currently unfunded, schemes would enhance the programme's cost effectiveness. It would be in the interests of SEPA and Scottish Water to limit the investment at a site to that which would deliver the best balance between costs and benefits. SEPA would want to see additional investment in other assets which would enhance the overall environmental benefits of the programme. Scottish Water would want to see further investment in additional assets both because of a desire to deliver further environmental benefits and because they would be supported by the financial benefits of doing so.</p> <p>This proposal is particularly important given the very large number of statutory environmental investment requirements. The consequence of following this approach will be additional environmental benefits and a reduction in pressure for higher bills for Scottish Water customers in Q&S IV.</p> <p>In summary, SEPA welcomes this innovative proposal and considers that the resultant financial incentives will promote good investment practice by both Scottish Water and the regulators. It is stressed that the extent to which the financial structure promotes good investment practice depends upon the proportion of any savings which will be directed to new investment. SEPA urges WIC to direct a large proportion of any savings back to investment in assets.</p>
Page 126 – Q1/2	SEPA believes the general approach to monitoring Scottish Water's investment performance is adequate. However, it would be useful to explore the potential for inclusion of regulatory indicators in the reporting

	<p>process. We envisage that a substitution process will again be necessary for the Q&SIII programme and SEPA will need to play a key role in the approval of schemes as part of this process. Lessons from Q&SII have identified the need to interact at various stages with the development of environmental quality schemes, primarily to ensure they meet the outputs required and to prevent any delay as part of formal licence application or appeal processes.</p> <p>SEPA considers that a more formal process of joint monitoring by the regulators of the <u>development</u> by Scottish Water of the Q&S III programme will ensure that there is more effective joint planning. This will avoid the type of situation experienced in Q&SII where, for example, large numbers of consent applications were submitted late in the process.</p> <p>With this in mind it would be useful to consider whether information on the status of quality schemes that will be subjected to regulatory control could include a range of status measures.</p>
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27th January 2005

17 January 2005

Katherine Russell
Director of Corporate Affairs
Water Industry Commissioner for Scotland
Ochil House
Springkerse Business Park
Stirling FK7 7XE

Dear Katherine

The scope for capital investment efficiency: WIC paper 5

This letter provides Water UK's comments on the issues raised in this paper.

We were disappointed with the paper. Although it asks the right questions it does not provide the right sort of analysis to support the conclusions. The claim that there is no backlog of investment in Scotland is not based on well researched evidence. The feasibility or deliverability of the programme will depend very much on local circumstances and cannot be judged from what has happened in England and Wales.

The paper also adopts Ofwat methodologies on capital maintenance efficiency analysis without challenge or appropriate modification, despite the well established problems with these techniques. These problems have been documented in reports for Water UK available on our website.

Executive summary: specific comments

Page 4. The limited evidence provided does not justify the conclusion drawn that a backlog does not exist. In the 1980s the level of capital expenditure in England and Wales was squeezed hard by the government of the day. The existence and extent of a backlog should be derived from objective analysis, for example by applying the common framework that we understand the WIC supports.

Continued...

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Page 5. We don't believe that the analysis shows that Scottish Water has delivered Q&S II inefficiently – a claimed inefficiency of £10m or around 1% is well within the margins of error of this sort of analysis.

Page 6. The analysis does not show that there is a limit on the size of the feasible capital programme. Simply comparing the size of the potential Scottish programme to the historical spend for England and Wales is insufficient. Again the key evidence to look at is rather different; it could be the managerial and technical capacity of Scottish Water, and capacity constraints in the supply sector.

The information on maximum two year increases in capex set out in Chapter 6 is interesting but indicates only that there is a question to be considered, it does not provide an answer.

The detailed monitoring approach to the capital programme, covering both inputs and outputs set out in Chapter 9 appears to be far too intrusive and amounts to micro management of Scottish Water by the regulator.

Page 7. We do not believe that Ofwat's capital maintenance econometrics or the cost base approach are properly fit for purpose. The degree to which they are fit for purpose does depend on how the regulator uses them – if he is sensitive to the limitations of the techniques and makes judgements influenced by their degree of reliability, then that is acceptable.

The capital maintenance econometric models have poor explanatory power and omit key explanatory variables. A significant proportion of the model residuals reflect statistical error rather than inefficiency.

The Competition Commission in 2000 concluded that the capital maintenance models are less robust than the opex models. Professor Cubbin's study for Water UK concludes that only 25% and 35% of the assessed efficiency gap for water and sewerage respectively is attributable to inefficiency.

The cost base approach has a number of shortcomings leading to variability in the data collected from companies that does not reflect inefficiency.

Continued...

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The “standard” cost specification can be interpreted in a number of ways, there are alternative process solutions and sources of data. The most recent report from Ove Arup for Water UK (September 2004) concludes that only a limited proportion, between 5% and 40%, of the cost base gap reflects inefficiency.

Questions for consultation

We have focused on the most important questions.

Q3 We support the common framework approach

Q9 and Q32 We find the distinction between capital maintenance and capital enhancement artificial and do not think the use of different targets is appropriate

Q20 We support the use of reporters as long as they add value to the process. This is in the hands of the regulator, it is important that he accepts the judgements of the reporter and does not seek to double guess his conclusions – or use the reporters view selectively.

Q24-30 The WIC should use existing Ofwat efficiency approaches with caution. These have received little updating since 1999 despite their clear problems.

Q33 We support an incentive based approach but were disappointed that the paper does not set out formal proposals.

Yours sincerely



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Appendix 3

Open letter dated 10 May 2005

**WATER INDUSTRY
COMMISSIONER
FOR SCOTLAND**

Date: 10 May 2005
OurRef: AS/090505/LM

Mr Lewis Macdonald MSP
Deputy Minister for the Environment & Rural Development
The Scottish Parliament
Edinburgh
EH99 1SP

Dear

Strategic Review of Charges 2006-10

Thank you for your letter of 9th February with which you enclosed the Scottish Executive policy statement that underpins the strategic review of water charges for the period 2006-2010. In summary, your objectives are to improve service to Scottish Water customers, improve water and waste water quality and remove development constraints. Your objective is that we should achieve this within a regime of stable prices for consumers.

Scottish Water has submitted its second draft business plan and we are due to publish this on 16 May. This open letter outlines our approach and our preliminary analysis of the Scottish Water draft business plan.

Taking forward the review

I remain confident that ministerial objectives can be achieved at significantly lower costs than those currently contained in Scottish Water's business plan. I would expect that the draft determination will allow much lower costs in all areas of the business.

As you are aware, Scottish Water's draft business plan indicates an 88% real increase in water charges to domestic customers to fund a £3.0 billion capital programme. This plan would deliver only your essential objectives.

In light of comments and advice from SEPA, the DWQR and the Reporter, I will prepare for public consultation by 30 June a draft charges determination that is consistent with your guidance. I cannot, of course, pre-empt either my analysis or the conclusions that I will reach in my draft determination. However, I can reassure you that I remain confident that a significant increase in investment is consistent with the prospect of stable prices to customers. Perhaps the best reassurance that I can offer you is that regulators have often very substantially reduced the cost of capital investment programmes without impacting the outputs that are delivered. My team and I are working to define the proper scope and efficient cost of the investment programme required to deliver your objectives.

WATER INDUSTRY COMMISSIONER FOR SCOTLAND

Incentive based economic regulation

In my letter to you of 2 December, I described how an incentive based approach to economic regulation serves the interests of customers. Under this approach, the UK utility regulators encourage efficiency by setting limits on charges or prices that are based on targets for performance that are challenging, but which at the same time the regulated business is considered to be capable of out-performing. The business has the incentive to meet its targets as efficiently as it can manage because it is permitted to retain the difference between the revenue from the limit on charges and the actual cost of meeting its targets. The benefit to the customer is that charge limits in the following regulatory period are set to reflect any extra efficiency gains secured by the business in the preceding period. Over time, this approach delivers higher standards at lower cost than does regulation based on setting higher, more aspirational targets.

Glas Cymru, the Welsh not for dividend water company, has responded to Ofwat's incentive based regime by using some of the proceeds of the out-performance that the regime has encouraged to provide rebates on its charges to customers within a regulatory control period. In Wales, customers have now enjoyed two such rebates. In addition, they have been shielded to an extent against the risk of external shocks to the business through the creation of a reserve that has been built up from the remainder of the proceeds of out-performance. We believe, from a customer perspective, that there is much to commend this approach.

Scottish Water, in its response to my letter of 2 December 2004 and again in its second draft business plan, has suggested that there should be an appropriate incentive progressively to achieve improved efficiency. I believe that we can develop a model of incentive based regulation that will serve the interests of Scottish Water's customers.

Your statement on the principles of charging puts in place a key requirement for such an approach to work. The statement confirms that customers will not be required to pay for the same benefit twice, and that the Executive will not increase its lending to Scottish Water to meet the cost of objectives whose achievement has already been funded through agreed levels of Executive lending and the charge limits set in a determination. As the statement observes, this provides Scottish Water with firm financial limits within which it must operate during the regulatory control period.

For this review I propose to build on the approach of Glas Cymru and take full account of the specific circumstances of Scottish Water. My approach will be in line with the new Water Industry Commission's duty to set prices that are consistent with Scottish Water delivering the required level of service at lowest reasonable overall cost. The charge caps that I will include in the draft determination will reflect the minimum level of performance that customers should expect Scottish Water to deliver. The draft determination will also indicate the potential for Scottish Water to deliver the required level of performance at an even lower cost. In line with the statutory requirement to set prices consistent with lowest reasonable cost, I believe it would be appropriate to adjust price caps downwards in subsequent years to reflect the extent to which this scope for greater efficiency is actually achieved. The first annex to this letter sets out the mechanisms that would be used. I will set out in the draft determination a clear

**WATER INDUSTRY
COMMISSIONER
FOR SCOTLAND**

process by which subsequent years' charge caps during the 2006-10 regulatory control period could be adjusted downwards. I believe that this approach is consistent with your statement.

Clearly it is important that transparent and effective incentives are put in place to encourage Scottish Water to deliver the required level of performance at this lower cost. This will mean the Executive, Scottish Water, and the regulators establishing satisfactory measures of its delivery of specified outputs. The success of Scottish Water's management should be judged by the extent to which it delivers these outputs so as to enable subsequent years charge caps to be adjusted downwards. The detail of the incentives for Scottish Water's managers would be a matter for the Executive and Scottish Water to settle in the particular context of a publicly owned business. I would simply comment that any approach would need to be founded on the principle of bonuses only being paid once Scottish Water's performance had exceeded the minimum acceptable level of performance set in the charge determination.

In the longer term, I believe it could also be desirable to develop a further mechanism which could allow some of the surpluses resulting from out-performance to be retained by Scottish Water. In a similar public sector context, the Post Office established the practice of building up a discrete and separate reserve by using part of its surpluses to buy index-linked gilts. (A summary of this practice is attached as a second annex to this letter.) In this regard, it will also be important to decide how Ministers' objective that customers do not pay twice for the same output would be implemented in practice.

Developing this approach to the situation of Scottish Water, which I understand would be permissible under the terms of the Water Industry (Scotland) Act 2002, would have a number of advantages for the business and its customers. It would create a buffer against external shocks, such as the cost of responding to prolonged adverse weather conditions, which would protect the customers from the need to pay sudden and unexpected increases in charges. I recognise that this buffer, whilst vital to stable prices in the long run, would take some time to implement in an appropriate and effective manner. If you are content, I propose working with your officials on plans to start building up such a buffer for the 2010-14 regulatory control period.

**WATER INDUSTRY
COMMISSIONER
FOR SCOTLAND***Conclusion*

Our work in producing the Strategic Review of Charges 2006-10 continues to progress well. I remain confident that a significant increase in investment is consistent with the prospect of stable prices to customers. Value for money in the medium term will also be enhanced by the introduction of the measures associated with incentive based regulation that I have outlined

I am sending copies of this letter to the Chairman of Scottish Water, the Chairman of SEPA and the Drinking Water Quality Regulator for Scotland.

Yours sincerely,

Alan D A Sutherland

Annex 1

The customer benefit mechanism

The customer benefit mechanism

Objective

To ensure prices are set at a level consistent with services being delivered at lowest reasonable cost.

Aim of Water Industry Commission's analysis

Assess whether the minimum acceptable level of performance (ie the level of customer service, the level of environmental/public health compliance and level of cost that underpin the price caps set out in the determination) has been achieved.

Annual adjustment downwards of prices to reflect financial out-performance

Annual review of performance on the capital programme indicating any variance from the agreed delivery profile (including any implications for public expenditure).

Mode of operation

The annual costs and performance report would set out the financial performance of Scottish Water for the financial year. This would reveal whether Scottish Water had achieved the minimum acceptable level of performance and identify the scope to reduce price caps in the subsequent year. For example the costs and performance report 2006-07 (the first year of the next review period) will be published in October 2007. This will provide sufficient time for the charges scheme for 2008-09 to reflect lower price caps than indicated in the determination if Scottish Water has been successful in achieving the required level of service and environment/public health compliance at lower cost than agreed in the original regulatory contract..

The annual levels of service report will set out our overall performance assessment. It will be a condition of the regulatory contract that the OPA score improves year on year. Key performance indicators for management should reflect this.

The annual investment and asset management report will set out our assessment of the delivery of the planned capital programme.

It may also be appropriate to consult SEPA and DWQR to ensure that they are content with the level of compliance achieved by Scottish Water relative to their expectations at the start of the review period.

If Scottish Water were to reduce its operating costs by £10 million more than was included in price limits, this £10 million (less an amount agreed between the Scottish Executive and the remuneration committee of Scottish Water to finance employee bonuses) would be returned to customers in the form of a lower price cap in the subsequent year. It may also be possible to allocate a proportion to Scottish Water for use as "spend to save".

If Scottish Water delivers its planned capital programme at £10 million less than was included in price limits, the Regulatory Capital Value would be adjusted. A proportion of the net savings (after an employee bonus allowance) would be available for further investment, a further proportion could be made available to Scottish Water for spend to save purposes and the remainder (after adjusting for operating costs etc.) would be returned to customers.

Implications

It will be important that there is a direct and transparent link (published in advance) between the bonuses available to senior management and the improvement beyond the minimum acceptable level of performance achieved by Scottish Water.

The costs and performance report will become an even more significant document because it may revise price caps downwards during the regulatory control period. We would therefore make the costs and performance report available to Scottish Water significantly in advance of publication.

Annex 2

The Post Office: a case study

The Post Office (including the telephone and mail services) became a public corporation as a result of the 1969 Post Office Act. As a public corporation, it was not allowed to pay dividends to Government. Instead, the Act required a proportion of any retained profit to be used to purchase gilt securities issued by Government. These gilts remained on the balance sheet of the Post Office but, importantly, could only be used under the direction of Ministers. Until relatively recently, the Post Office was highly profitable. The current value of gilts held by the Post Office is well over £1 billion.

The 1999 White Paper on the reform of the Post Office continued this arrangement. A target of 40% of retained earnings should be invested in gilts each year. There is also a minimum target value of gilts to be purchased each year to ensure that public expenditure is not affected by fluctuations in the trading of the Post Office. The White Paper also set out the circumstances where Ministers would use the financial reserve that has been accumulated. Transfers have been made to maintain rural post offices and to finance reform of the Post Office. These costs have, as a consequence, not had to be paid directly by customers.

It is clear that the creation of this financial buffer over a large number of years has assisted the Post Office in the current business climate. It would seem sensible to adopt a similar approach in our funding of the public sector water industry in Scotland.