

Costs and Performance Report 2002-03

Scottish Water

**WATER INDUSTRY
COMMISSIONER
FOR SCOTLAND**

Water Industry Commissioner for Scotland
Ochil House Springkerse Business Park Stirling FK7 7XE
telephone: 01786 430200
facsimile: 01786 462018
email: enquiries@watercommissioner.co.uk
www.watercommissioner.co.uk

November 2003

Foreword

This is my second *Costs and Performance Report* about the operation of the Scottish water industry. It reports on Scottish Water's progress in its first year towards meeting the capital and operating cost efficiency targets that I set at the *Strategic Review of Charges 2002-06*. Efficiency is not simply a cut in costs – it is a reduction in costs whilst the levels of network investment and service to customers are at least maintained.

Efficiency targets are set in order to challenge Scottish Water to improve its performance and offer better value for money to its customers. I can assure customers that my office will continue to monitor progress and to challenge Scottish Water to beat their efficiency targets. However, I do have to warn customers that if these targets are not met, there would have to be significant increases in customers' bills. This is the unfortunate reality.

Of course, it goes without saying that the targets I set should be appropriate and achievable. My office has been rigorous in its approach when examining the scope for efficiency within the Scottish water and sewerage industry. As part of this work, we looked at what had been achieved by the water and sewerage companies in England and Wales. Adjustments were also made to take full account of Scotland's geography, inherited water and sewerage assets and the mix of customers.

The efficiency targets I set at the *Strategic Review of Charges* covered both Scottish Water's capital and its operational costs. During the last year we have modestly revised the operating cost efficiency targets that Scottish Water has to deliver. This takes account of representations made to me by Scottish Water and the rather worse level of operating cost inherited by Scottish Water (and about which I commented in my first *Costs and Performance Report*).

I welcome the progress that has been made by Scottish Water in its first year. The years of worsening efficiency of the water industry in Scotland have, at last, been halted. However, the rate of improvement in efficiency will have to accelerate significantly – or there will have to be substantial increases in customers' bills.

- Scottish Water reduced its operating costs by £37 million in real terms, or nearly 10%, during its first year.

- However, much of this improvement does appear to have resulted from the initial savings that were made from the merger of the three former authorities. Progress since the immediate post-merger period has been much slower than I would have hoped, at an estimated 3.8% per year.
- In order to reach even my revised operating cost target of £265 million, Scottish Water will have to improve at a rate of 11.2% each year for the next three years.
- Improvement in capital investment efficiency has been less encouraging. The companies in England and Wales continue to make progress. It is disappointing to report that there is no convincing evidence that Scottish Water has yet narrowed the capital cost efficiency gap relative to the industry south of the border.
- For the average domestic customer, bills were an estimated £80 higher than they needed to be. In other words, a leading company from south of the border could have reduced the Scottish average domestic bill from £241 to £161.
- This £80 is clearly far too much but it is £6 less than last year and a reduction of nearly 7% in the amount paid because of the industry's inefficiency. This allows more investment in the environment, public health and improving customer service. Regulation has therefore begun to be effective but much more remains to be done.

I have stressed all along that for Scottish Water to be in a position to rise to the challenges it faces will require changes in culture that lie at the heart of the organisation. In this report I once again set out the factors that will need to be addressed by the Board and management of Scottish Water. This includes a single-minded focus on improving value for money for customers of the core business and an understanding of an appropriate response to competition. It is also important that the Scottish Executive continues to recognise its ownership responsibilities to customers and ensures that Scottish Water beats regulatory targets.

To this end, I will continue to monitor, and to report on, Scottish Water's progress in working towards its targets. The industry in England and Wales has proved that it is possible to deliver better service, water quality and environmental compliance for customers, while also making significant improvements in its level of efficiency. There is no reason why Scottish Water should not be able to achieve a similar level of performance for customers here in Scotland and so justify the public sector model for the industry in Scotland.

A handwritten signature in black ink, appearing to read 'Alan D A Sutherland', written in a cursive style.

Alan D A Sutherland

Water Industry Commissioner for Scotland

November 2003

Contents

Foreword		
Executive summary		Page 04
Chapter 1	Introduction	Page 10
Chapter 2	How efficiency targets are set	Page 11
Chapter 3	Targets set at the Strategic Review of Charges 2002-06	Page 16
Chapter 4	Monitoring performance	Page 18
Chapter 5	Alterations to the efficiency targets set at the Strategic Review of Charges	Page 20
Chapter 6	Operating costs performance	Page 22
Chapter 7	Capital costs performance	Page 31
Chapter 8	The impact on customers	Page 33
Chapter 9	Ensuring the success of Scottish Water	Page 34
Chapter 10	Conclusions	Page 38
Appendix 1	Operating expenditure alternative model	Page 39
Appendix 2	Operating expenditure econometric models	Page 40
Appendix 3	Comparison of Scottish Water standard costs and Ofwat benchmarks	Page 42
Appendix 4	Defining operating and capital expenditure	Page 46

Executive summary

Introduction

The *Strategic Review of Charges*, published in November 2001, set challenging but achievable efficiency targets for Scottish Water for the period 2002-06.

This report covers the financial year from April 2002 to March 2003, the first year of operation of Scottish Water. It examines Scottish Water's progress towards those targets. In the report we also compare the value for money provided by the water industry in Scotland with that delivered to customers in England and Wales.

We collect detailed information from Scottish Water on assets, the customer base and other factors that influence cost. This ensures that the comparisons made in this report are objective and accurate.

How we assess efficiency

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

The unit cost comparisons cover operating costs (per head of population, billed property, and connected property); water service operating costs (per kilometre of water main); sewerage service operating costs (per kilometre of sewer); and employment costs (per head of population, billed property, and connected property).

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

The more complex benchmarking techniques we use are¹:

Operating cost	Econometric models developed by Ofwat
	Specially developed Water Industry Commissioner for Scotland (WICS) model
Capital cost	Ofwat's cost base approach

We use two separate methods to determine the relative operating cost efficiency of the industry in Scotland compared to the water and sewerage companies in England and Wales. The first of these methods builds

on economic models developed by the Office of Water Services (Ofwat). The second technique was developed by my office. Both methods give very similar results, and this underpins our judgement that the analysis of relative efficiency is both accurate and robust.

In addition to benchmarking operating expenditure, we also conduct an annual benchmarking exercise on the capital expenditure of Scottish Water.

The efficiency targets we set

At the Strategic Review of Charges, we set three separate efficiency targets:

- a target for improved efficiency in operating costs;
- a target for improved efficiency in the costs of capital projects; and
- a target for improving the operating costs directly associated with the merger of the three authorities to create Scottish Water.

We conducted detailed analysis of the pace of improvement in operating efficiency by the water and sewerage companies in England and Wales. The target we set of 80% for Scotland is less than the average performance actually achieved south of the border.

From our analysis there is no evidence to suggest that Scottish Water, with its relatively large efficiency gap, should not be able to close 80% of its gap by 2005-06.

We identified four areas within capital expenditure that could be targeted for efficiency:

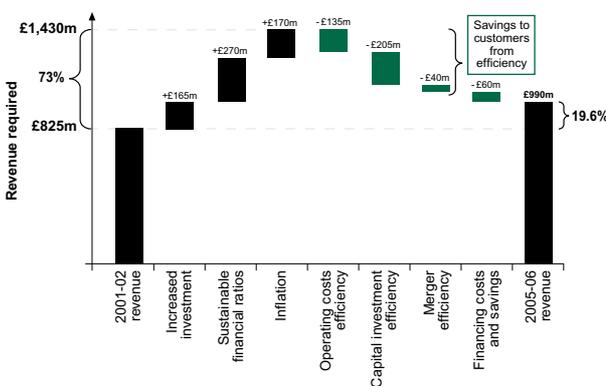
- strategic asset management – 'saving by not doing',
- programme planning or investment appraisal – 'doing it better',
- procurement – 'buying it smarter',
- innovation – 'doing it a new way'.

Only procurement can easily and objectively be measured on an annual basis. As procurement was by some distance the largest single element of the capital efficiency gap, the analysis of procurement efficiency is a useful proxy for overall performance.

¹ See Appendices 1 and 2.

The operating cost and capital expenditure efficiency targets have the effect of reducing the amount of revenue that Scottish Water needs in order to carry out its functions. As such, they are critical to the long-term success of the public sector model. Figure 1 demonstrates the importance of the efficiency targets.

Figure 1: The composition of the Scottish Water revenue cap



The annual targets for Scottish Water are summarised in Table 1. The savings are relative to 2000-01.

Table 1: Annual efficiency targets set in the Strategic Review of Charges

	2001-02	2002-03	2003-04	2004-05	2005-06
Operating expenditure savings	£15m/yr	£63m/yr	£97m/yr	£116m/yr	£136m/yr
Additional merger savings ²	£0m/yr	£28m/yr	£34m/yr	£38m/yr	£39m/yr
Capital expenditure savings	£0m/yr	£71m/yr	£102m/yr	£169m/yr	£207m/yr
Total savings	£15m/yr	£162m/yr	£233m/yr	£323m/yr	£382m/yr

Even if Scottish Water achieves its targets, in 2005-06 its operating efficiency would be similar to that of the leading water and sewerage company in the early 1990s (North West Water) and to that of the lowest ranked company (Welsh Water) in 2000-01. It is likely that further significant efficiency targets will need to be in place beyond 2005-06.

Alterations to the efficiency targets

The targets need to reflect any material changes in circumstance that arise after they have been set. Last year we reported that the three former authorities performed more poorly in their final year than had been expected when the Strategic Review of Charges was completed. As a result, and in light of other representations to us from Scottish Water during 2002-03, we have increased the base operating costs allowed to Scottish Water by £6.6 million to £265 million.

The capital efficiency targets we had set at the Strategic Review were the same for the three authorities. However, 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 in 2001.

During this year, we have attempted without success to confirm these claims. We can only assume that these efficiencies were not made. In order to protect customers' interests, therefore, we are requiring Scottish Water to improve its efficiency by a higher percentage than the average percentage improvement applied at the Strategic Review. This will lead to additional savings of £74 million.

However, we have agreed that we will not reduce the funds available for investment in this regulatory period so that Scottish Water can plan and deliver the current capital programme more effectively. 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).

Impact of these adjustments on customers

The adjustments described above should have only a very limited impact on bills for customers. At the end of the current regulatory period overall debt will be higher than was expected when we completed the Strategic Review of Charges 2002-06.

² Merger savings include proceeds from disposal of assets.

This will result in the starting point for the next Strategic Review being slightly worse than we anticipated. However, this will be offset by the rescheduling of the £74 million of capital efficiency. Average bills are therefore likely to increase by less than 1% as a result.

Operating expenditure efficiency

Straightforward comparisons – operating costs

We believe that it is useful to compare the costs of Scottish Water with those of the companies in England and Wales relative to factors that are likely to impact on costs. We compare the costs incurred north and south of the border relative to population served, properties connected and mains and sewer length. These comparisons help to illustrate the gap in efficiency.

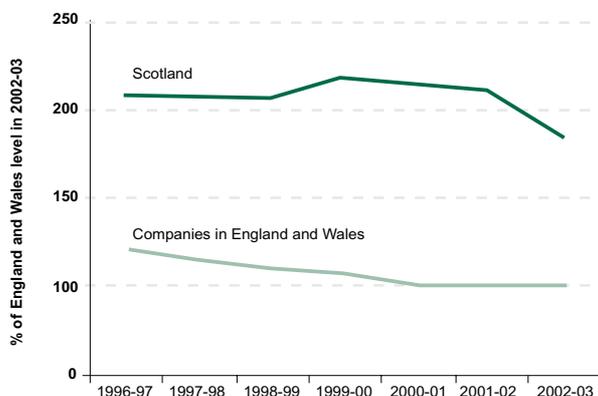
All of these comparisons show that there appears to be considerable scope for improvements in operating cost efficiency.

2002-03 performance

Scottish Water reduced its base operating costs by £29.3 million to £351.2 million during 2002-03. Once inflation is taken into account, operating expenditure is some £37 million lower than in 2001-02. This is a reduction of almost 10% in real terms.

Figure 2 shows the trends in base operating costs. These have been derived from our benchmarking.

Figure 2: Trends in base operating costs



³ Both the econometric and alternative models use 2002-03 information for Scottish Water as submitted in the June Return 2003. However, the information for the companies in England and Wales is taken from the June Return 2002 CD published by Ofwat in October 2002 and unpublished detailed 2001-02 costs for the sewerage service, which were not available when we compiled the *Costs and Performance Report 2001-02*. This additional information results in a slight adjustment to the score for the leading company in the econometric models. We consider that it is unlikely that there will have been significant changes in information in England and Wales in the year 2002-03.

Scottish Water's performance represents a welcome improvement in operating cost efficiency after the years of worsening performance that characterised the former three authorities.

This performance does, however, fall some way short of the original Strategic Review target of £304.3 million. The gap between current performance and the annual target has therefore increased to £46.9 million in 2002-03 (compared with a gap of £20 million in 2001-02).

We are moreover concerned that the savings observed in 2002-03 appear to result primarily from the initial benefits realised from the merger of the three authorities. This seems to have given initial impetus to Scottish Water's efforts to improve its efficiency. More recently, however, progress appears to have slowed considerably.

We use Scottish Water's regulatory returns to assess, on a monthly basis, whether the industry is on track to meet its 2005-06 operating cost targets. Since the formation of Scottish Water in April 2002, operating costs, after correcting for changes in accounting policy, are declining at a rate of 0.32% per month. This is equivalent to 3.8% or £13.2 million per year, in nominal terms (i.e. with no adjustment for inflation). This rate of progress, if sustained, will not be sufficient to meet the revised regulatory target of £265 million for 2005-06. It would leave a shortfall in performance of around £47 million in that year.

If an unnecessary increase in customer bills is to be avoided, therefore, it is critical that Scottish Water builds upon the 2002-03 performance and accelerates its rate of performance.

Performance compared with companies south of the border

It is disappointing to report that there is still a very considerable efficiency gap with the companies in England and Wales. The benchmarking results are calibrated such that average performance is 100. The leading company has a score of 87. This is illustrated in Table 2³.

Table 2: 2002-03 efficiency scores

	Econometric models	Alternative model
Scottish Water	159	156
England & Wales average	100	100
England & Wales leading company	87	76

The impact of this gap is made clear by converting the scores to monetary equivalents. If we take the scores from the econometric models as an example, for every £1 of operating expenditure in England and Wales, Scottish Water had to spend £1.59 to deliver service to customers. The leading company south of the border would have spent only 87 pence.

Comparative scores such as this will only have real meaning if they compare costs for delivering an exactly equivalent service. As this is demonstrably not the case in Scotland, a true picture of relative efficiency requires the cost to an efficient company of the different scope and level of service to be considered. These differences include the costs of a better level of services to customers, better compliance with water quality targets, addressing leakage, and more widespread metering of domestic customers.

Table 3 shows the revised scores after taking these differences into account.

Table 3: Efficiency scores taking account of differences in scope and customer service

	Econometric models	Alternative model
Scottish Water	186	183
England & Wales average	100	100
England & Wales leading company	87	76

In monetary terms the average English and Welsh company would incur £1 of operating expenditure to deliver a level of service and scope of activity that would cost Scottish Water over £1.80.

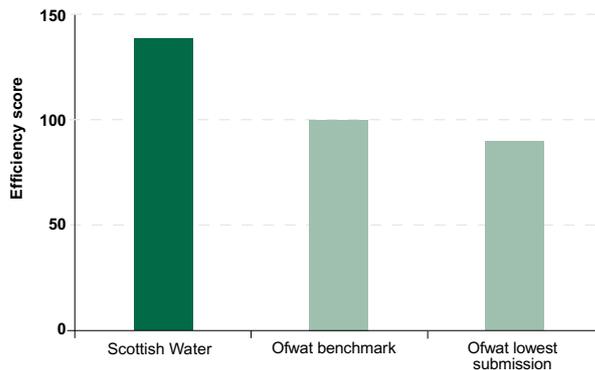
Capital expenditure efficiency

We examine procurement efficiency, as this can easily and objectively be measured on an annual basis.

In 2002-03 Scottish Water improved its procurement efficiency by 5% in real terms. This builds on the 6% improvement that was achieved in 2001-02. Such improvement is welcome. However, to put this progress in perspective, it is instructive to note that the companies in England and Wales made a 9% real improvement in the period 2000-03⁴.

Figure 3 shows the capital expenditure efficiency of Scottish Water relative to benchmark⁵ and best practice in England and Wales in 2002-03.

Figure 3: Relative capital expenditure efficiency scores 2002-03



The impact on customers

The future outlook for prices, and the value for money customers receive, is directly dependent on the pace and scale of efficiencies delivered by Scottish Water.

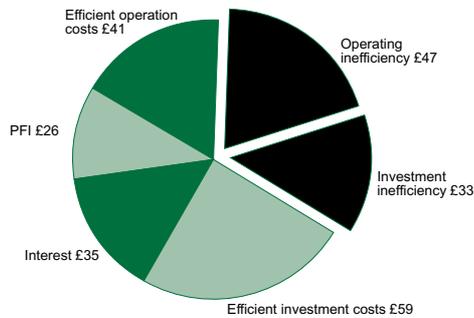
In 2002-03, customers' bills included significant costs that would not have been incurred if Scottish Water were as efficient as the leading companies in England and Wales. For the average domestic customer, bills were an estimated £80 higher than they needed to be. This is illustrated in Figure 4. This estimate assumes that domestic and non-domestic customers share the burden of inefficiency evenly.

⁴ Ofwat, *Financial performance and expenditure of the water companies in England and Wales*, August 2003 quotes a 9% improvement in overall capital efficiency during 2000-01 to 2002-03 in real terms. This is over and above the efficiencies assumed by Ofwat at the 1999 Periodic Review.

⁵ The benchmark chosen by Ofwat does not necessarily equal the lowest cost submission. For a cost to be chosen as the benchmark it must be judged to be reliable and accurate; the company must have closely followed Ofwat's reporting requirements; and the company that has submitted the cost must be sufficiently large, usually greater than 3% of the industry (measured by turnover).

Figure 4: Impact of inefficiency on domestic customers' average bills in 2002-03

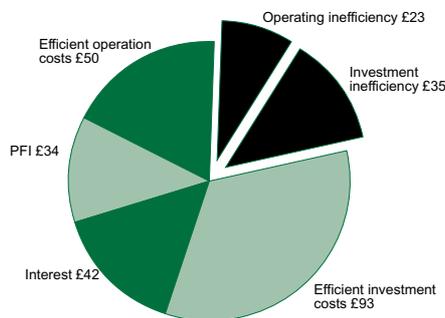
Average domestic bill = £241⁶



Even if Scottish Water achieves its capital cost efficiency and revised operating cost targets in full, there will remain a significant cost element of bills in 2005-06 caused directly by inefficiency. Figure 5 shows that the annual cost to the average domestic customer of inefficiency is still likely to be £58 even in 2005-06. This assumes that Scottish Water meets its adjusted targets and that the companies south of the border improve no faster than was assumed at Ofwat's 1999 Periodic Review.

Figure 5: Impact of inefficiency on domestic customers' average bills in 2005-06, assuming Scottish Water achieves adjusted efficiency targets

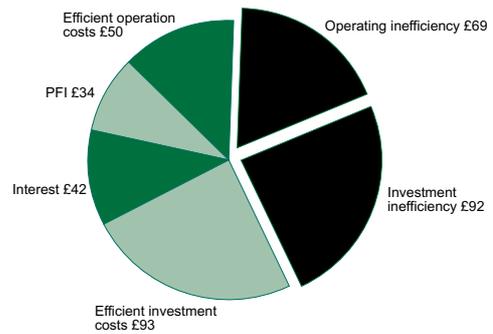
Projected average domestic bill = £278⁶



If the revenue caps in the *Strategic Review of Charges* had not taken account of the scope for efficiency, customers' bills would have been significantly higher. This is illustrated in Figure 6.

Figure 6: Impact of inefficiency on domestic customers' average bills in 2005-06, without progress on efficiency beyond 2000-01

Illustrative average domestic bill = £382⁶



In this case the average domestic customer would have had to pay £161 per year because of the inefficiency of the service provider.

Key success factors for Scottish Water

The future success of Scottish Water will depend on a significant change in the culture within the organisation. Several factors will be important in bringing about the changes required. These are:

- improved corporate governance;
- clearer and more public criteria for incentives paid to management;
- improved understanding of the competitive threats facing Scottish Water;
- improved understanding and clarity in the management and reporting of costs;
- a clear and maintained focus on providing the statutory water and sewerage service to customers; and
- a commitment to implementing best practice.

⁶ Totals may not add exactly, due to rounding. The £382 bill is consistent with the overall increase in revenue of 73% that would have been required if there had not been such scope for efficiency. The slightly different percentage increase reflects assumptions about water volumes and property growth.

Each of these factors will need to be addressed if customers in Scotland are to benefit from the very significant potential for efficiency improvements. It is also important that the Scottish Executive continues to recognise its ownership responsibilities to customers and ensures that Scottish Water plans to achieve, then beat, regulatory targets.

Chapter 1

Introduction

Each year we report on progress in the Scottish water industry in three reports. These are:

- 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* compares the value for money provided by the water industry in Scotland with that delivered to customers in England and Wales. It also considers whether the industry in Scotland has improved in offering customers better value for money.

This is the second annual *Costs and Performance Report*. It covers the financial year from April 2002 to March 2003, providing an objective assessment of Scottish Water's performance during its first year of operation. The report assesses Scottish Water's performance in improving its efficiency in both capital and operating expenditure. The results are important for customers as the outlook for future water and sewerage prices will depend on Scottish Water's success in becoming more efficient.

The report contains ten chapters. Chapter 2 describes how we set the operating and capital efficiency targets at the Strategic Review of Charges. Chapter 3 outlines the importance of the efficiency targets that were set in the Strategic Review of Charges. Chapter 4 describes the on-going monitoring of performance that we undertake. Chapter 5 outlines modifications to the operating and capital cost targets set for Scottish Water in light of information that was not available at the time of the Strategic Review of Charges. Chapter 6 describes the performance of Scottish Water in improving its operating expenditure efficiency. Chapter 7 describes Scottish Water's performance in improving its efficiency in capital expenditure. Chapter 8 illustrates the impact of Scottish Water's current and likely future

performance on the prices paid by customers. Chapter 9 revisits some of the key success factors for a sustainable public sector model, as identified in the *Strategic Review of Charges*. This is followed by a short concluding chapter.

Chapter 2

How efficiency targets are set

2.1 Background

As Water Industry Commissioner for Scotland (WICS), we have a duty to promote the interests of customers. Economic and customer service regulation is designed to ensure that customers receive value for money.

It is imperative that we understand the scope for efficiency within the water and sewerage industry, and that we set appropriate targets for improvement. These targets have a direct impact on the bills that customers pay.

In the *Strategic Review of Charges*, we set three separate efficiency targets. These were:

- a target for improved efficiency in operating costs;
- a target for improved efficiency in the costs of capital projects; and
- a target for improving the operating costs directly associated with the merger of the three authorities to create Scottish Water.

In order to set targets, we draw upon extensive information from the water industry both in Scotland and in England and Wales. We also use information from other utilities and their regulators, and from financial analysts and commentators.

This information includes:

- annual reports and accounts;
- annual June Return submissions;
- responses to regulatory letters by Scottish Water; and
- analysts' reports.

2.2 Benchmarking

The principal method we use to establish the scope for efficiency is to compare the level of service delivered and the costs incurred by the water industry in Scotland and by the industry south of the border⁷.

It is important to define clearly what we mean by efficiency in this report. 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 other words, simply cutting costs is not an efficiency, nor is a change in an accounting policy that results in lower declared expenditure. Similarly, the delay of a necessary capital project from the current to a future regulatory period is not an efficiency.

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 therefore to be hoped that clear, objective and public annual comparison of performance in Scotland with that in England and Wales should introduce a significant incentive for Scottish Water to improve. Customers would benefit considerably from such an improvement.

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,

⁷ There is unfortunately insufficient information on costs and levels of service provided by the water industry in other countries to provide reliable international comparisons.

- water service operating costs per kilometre of water main,
- sewerage service operating 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 any two water and sewerage undertakers in Great Britain.

The benchmarking techniques are⁸:

Operating cost	Econometric models developed by Ofwat
	Specially developed Water Industry Commissioner for Scotland (WICS) model
Capital cost	Ofwat's cost base approach

We have adopted 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. This model is described in Appendix 1. All of these methods give very similar results, and this underpins our judgement that the analysis of relative efficiency is both accurate and robust.

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

Ofwat's approach to assessing relative operating efficiency, and the econometric models themselves, were endorsed in 2000 by the Competition Commission, following a detailed review. This followed an appeal by two small water only companies, Mid Kent Water and Sutton & East Surrey Water, to Ofwat's 1999 price determination.

In January 2000, Ofwat's approach earned wide endorsement as an example of best practice from the Performance and Innovation Unit of the UK Government Cabinet Office. This was in the context of promoting policy decision making on the basis of sound information analysis.

2.2.1 Gap in operating efficiency

The primary tool used to benchmark Scottish Water's operating costs is the suite of econometric models that was originally developed by Ofwat to benchmark the companies in England and Wales. Details of the models are set out in Appendix 2 of this report.

The information that is put into the models is taken from the Annual Return submitted by Scottish Water in June each year. In addition, the models are updated each year with the latest information for the companies in England and Wales. This information is obtained from the companies' June Returns published by Ofwat.

As noted above, we also developed an alternative model to assess the relative operating efficiency of Scottish Water. This model is used to validate results obtained from the Ofwat econometric models. As with the Ofwat econometric models, the information used for this alternative model is taken from Scottish Water's Annual Return.

Both modelling approaches generate an operating expenditure efficiency score for Scottish Water. The scores are discussed in Chapter 6.

⁸ See Appendices 1 and 2.

2.2.2 Gap in capital efficiency

In addition to benchmarking operating expenditure, we also conduct an annual benchmarking exercise on the capital expenditure of Scottish Water.

The *Strategic Review of Charges* identified four areas within capital expenditure that could be targeted for efficiency:

- **Strategic asset management** – ‘saving by not doing’. This is where savings are achieved by not spending money that was allocated for a particular project or item. It is essential to bear in mind that not spending would only be considered an efficiency if this were done without compromising output and performance measures. An example would be replacing pumps every five years rather than every three, without compromising either service to customers or operating cost performance.
- **Programme planning or investment appraisal** – ‘doing it better’. This area of analysis considers whether the projects deliver their objectives in the most cost-effective way.
- **Procurement** – ‘buying it smarter’. This is the application of the cost base analysis described below. The aim is to assess the opportunity for procurement savings by comparing the prices paid by the companies south of the border and by Scottish Water for standardised capital projects.
- **Innovation** – ‘doing it a new way’. This analysis assesses the scope for innovation efficiency by comparing the impact of low cost technologies with current practice. It may also suggest slightly different operating practices which could remove or limit the need for capital investment.

It is not possible to assess performance in non-procurement areas of capital efficiency on a reliable basis each year. We have therefore focussed on procurement.

At the time of the *Strategic Review*, the greatest gap between the three authorities in Scotland and the companies in England and Wales was determined to be in the area of procurement. The analysis of procurement efficiency is therefore a useful proxy for overall performance.

Procurement efficiency is measured using the cost base, which contains standard costs that are relevant to both capital maintenance and capital enhancement expenditure. We ask for the cost base information as part of Scottish Water's Annual Return. The information consists of a set of capital unit cost estimates for standardised projects (standard costs). These standard costs relate to work that has been or is likely to be undertaken by Scottish Water as part of its future investment programme.

Scottish Water is required to submit as many relevant standard cost estimates as possible. However, where the project type or size is unrelated to the asset base and/or the current/future capital programme, Scottish Water need not submit standard costs.

The standard costs submitted by Scottish Water are compared against the Ofwat benchmarks. The benchmarking scores for 2002-03 are set out in Chapter 7.

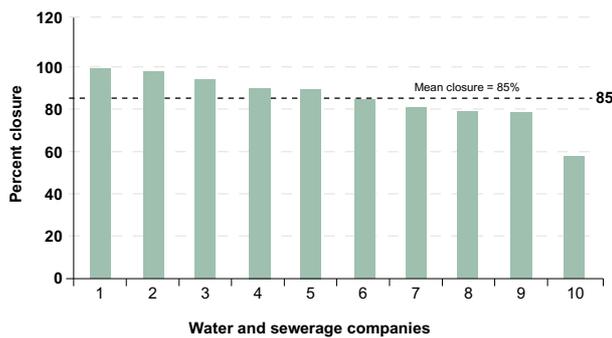
2.2.3 Setting the targets

In England and Wales, Ofwat has determined the scope for efficiency for the best performing company. Since there is a considerable gap between the efficiency of the best performing companies south of the border and that of the industry in Scotland, we did not need to repeat this analysis. Instead we assessed the appropriate rate at which the gap between the Scottish industry and that south of the border could be closed.

We conducted detailed analysis of the pace of improvement in operating efficiency by the water and sewerage companies south of the border. This suggested that it was reasonable to require the Scottish industry to narrow 80% of the efficiency gap during a five-year period.

Figure 2.1 shows the performance of companies south of the border. This demonstrates that during their best five-year period, the companies achieved an average closure of 85% of the gap to the leading company.

Figure 2.1: Closure of efficiency gap by water and sewerage companies over five years



The target we set of 80% for the industry in Scotland is therefore less than the average performance actually achieved south of the border. The target also took no account of the outperformance of their regulatory settlement that the companies south of the border were likely to achieve. As such requiring Scottish Water to close 80% of the observed efficiency gap posed less of a challenge than could have been justified.

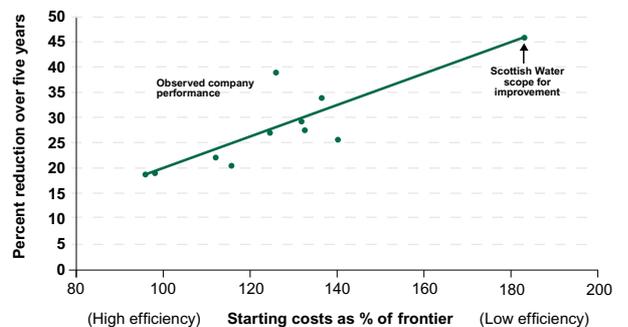
At the *Strategic Review* we provided advice to Scottish Ministers about the revenue caps for Scottish Water for the period April 2002 to March 2006. These revenue caps determine the revenue that can be raised through charges to customers. At that time we took into account the up-front rationalisation costs that would be incurred by the merger of the three former authorities into Scottish Water. We allowed £200 million within the revenue caps to finance these 'spend-to-save' initiatives⁹. This allowance is in marked contrast to the regulatory settlements that are made available to the companies south of the border, which contain no such provision. The companies' spend-to-save costs have to be met from outperformance of their regulatory settlements. As such, including spend-to-save in the revenue cap further reduced the challenge faced by the Scottish industry.

We wanted to be sure that the proposed cost reductions to achieve an 80% closure of the gap were realistic, given the large gap faced by Scottish Water. We therefore looked at the extent of operating cost reductions achieved by water and sewerage companies, relative to their efficiency at the start of their best five-year period.

Our analysis showed that companies facing larger initial efficiency gaps made greater absolute cost reductions than companies that were relatively more efficient.

Figure 2.2 illustrates this relationship. The plotted 'best fit' line suggests that Scottish Water, whose operating costs are 180% those of the leading company, even before differences in scope and levels of service are taken into account, should be able to achieve cost reductions of at least 45% in real terms over five years. This compares with our target cost reduction of 33% for operating costs.

Figure 2.2: Reduction in operating expenditure for a given initial efficiency



We can therefore see no reason why Scottish Water, despite its relatively large efficiency gap, should not be able to close 80% of its gap by 2005-06.

Our final consideration related to establishing an appropriate phasing of the targets. We opted to set phased targets for both capital and operating cost efficiency improvements. The phasing for operating cost targets took account of the performance record of the

⁹ Spend-to-save expenditure is spending now to save money later. For example, redundancy payments now should reduce wage bills in the future. In the *Strategic Review of Charges*, an allowance of £200 million, over four years, was provided to Scottish Water to help meet the upfront costs of addressing the efficiency gap. We are not aware of any precedent for such an allowance to be included upfront in a regulatory revenue cap. It is therefore of the utmost importance that we are able to monitor this allowance in detail to ensure that customers' interests are protected.

regulated companies in England and Wales. Ofwat's practice was not to phase the capital cost efficiency target. Our decision to phase the capital efficiency target further reduced the challenge posed for Scottish Water.

Chapter 3

Targets set at the Strategic Review of Charges 2002-06

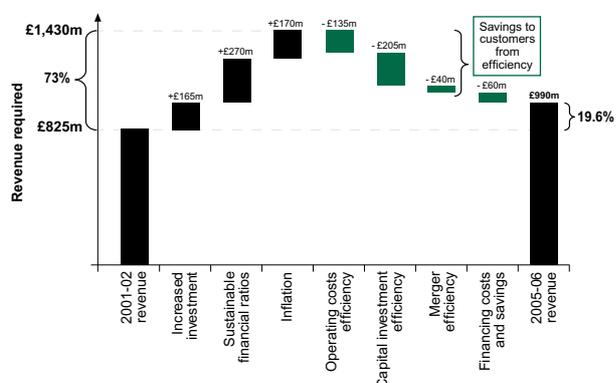
3.1 Importance of efficiency targets to revenue cap levels

At the *Strategic Review of Charges* we provided advice to Scottish Ministers on appropriate revenue caps for Scottish Water for the period April 2002 to March 2006. These revenue caps, which Scottish Ministers accepted, determined the revenue that could be raised through charges to customers. This advice took account of all relevant factors, including:

- the capital investment required to ensure that all public health and environmental improvement targets were met and to ensure that there was no further deterioration in the overall quality of the asset base;
- the level of service to be provided to customers;
- the prudent long-term financing of the water industry in Scotland;
- the operating expenditure efficiencies that could be achieved;
- the capital expenditure efficiencies that could be achieved; and
- the rate of change that should be expected and the costs of achieving that change.

The operating cost and capital expenditure efficiency targets have the effect of reducing the amount of revenue that Scottish Water needs in order to carry out its functions. As such, they are critical to the long-term success of the public sector model. Figure 3.1 demonstrates the importance of the efficiency targets.

Figure 3.1: The composition of the Scottish Water revenue cap



In summary, bills would have had to increase to even higher levels had this scope for efficiency not existed.

The annual targets for Scottish Water set in the *Strategic Review of Charges* are summarised in Table 3.1. The savings are relative to 2000-01.

Table 3.1: Annual efficiency targets set in the Strategic Review of Charges

	2001-02	2002-03	2003-04	2004-05	2005-06
Operating expenditure savings	£15m/yr	£63m/yr	£97m/yr	£116m/yr	£136m/yr
Additional merger savings ¹⁰	£0m/yr	£28m/yr	£34m/yr	£38m/yr	£39m/yr
Capital expenditure savings	£0m/yr	£71m/yr	£102m/yr	£169m/yr	£207m/yr
Total savings	£15m/yr	£162m/yr	£233m/yr	£323m/yr	£382m/yr

Table 3.2 sets out operating and capital expenditure savings as a percentage of the base year figure.

Table 3.2: Annual percentage efficiency targets set in the Strategic Review of Charges

	2001-02	2002-03	2003-04	2004-05	2005-06
Operating expenditure savings	4%	16%	25%	29%	33%
Capital expenditure savings	0%	14%	20%	25%	31%

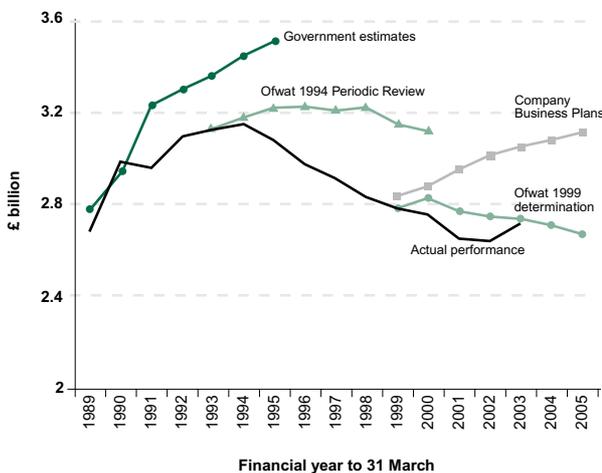
¹⁰ Merger savings include proceeds from disposal of assets.

3.2 Efficiency targets in context

The calculation of the likely efficiency gap with the comparator companies assumed that these companies would perform in line with the efficiency targets set by Ofwat in the course of the 1999 Periodic Review. This will almost certainly underestimate the efficiency gap that will exist in 2005-06 for two reasons:

- Ofwat establishes targets that it believes a well managed company can better. This creates an incentive for management to outperform.
- History demonstrates that, although the companies' estimates of the resources they require are significantly higher than those allowed by Ofwat, the companies have, on average, always managed to outperform the targets set by the regulator. This is illustrated in Figure 3.2.

Figure 3.2: Comparison of operating costs with targets in England and Wales¹¹



It is important to understand how Scottish Water would compare with the industry in England and Wales if it achieves the targets agreed at the Strategic Review. We therefore reviewed the likely position of Scottish Water in 2005-06 relative to England and Wales. If it achieves the targets set out in the *Strategic Review of Charges*, in 2005-06 Scottish Water's operating efficiency would

be similar to that of the leading water and sewerage company in the early 1990s (North West Water) and to that of the lowest ranked company (Welsh Water) in 2000-01.

This level of operating efficiency is likely to place Scottish Water around 25% behind the leading companies in 2005-06. It is therefore likely that further significant efficiency targets will need to be in place beyond 2005-06.

It is not in customers' interests to set targets that are unachievable. Such targets are likely to have a de-motivating effect and could result in higher costs or lower levels of service. In the Strategic Review, we wanted to ensure that the targets we recommended to Ministers were such that a well managed company should be able to outperform them. To this end, we made a number of assumptions that favoured Scottish Water. These included the following.

- We did not adjust the expenditure of the English and Welsh companies to take account of their spending to provide higher levels of customer service.
- We did not adjust the expenditure of the English and Welsh companies to take account of their spending to provide higher levels of compliance with environmental and public health standards.
- We did not adjust the expenditure of the English and Welsh companies to take account of their spending to meet mandatory leakage targets.
- We did not adjust the expenditure of the English and Welsh companies to take account of their spending associated with domestic metering.
- We assumed that there would be no outperformance by the companies south of the border.
- We decided to calculate targets relative to a comparator company rather than to the best performing company.

¹¹ The figure is in 2002-03 prices.

Chapter 4

Monitoring performance

The aim of economic regulation is to promote customers' interests. This is achieved principally by setting revenue caps and by establishing customer service standards and monitoring performance against them.

It is a matter for the management of Scottish Water to determine how best to run its business within the revenue caps set. However, continuous monitoring of Scottish Water's progress towards its efficiency targets allows us to identify any potential areas of concern. Customers' bills will be higher than would otherwise have been necessary if Scottish Water does not achieve its efficiency targets in full.

Regular scrutiny of operating and capital expenditure also helps ensure that Scottish Water continues to report figures on a like-for-like basis. This facilitates objective and fair year-on-year comparisons with the companies in England and Wales.

We also actively monitor the progress of the companies in England and Wales towards the efficiency targets that Ofwat set at the 1999 Periodic Review. This analysis allows us to assess relative performance in Scotland.

4.1 Operating expenditure

The key operating costs that are being monitored are as follows:

- **Base operating expenditure**¹²: to assess underlying progress in reducing costs for a given level of service (i.e. the rate of improvement in operating efficiency).
- **Spend-to-save**: to ensure that this exceptional expenditure represents a good investment for customers.

It is important that the reconciliation of base to total operating expenditure is soundly based. In this regard, we check the reported information in detail. Our tests include the following:

- 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 expenditure¹³ 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 base operating cost?
- Do any other relevant changes in accounting policy affect the interpretation of trends in base operating cost?

In the event that a reported cost component appears to be inconsistent or anomalous according to these tests, it may be necessary to adjust the calculation of base operating expenditure, unless the item can be justified.

4.2 Capital expenditure

Capital investment is closely monitored and will be discussed in our annual report on asset management and investment. Since investment needs vary year on year, it is not possible to monitor performance trends

¹² Base operating expenditure is defined in Appendix 4.

¹³ New operating expenditure is the net additional expenditure associated with improvements.

using levels of expenditure. Instead, we use the cost base analysis to compare procurement efficiency from one year to another. We are able to relate this performance to England and Wales using information published by Ofwat. Unfortunately detailed comparison of relative annual performance is not possible because Ofwat only carries out a full review of cost base information every five years.

To complement our analysis of procurement efficiency, each year we will continue to carry out a series of audits of capital investment appraisals in Scotland and compare them with best practice.

4.3 Overall performance assessment

It is vital that our conclusions on the pace and scale of efficiency improvements by Scottish Water take overall performance into account. We use five key questions to evaluate the value for money received by customers. These are shown in Table 4.1.

Table 4.1: Factors impacting on value for money to customers

Key question	Impact on customers
Are levels of service improving in line with expectations?	Efficiency improvements require levels of service to remain stable or improve, while reducing costs.
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.
Is depreciation being charged at a sustainable level, taking prudent account of asset lives?	Underprovision for depreciation could jeopardise the sustainability of Scottish Water.
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.
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.

We will continue to challenge Scottish Water's management to improve its performance in all areas. However, in commenting on overall performance we recognise that underperformance in one area may be offset by outperformance in another.

Chapter 5

Alterations to the efficiency targets set at the Strategic Review of Charges

Targets set by a regulator should reflect the best information available at the time, and should take account of material changes in circumstance that arise subsequently.

During Scottish Water's first year of operation, we sought confirmation of the capital cost efficiencies claimed by the former East of Scotland Water Authority. Scottish Water has also made representations to us that its operating cost efficiency targets should be reduced. In this chapter we explain the limited changes to the current regulatory settlement that have been agreed.

5.1 Operating cost targets

In last year's *Costs and Performance Report 2001-02*, we noted that the performance of the three authorities was worse than had been expected in the *Strategic Review of Charges*. In the Review, we accepted the forecasts of the three authorities and consequently expected a level of base operating expenditure of £360.5 million for the industry in Scotland. The actual outturn was £380.5 million – £20 million worse than had been expected. This increased the monetary value of the operating cost efficiency target significantly.

5.1.1 Representations from Scottish Water

Scottish Water has made a number of representations to us about operating costs during its first year. Many of these were of a procedural nature and on investigation were not found to be valid. However, Scottish Water did highlight one new factor that justified an increase in its allowed operating costs. This related to a difference in the definition of a public sewer between the law in Scotland and that in England and Wales. This increased the operating costs allowed to Scottish Water by £2 million per year.

Four additional factors put forward in the representations are discussed below. These are:

- the impact of inflation on the capital programme;
- the high level of domestic bad debt relative to England and Wales;

- the pace of change required and associated risk; and
- the large number of small assets.

Impact of inflation

Estimates of inflation are important both for capital and operating costs. In its representations, Scottish Water asserted that it needed more money to meet increased capital costs because of inflation. In the Strategic Review of Charges, we projected both capital expenditure inflation (COPI) and the Retail Price Index (RPI). To date, the projection of COPI made at that time has proved to be too low and our projection for RPI too high.

If our projections were to be correct for the remainder of the regulatory period, Scottish Water would benefit by a net £70 million. If COPI continues at the same high rate as observed recently and RPI reverts back up to 2.5%, then Scottish Water may suffer to the tune of up to £24 million. We consider that delivery of outputs to customers should not be materially affected by these potential variances. In addition, such variances will be corrected in the next *Strategic Review of Charges*.

Domestic bad debt

Scottish Water claimed to be put at a disadvantage by its relatively high level of domestic customer bad debt compared with the position in England and Wales. Clearly the level of bad debt can be influenced by the policies or investments of a water company. For example spending more on pursuing non-paying customers is likely to reduce the level of bad debt. Consequently our analysis looked at all the costs associated with the billing and collection of revenue from domestic customers. This analysis demonstrated that Scottish Water was not disadvantaged by the agreement with local authorities to collect domestic charges. Further, the analysis clearly demonstrated that it is not likely that Scottish Water could improve its relative efficiency by billing domestic customers directly.

Pace of change required and associated risk

In the *Strategic Review of Charges*, we examined closely the track record of the companies south of the border. It was clear that the significant reductions in base operating costs that were achieved by these companies were accompanied by a significant improvement in the level of service to customers. We are not aware of any new evidence that was not considered at the time of the *Strategic Review* as to why Scottish Water should not be

able to achieve the targets set. Moreover, we believe that the unique spend-to-save allowance included in the revenue caps for Scottish Water should significantly reduce any risks inherent in the pace of change required.

The large number of small assets

Scottish Water has estimated that the additional annual costs of running its large number of small assets may be from £10 million to £40 million. Our econometric models used at the Strategic Review estimate that the extra efficient cost incurred by Scottish Water, because of its relatively large number of small assets, is approximately £18 million. This is equivalent to around £30 million at Scottish Water's level of efficiency today. We are confident that the efficiency targets set in the Strategic Review of Charges took full account of this factor.

5.1.2 Alterations to operating cost efficiency targets

We have concluded that the targeted level of base operating costs for 2005-06 should be increased from £258.4 million to £265 million. Base operating costs for an average company operating in Scotland would be £205 million. The frontier company would incur only £181 million in providing the current level of service to customers in Scotland.

The alterations that we have made are as follows:

Table 5.1: Alterations to operating cost efficiency targets

Description of factor	£ million
Definition of sewer in Scottish law	2.0
Worse starting point for Scottish Water than expected at the time of the Strategic Review of Charges ¹⁴	4.0
Inflation on the above costs to 2005-06	0.6
Total adjustment	6.6

5.2 Capital cost targets

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.

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).

5.3 Impact of efficiency adjustments on customers

The adjustments to the efficiency targets described above should have only a very limited impact on bills for Scottish customers. The starting point for operating and capital cost efficiency for the next Strategic Review of Charges will be slightly worse and overall debt at the end of the current regulatory period will be higher but these two variances will be offset by the agreed reduction in funds available for capital investment. Assuming that interest rates on new loans to Scottish Water remain below 5%, then the likely impact of the adjustments to efficiency targets will be to increase average bills by less than 1%.

Although the rate of progress towards the 2005-06 target will have a marginal impact on customers' bills, we have not set new operating cost targets for 2003-04 or 2004-05. It is a matter for the management of Scottish Water to decide their optimum profile of achieving the efficiency target. Based on our review of the performance of the companies south of the border, we would expect that a shortfall of up to £5-10 million from the original targets would still mean that Scottish Water was well on course to reduce operating costs to £265 million by 2005-06. For ease of reference and for consistency we have shown progress relative to the original target that was set at the time of the *Strategic Review of Charges*.

¹⁴ Analysis has shown that Scottish Water should be capable of closing 80% of its efficiency gap – irrespective of the size of that gap. 80% of the £20 million is £16 million. This implies that an upward adjustment of £4 million is appropriate.

Chapter 6

Operating costs performance

This chapter reports progress in operating expenditure efficiency, and assesses the overall efficiency gap between Scottish Water and England and Wales in 2002-03.

The econometric models that we use for our benchmarking take account of differences in geography, asset base and the type and number of customers. This allows us to compare companies serving large urban areas with companies that serve smaller and more rural areas.

The econometric benchmarking methods we use are highly complex. In addition to these methods, we also carry out more straightforward comparisons.

6.1 Straightforward comparisons

We believe that it is useful to compare the cost performance of Scottish Water with the companies in England and Wales relative to factors that are likely to impact on costs. These would include numbers of customers served, length of water mains and sewers operated and numbers of employees.

All of these comparisons show that there appears to be considerable scope for improvement in operating cost efficiency.

Figure 6.1 was first published in the *Strategic Review of Charges 2002-06*. It shows that the industry in Scotland incurs greater levels of cost in providing a service to a smaller population. It is useful to note that the combination of South West Water and Anglian Water would present many of the same geographical challenges that are faced by Scottish Water.

Figure 6.1: Comparison of operating expenditure and population served 1999-2000

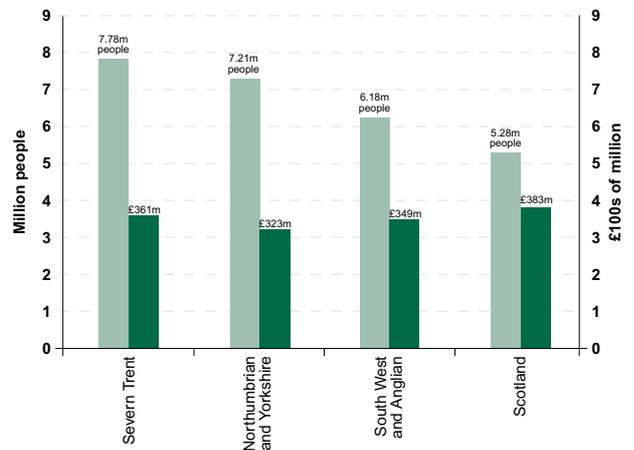
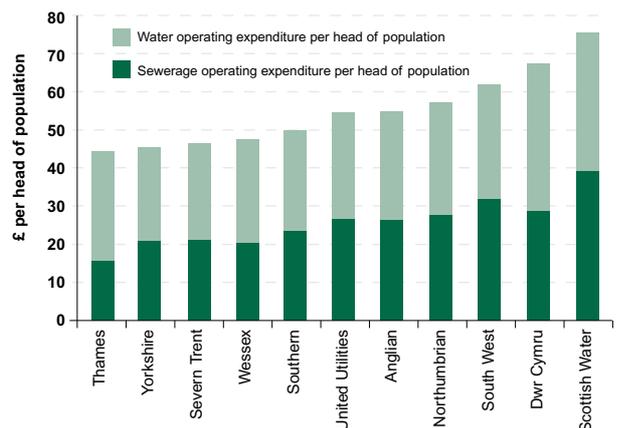


Figure 6.2 compares unit costs per head of population for the water and sewerage companies in England and Wales and for Scottish Water. It shows that companies that supply more urban areas tend to incur relatively lower costs than those that supply the most rural parts of England and Wales.

Figure 6.2: Unit operating costs per head of population¹⁵



¹⁵ In this and later comparisons, the operating costs of Scottish Water include their estimate of the costs of running sewage treatment works built under the Private Finance Initiative. These works provide sewage treatment for a substantial proportion of the population of Scotland.

Figures 6.3 and 6.4 show a similar position when comparing operating costs per connected property or per property billed.

Figure 6.3: Unit operating costs per connected property

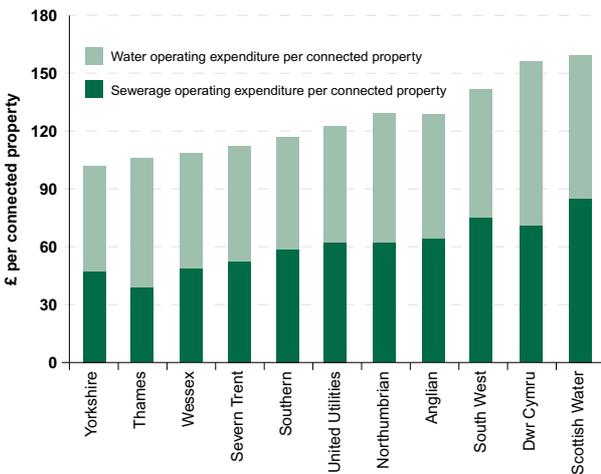
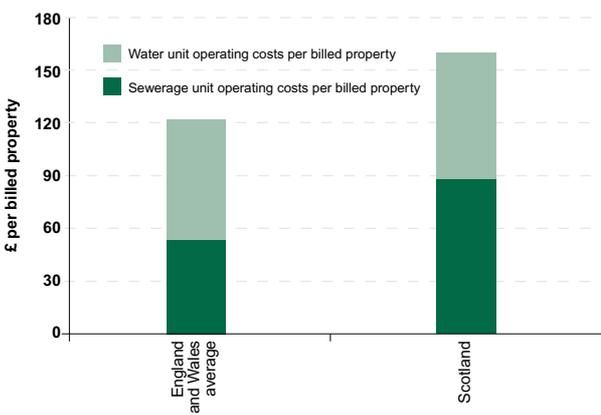


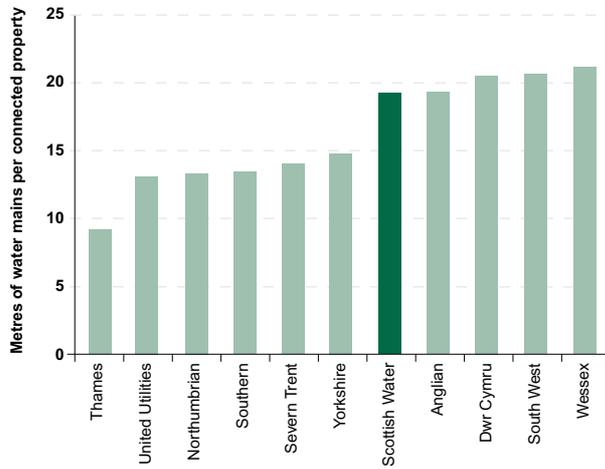
Figure 6.4: Unit operating costs per property billed



6.1.1 Costs relative to water mains operated

Comparing the length of water main to the number of properties served seems to indicate that companies that serve a more urban area will have a lower ratio of length of water mains to property than companies that serve a more rural area. This is illustrated in Figure 6.5.

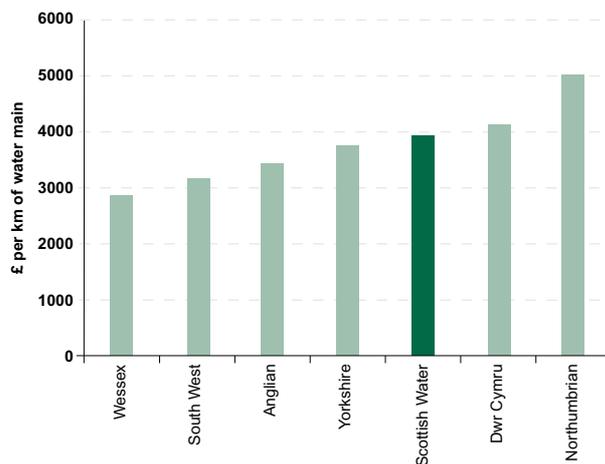
Figure 6.5: Ratio of the length of water main to the number of properties served



Despite the fact that Scottish Water is responsible for a larger area than any of the companies in England and Wales, the ratio of the length of water mains to the number of connected properties is similar to that observed in England and Wales. This no doubt reflects the high proportion of the Scottish population who reside in the Central Belt.

Given that the length of water main operated by a company is a useful indicator of how rural, on average, the area served is, it is useful to compare water service operating costs incurred per kilometre of water main. This is shown in Figure 6.6. The more urban companies (Severn Trent Water, Southern Water, Thames Water and United Utilities) are omitted.

Figure 6.6: Water service operating costs incurred per kilometre of water main operated

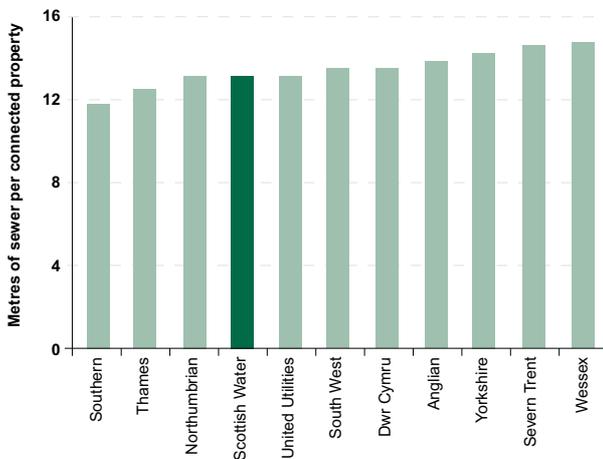


At first sight Figure 6.6 suggests that costs are no higher in Scotland than south of the border. However, companies in England and Wales incur significant additional costs for the right to abstract water under licence, to meet strict leakage targets and to install and read meters for a large proportion of domestic customers.

6.1.2 Costs relative to sewers operated

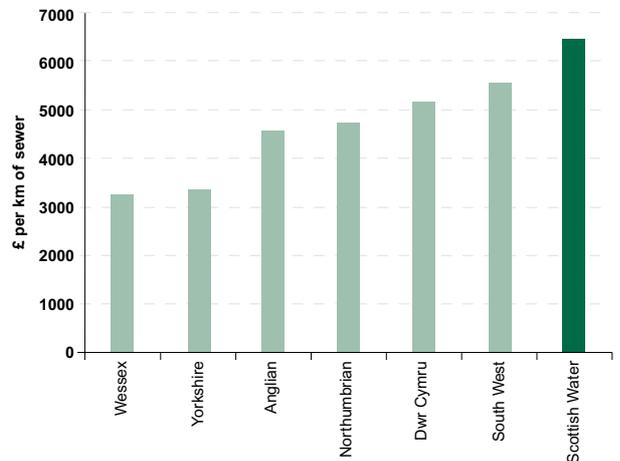
Instead of mains length, sewer length is an alternative indicator of how rural, on average, the area served is. Figure 6.7 compares the ratio of sewer length to the number of properties served. The picture is comparable to that for water mains in that Scottish Water is similar to the companies in England and Wales.

Figure 6.7: Ratio of the length of sewer to the number of properties served



Operating costs incurred for the sewerage service per kilometre of sewer are compared in Figure 6.8. Again we have omitted the more urban companies. This comparison confirms that costs are higher in Scotland than in rural areas in England and Wales.

Figure 6.8: Sewerage service operating costs incurred per kilometre of sewer operated



6.1.3 Employment costs comparisons

Direct employment costs represent a significant proportion of total operating¹⁶ costs in each company in England. This is illustrated in Figure 6.9.

Figure 6.9: Direct employment costs as a percentage of total operating costs

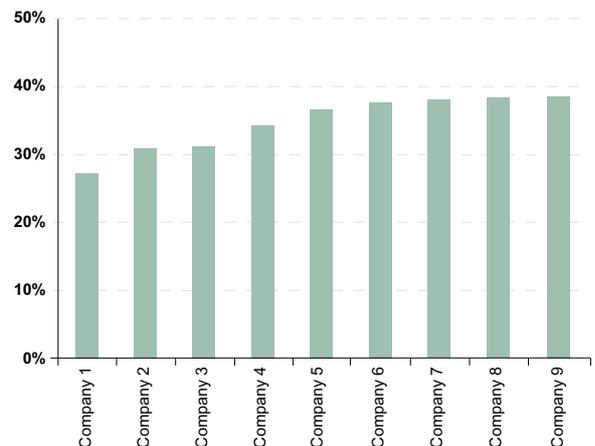
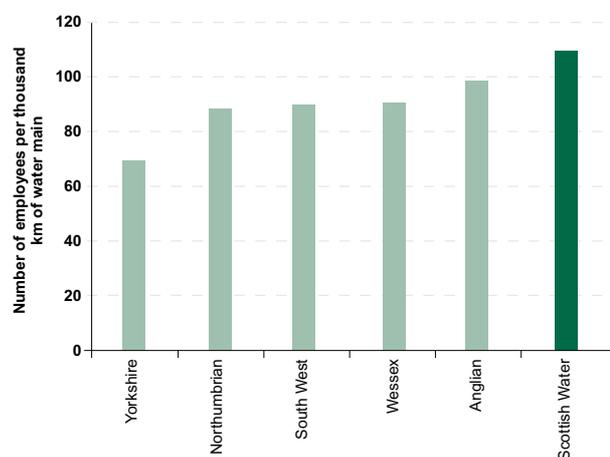


Figure 6.10 compares the number of people employed to deliver service to customers in England with that in Scotland. In order to ensure that the comparison is fair, we show the ratio of the number of employees to the length of water mains operated, again excluding the more urban companies. Again there appears to be scope for improved efficiency in Scotland.

¹⁶ The unique structure of Welsh Water's operating contracts means that meaningful comparisons cannot be made.

Figure 6.10: Comparison of number of employees per thousand kilometres of water main in England and Scotland



6.2 2002-03 operating expenditure

Chapter 3 outlined the scale of the efficiency savings expected during 2002-03 in the *Strategic Review of Charges 2002-06*.

In order to be able to gain a true picture of Scottish Water's progress in reducing its operating expenditure, it is essential to compare like with like. We have to be alert for changes in reporting or in cost allocation which could artificially affect Scottish Water's efficiency position.

Examples of such changes include the following:

- Changing the policy regarding capitalisation of operating expenditure. Increasing capitalisation effectively transfers costs from operating expenditure to capital expenditure, thus potentially making Scottish Water appear more efficient on operating expenditure.
- Categorising ongoing operating costs as exceptional or atypical when they are likely to recur.

Each year, we examine the information provided by Scottish Water in order to ensure that comparisons are being made on a like-for-like basis. This review has resulted in certain adjustments to the reported operating expenditure in the year 2002-03. These are shown in Table 6.1, which sets out the operating expenditure of Scottish Water in 2002-03 in comparison to the target set in the *Strategic Review of Charges 2002-06*.

Table 6.1: Calculation of allowable operating expenditure

	Scotland 2001-02 ¹⁷	Scottish Water 2002-03
Audited operating costs (before exceptionals)	£581.1m	£682.5m
Less: depreciation and amortisation	(£171.7m)	(£246.3m)
Less: PPP ¹⁸	(£34.6m)	(£105.4m)
WICS adjustments:		
Subtract one-off costs	(£8.4m)	-
Addition to bad debt provision ¹⁹	£5.7m	-
Inter-authority trading ²⁰	-	£6.4m
Adjust own work capitalised ²¹	£8.1m	£12.7m
Adjust staff costs ²²	-	£1.3m
Underlying controllable operating expenditure	£380.5m	£351.2m
Strategic Review target controllable operating expenditure	£360.5m	£304.3m
Difference	£20.0m	£46.9m

Table 6.1 shows that Scottish Water reduced its base operating costs by £29.3 million to £351.2 million during its first financial year. Once inflation is taken into account, operating expenditure is some £37 million lower in real terms than in 2001-02. This is a reduction of almost 10%.

This progress in delivering efficiency targets is welcome. However, we are disappointed because it falls some way short of the target set in the *Strategic Review of Charges*. This target was £304.3 million. The gap between current performance and the original annual target has therefore increased to £46.9 million in 2002-03. This compares with a gap of £20 million that was identified in last year's *Cost and Performance Report*.

¹⁷ Numbers in this column do not add due to rounding of the figures from the three predecessor authorities; East of Scotland Water Authority, North of Scotland Water Authority and West of Scotland Water Authority.

¹⁸ Public Private Partnership: an agreement between Scottish Water and a private contractor for the building and operation of an asset.

¹⁹ Adjustments to reported provision for bad debt, where available evidence does not support a change from 2000-01 levels.

²⁰ The efficiency targets contained within the *Strategic Review of Charges* were set based on the costs incurred by the three authorities in 2000-01. These costs included inter-authority trading, mainly bulk supplies of water, which Scottish Water no longer incurs.

²¹ Adjustments to the value of own work capitalised, where available evidence does not support a change from 2000-01 levels.

²² Adjustments for staff costs that were allocated to exceptionals and PPP.

In Chapter 5, we noted that management of Scottish Water may choose a different profile of achieving the end efficiency target. Our view, based on our analysis of the historic performance of companies south of the border, is that if the 2005-06 target of £265 million is to be achieved, Scottish Water should be within £5-10 million of the original annual targets that were set in the *Strategic Review of Charges*. If Scottish Water is further behind, we believe that it would have to accelerate its improvement in operating cost efficiency significantly.

We would therefore have hoped to see more progress and will be pressing for improvement.

6.2.1 Spend-to-save

As explained in Chapter 3, we allowed £200 million in Scottish Water’s revenue cap to help fund reorganisation costs. This sum is funded by customers through bills and it is therefore imperative that Scottish Water uses it properly. We would expect these funds to be directed at initiatives that offer a short payback period. In other words, we would expect spend-to-save to generate efficiencies in excess of £200 million in the period 2002-06.

Table 6.2 shows Scottish Water’s use of spend-to-save and compares this with the assumptions made in the Strategic Review of Charges.

Table 6.2: Spend-to-save expenditure

	Scottish Water actual expenditure 2002-03	Assumptions at Strategic Review of Charges for 2002-03
Spend-to-save operating expenditure	£24.6m	£40m
Spend-to-save capital expenditure	£16.9m	£15m

Scottish Water has to date used less spend-to-save than was assumed in the *Strategic Review*. Much of the spend-to-save that has been used relates to severance and early retirement schemes. Scottish Water has clearly targeted employment costs as a principal source of operating cost efficiency gain during 2002-03. This is not surprising as employment costs constitute the single largest element of controllable operating expenditure. However, if Scottish Water is to achieve even its revised efficiency target, it will have to take a much wider view in order to identify opportunities to reduce all operating costs.

We continue to believe that there is no reason why Scottish Water should not beat the revised efficiency target of £265 million. Similar levels of savings have been achieved in England and Wales and Scottish Water should learn from the experience of the water and sewerage companies and other utilities.

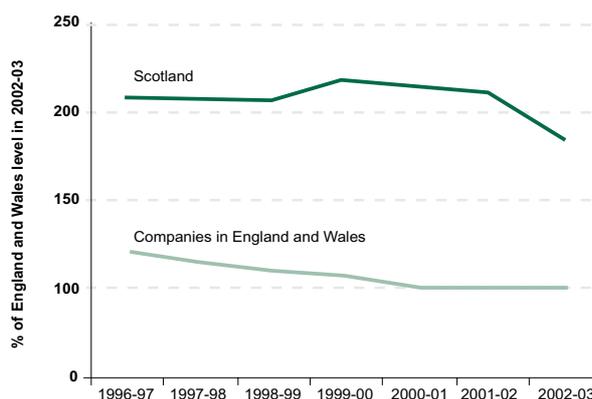
We will continue to press Scottish Water to make full use of spend-to-save.

6.3 Trends in operating expenditure

The adjusted base operating costs allow us to compare the relative efficiency of the water industry north and south of the border. It is possible to quantify progress in improving efficiency in England and Wales since 1992-93. This was the base year for Ofwat’s first Periodic Review of price limits. In Scotland it is only possible to go back to 1996, the year that the three authorities were formed.

In our *Costs and Performance Report 2001-02* we compared progress year on year in Scotland relative to England and Wales from 1996, assuming a common starting point. This assumption, however, understated the gap in relative efficiency. In Figure 6.11, we present a revised comparison of trends. This makes use of our analysis of relative efficiency in 2002-03, which we describe later in this chapter. The two lines in Figure 6.11 indicate, year on year, the relative operating cost levels in Scotland and in England and Wales on a like-for-like basis. Our analysis has taken into account relevant differences in geography, the assets used to provide the service, and the scope and quality of that service.

Figure 6.11: Base operating cost trends in Scotland, compared with England and Wales



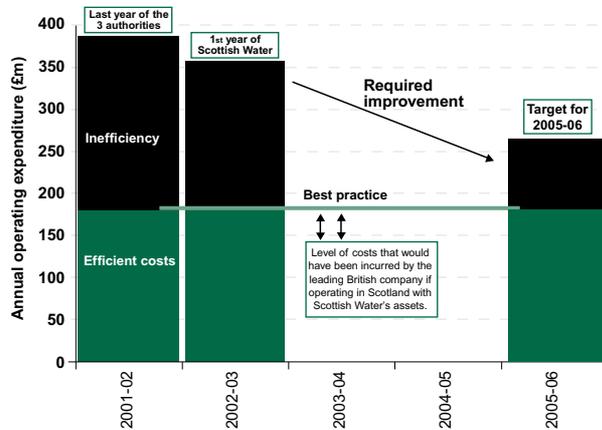
Scottish Water’s performance in its first year of operation appears to represent an important improvement in operating cost efficiency. This is welcome after the years of worsening performance that characterised the former three authorities. Customers have a right to expect this rate of improvement to be sustained on an ongoing basis.

There are, however, some reasons to be concerned. The efficiency savings observed in 2002-03 do appear to result primarily from the one-off effects of the merger of the three authorities. For example, a significant number of employees opted for voluntary severance or early retirement rather than a transfer to Scottish Water. This should have given initial impetus to Scottish Water’s efforts to improve its efficiency.

More recently, progress appears to have slowed considerably. Scottish Water’s regulatory returns allow us to view the profile of savings and assess whether the industry is on track to meet its 2005-06 targets for operating costs. We have examined monthly cost information to calculate the current pace of improvement towards target. Since the formation of Scottish Water in April 2002, operating costs, after correcting for changes in accounting policy, are declining at a rate of 0.32% per month. This is equivalent to 3.8% or £13.2 million per year, in nominal terms (i.e. with no adjustment for inflation). This rate of progress, if sustained, will not be sufficient to meet the revised regulatory target of £265 million for 2005-06. It would leave a shortfall in performance of around £47 million in that year.

Figure 6.12 summarises the current position. It shows the savings achieved when Scottish Water was formed. It also shows both the target and the estimated cost level that would be achievable by a leading company from south of the border in delivering an equivalent level of service to customers in Scotland. The costs incurred in Scotland in excess of best practice are the inefficiency that increases customers’ bills.

Figure 6.12: Efficiency targets in context



6.3.1 Comparison of Scottish Water’s efficiency with companies south of the border

We described our detailed benchmarking techniques in Chapter 2. Analysis for 2002-03 shows that, despite the improvement noted in Scottish Water’s performance, there is still a considerable efficiency gap. This is illustrated in Table 6.3²³.

Table 6.3: 2002-03 efficiency scores

	Econometric models	Alternative model
Scottish Water	159	156
England & Wales average	100	100
England & Wales leading company	87	76

The efficiency gap can also be expressed as a percentage. This is shown in Table 6.4.

Table 6.4: 2002-03 efficiency gaps

	Econometric models	Alternative model
Scottish Water to England & Wales average	37.1%	35.9%
Scottish Water to England & Wales leading company	45.3%	51.3%

The size of the efficiency gap is illustrated in Figures 6.13 and 6.14. These figures illustrate the relative performance of Scottish Water and the companies south of the border in 2002-03.

²³ Both the econometric and alternative models use 2002-03 information for Scottish Water as submitted in the June Return 2003. However, the information for the companies in England and Wales is taken from the June Return 2002 CD published by Ofwat in October 2002 and unpublished detailed 2001-02 costs for the sewerage service, which were not available when we compiled the *Costs and Performance Report 2001-02*. This additional information results in a slight adjustment to the score for the leading company in the econometric models. We consider that it is unlikely that there will have been significant changes in information in England and Wales in the year 2002-03.

Figure 6.13: Relative operating expenditure efficiency scores – econometric models

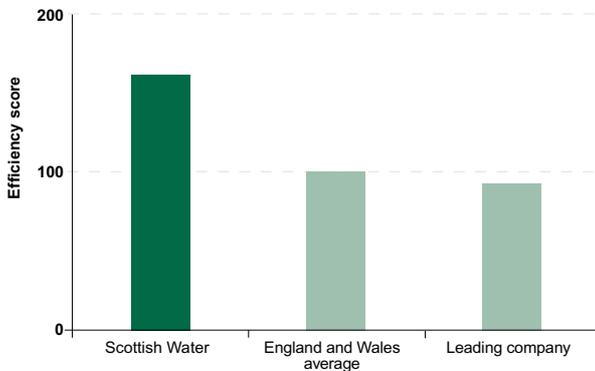
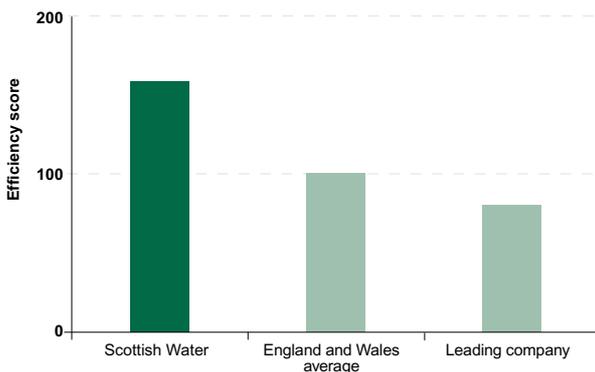


Figure 6.14: Relative operating expenditure efficiency scores – alternative model



The impact of the efficiency gap is perhaps best understood by converting the scores to monetary equivalents. If we take the scores from the econometric models as an example, for every £1 of operating expenditure in England and Wales, Scottish Water had to spend £1.59 to deliver the same level of service. The leading company south of the border would have spent only 87 pence.

Table 6.5: Cost of inefficiency in operating costs

	Cost
Scottish Water	£1.59
England & Wales average company	£1.00
England & Wales leading company	£0.87

6.3.2 Differences in scope and levels of service

In Chapter 5, we emphasised the importance of ensuring that comparisons were made on a like-for-like basis. The financial adjustments described above were essential to ensure that there could be a proper comparison of costs incurred.

However, in the *Costs and Performance Report 2001-02* we highlighted the significant differences in the scope of activity and levels of service provided by Scottish Water and by the English and Welsh companies. Examples of such differences include the following:

- **Leakage** – Ofwat sets leakage targets for the companies in England and Wales that are designed to take the companies to the economic level of leakage. Companies are required to keep leakage at these levels. No such targets are yet set in Scotland. It is estimated that the impact upon the companies’ operating expenditure is approximately 3.5%-4%.
- **Domestic metering** – the companies in England and Wales incur higher costs because a larger proportion of their customer base is charged on a metered basis. This is estimated to have a 2%-2.5% impact on operating expenditure.
- **Customer service** – in general, the companies in England and Wales offer higher levels of customer service²⁴ than Scottish Water, for example in responding to customer complaints and queries. The impact of this on operating expenditure is estimated to be approximately 3.5%.
- **Compliance** – the companies in England and Wales achieve a higher level of compliance with the Drinking Water Directives. This is estimated to have an impact on operating expenditure of approximately 1.5%.

The impact of these and other differences varies between the companies. However, on average if the companies only had to provide the same level of service as in Scotland, they would be able to reduce their current base operating costs by around 12%.

²⁴ The level of customer service is objectively measured using Ofwat indicators, which were discussed in the 2001-02 Customer Service Report. The 2002-03 report will be published before the end of the year.

The benchmarking scores reported in Table 6.3 above do not, therefore, take account of the differences in the scope and level of service provided by the water and sewerage industry in Scotland and in England and Wales. As a result, they underestimate the real operating efficiency gap. Table 6.6 shows the revised scores from the benchmarking models after taking these differences into account. As before, the scores are calibrated by taking a score of 100 for the average in England and Wales.

Table 6.6: Efficiency scores taking account of differences in scope and customer service

	Econometric models	Alternative model
Scottish Water	186	183
England & Wales average	100	100
England & Wales leading company	87	76

Table 6.7: Percentage gap to English and Welsh companies, taking account of difference in scope and customer service

	Econometric models	Alternative model
Scottish Water to England & Wales average	46.2%	45.4%
Scottish Water to England & Wales leading company	53.2%	58.5%

Figures 6.15 and 6.16 illustrate the performance of Scottish Water relative to companies south of the border.

Figure 6.15: Relative operating expenditure efficiency scores allowing for differences in scope of activities and customer service – econometric models

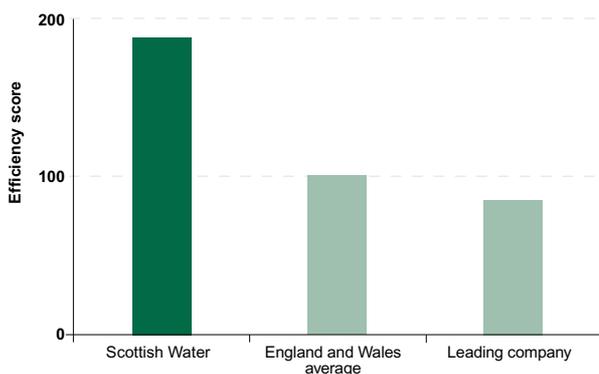
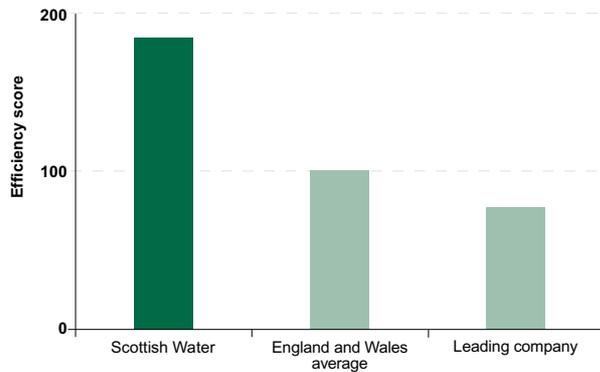


Figure 6.16: Relative operating expenditure efficiency scores allowing for differences in scope of activities and customer service – alternative model



Once again it is useful to make the comparison in monetary terms: the average English and Welsh company would incur £1 of operating expenditure to deliver a level of service and scope of activity that would cost Scottish Water over £1.80. This is shown in Table 6.8 using results derived from the alternative model.

Table 6.8: Comparison of relative efficiency in monetary terms

	Cost – Econometric models	Cost – Alternative model
Scottish Water	£1.86	£1.83
England & Wales average	£1.00	£1.00
England & Wales leading company	£0.87	£0.76

6.4 Quality of regulatory information

The analysis of Scottish Water's performance outlined earlier in this chapter is based on information submitted in its Annual Return. This return is not yet subject to independent scrutiny. All of the information provided to Ofwat, by contrast, is verified by independent reporters.

In 2002-03, Scottish Water's Annual Return contained a number of significant changes to the information that is used in the analysis of operating costs. Many of these changes are due to the fact that the reporting systems of the three predecessor authorities have been harmonised so that information is reported in a consistent manner across Scotland. Some of the changes that were reported have benefited Scottish

Water in the modelling. We have queried such information and the explanations received from Scottish Water were, in the main, satisfactory. However, we would not expect any further significant changes in the methodology adopted by Scottish Water for compiling the information. Any proposals for such changes would be subject to rigorous scrutiny.

Scottish Water still needs to improve significantly the quality of the regulatory information that it reports. The commentaries that accompany the information have improved, but inaccuracies and uncertainties are still too common. We will continue to monitor the steps Scottish Water is taking to improve further its regulatory reporting. In addition, we believe that the planned introduction of an independent reporter (similar to those that are already in place in England and Wales) will help.

Chapter 7

Capital costs performance

In the *Strategic Review of Charges 2002-06*, we explained that capital efficiency could be achieved through improvements in strategic asset management, programme planning, procurement or innovation. As explained in Chapter 2, we can only make a reliable annual assessment of improvements in procurement. The other areas for potential improvement will be discussed in our 2002-03 *Investment and Asset Management Report*²⁵.

This chapter therefore reports only on progress in procurement efficiency, and assesses the overall efficiency gap in capital expenditure between Scottish Water and England and Wales in 2002-03.

7.1 Benchmarking results

Scottish Water completes a cost base submission as part of its Annual Return. We use this information to assess its efficiency in the procurement of capital investment projects. Our analysis of this year's cost base submission with that for 2001-02²⁶ shows that Scottish Water has improved its procurement efficiency by 5% in real terms.

This builds upon the 6% improvement that was achieved in 2001-02. Such improvement is obviously welcome. However it is important to put this progress in perspective. In a recent publication Ofwat states that the companies in England and Wales have made a 9% real improvement in the period 2000 to 2003²⁷.

We carried out a detailed assessment of relative capital expenditure efficiency in the three predecessor water authorities as part of the Strategic Review of Charges in 2001. This included procurement, strategic asset management, programme planning and innovation. However, if we assume that Scottish Water achieved the same annual rate of efficiency improvement in strategic

asset management, programme planning and innovation as it achieved in procurement, the relative efficiency of the corporation in 2002-03 would be as presented in Table 7.1.

Table 7.1: 2002-03 capital expenditure efficiency scores

	Efficiency score
Scottish Water	135
England & Wales benchmark	100
England & Wales lowest submission	86

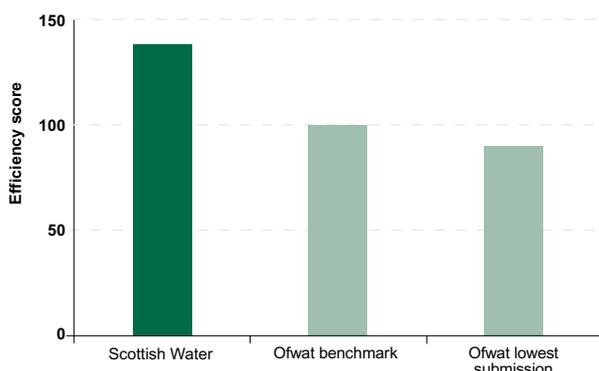
The efficiency gap can be shown by converting the scores in Table 7.1 to percentages. These are shown in Table 7.2.

Table 7.2: 2002-03 capital expenditure percentage efficiency gap

	Percentage efficiency gap
Scottish Water to benchmark	25.9%
Scottish Water to leading company	36.3%

Figure 7.1 shows the capital expenditure efficiency of Scottish Water relative to benchmark²⁸ and best practice in England and Wales in 2002-03.

Figure 7.1: Relative capital expenditure efficiency scores



²⁵ The 2002-03 *Investment and Asset Management Report* will be published in January 2004.

²⁶ The 2001-02 cost base submission was a consolidation of the cost bases of the three predecessor authorities.

²⁷ Ofwat, *Financial performance and expenditure of the water companies in England and Wales*, August 2003 quotes a 9% improvement in overall capital efficiency during 2000-01 to 2002-03 in real terms. This is over and above the efficiencies assumed by Ofwat at the 1999 Periodic Review.

²⁸ The benchmark chosen by Ofwat does not necessarily equal the lowest cost submission. For a cost to be chosen as the benchmark it must be judged to be reliable and accurate; the company must have closely followed Ofwat's reporting requirements; and the company that has submitted the cost must be sufficiently large, usually greater than 3% of the industry (measured by turnover).

Table 7.3 illustrates the capital costs incurred by Scottish Water to procure a capital output that would cost the companies in England and Wales £1.

Table 7.3: Relative costs of investment

	Cost
Scottish Water	£1.35
England & Wales benchmark	£1.00
England & Wales best practice	£0.86

7.2 Quality of regulatory information

The comparisons made using the cost base submitted by Scottish Water rely on the quality of information provided – perhaps to an even greater extent than is the case for operating cost models. This is because there is less opportunity to validate the information other than from the explanations included in the commentary. For that reason, we welcome the introduction of a reporter. We believe that this will benefit Scottish Water and ensure that our comparisons are as robust as possible.

There were significant year on year changes in some of the standard capital costs reported by Scottish Water in 2002-03. Examples of these include the following:

- One standard cost for installing a new filtration system at a water treatment works increased by 19%.
- Another standard cost for reconstructing a preliminary sewage treatment works fell by 42%.

Scottish Water's cost base submission also contained significant changes in the allocation of expenditure to different areas of its investment programme. The submission's commentary explained that the majority of these changes resulted from errors that were made in the cost base submission for 2001-02. We have accepted all of the changes in the information submitted.

However, the extent of the changes casts some doubt on the 5% improvement in procurement efficiency suggested by the submission. We hope that the introduction of a reporter will ensure that future submissions are more accurate.

We would also hope that the introduction of a reporter will ensure that future cost base submissions are more complete. In a number of areas within the submission Scottish Water allocates expenditure from its investment programme to standard costs, yet does not provide the standard costs to allow us to analyse procurement efficiency. Examples include the following:

- **Management and General:** This covers investment in office accommodation and the provision of telemetry communications equipment. Scottish Water allocated 18% of its projected water service expenditure to this item, but no standard costs were provided.
- **Ultra-violet treatment:** This covers the installation of additional ultra violet treatment at sewage treatment works. Scottish Water allocated 3% of its projected sewerage service expenditure to this area, but no standard costs were provided.

The first example is of particular concern because it means that Scottish Water's standard costs cannot be fully compared with the benchmarks in England and Wales. Consequently, we are unable to be as complete as we would like in our assessment of Scottish Water's year on year improvement in procurement efficiency.

Chapter 8

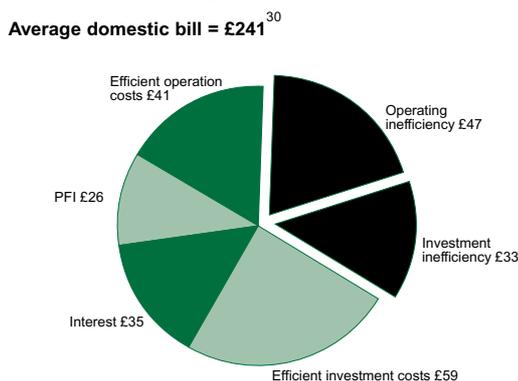
The impact on customers

The amount paid by Scottish customers in bills, and the value for money they receive, is directly dependent on the level of efficiency achieved by the industry. The outlook for prices in the future depends on the pace and scale of efficiencies delivered by Scottish Water.

In the *Strategic Review of Charges*, we explained that with the increases in revenue recommended and the achievement of the agreed efficiency targets by Scottish Water, there was a likelihood that future increases in bills could be kept below the rate of inflation. This attractive prospect is still possible; however, there will need to be a significant acceleration in the rate at which Scottish Water improves its efficiency.

In 2002-03, customers' bills included significant costs that would not have been incurred if Scottish Water were as efficient as the leading companies in England and Wales. For the average domestic customer, bills were an estimated £80 higher than they needed to be. In other words, a leading company in England and Wales could have reduced the Scottish average domestic bill from £241 to £161. This point is illustrated in Figure 8.1. This estimate assumes that domestic and non-domestic customers share the burden of inefficiency evenly.

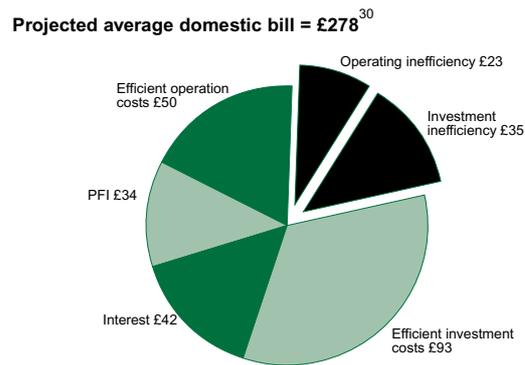
Figure 8.1: Impact of inefficiency on domestic customers' average bills in 2002-03



Efficiency targets are set in order to challenge Scottish Water to improve its performance and offer better value for money to its customers. Even if Scottish Water achieves its capital cost efficiency and revised operating cost targets in full, there will remain a significant cost element of bills in 2005-06 caused directly by inefficiency. Figure 8.2 shows that the annual cost to the

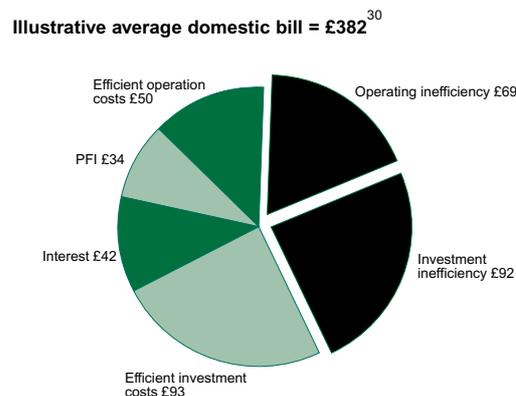
average domestic customer of inefficiency is still likely to be £58 even in 2005-06²⁹. This assumes that Scottish Water meets its adjusted targets and that the companies south of the border improve no faster than was assumed at Ofwat's 1999 Periodic Review.

Figure 8.2: Impact of inefficiency on domestic customers' average bills in 2005-06, assuming Scottish Water achieves adjusted efficiency targets



If the revenue caps in the *Strategic Review of Charges* had not taken account of the scope for efficiency, customers' bills would have been significantly higher. This is illustrated in Figure 8.3.

Figure 8.3: Impact of inefficiency on domestic customers' average bills in 2005-06, without progress on efficiency beyond 2000-01



In this case the average domestic customer would have had to pay £161 per year because of the inefficiency of the service provider.

As economic and customer services regulator, we will monitor the performance of Scottish Water closely. This monitoring will continue to rely on the established benchmarking techniques and on the accuracy and completeness of the regulatory information described earlier.

²⁹ In last year's *Costs and Performance Report* this inefficiency was shown as £55. The increase is due to the change in Scottish Water's target for 2005-06.
³⁰ Totals may not add exactly, due to rounding. The £382 bill is consistent with the overall increase in revenue of 73% that would have been required if there had not been such scope for efficiency. The slightly different percentage increase reflects assumptions about water volumes and property growth.

Chapter 9

Ensuring the success of Scottish Water

In the *Strategic Review of Charges*, we stated that the success of Scottish Water would depend upon a "significant culture change in the organisation"³¹. We also identified several factors that we thought would be important in bringing about the changes required. These were:

- improved corporate governance;
- clearer and more public criteria incentives paid to management;
- improved understanding of the competitive threats facing Scottish Water;
- improved understanding and clarity in the management and reporting of costs;
- a clear and maintained focus on providing the statutory water and sewerage service to customers; and
- a commitment to implementing best practice.

Each of these factors will need to be addressed if customers in Scotland are to benefit from the very significant potential for efficiency improvements.

It is, of course, also important that the Scottish Executive continues to recognise its ownership responsibilities to customers and ensures that Scottish Water plans to achieve, then beat regulatory targets.

In the *Strategic Review*, we also showed that the industry in Scotland had not been put at any disadvantage by the debt commutations in 1989 and in 1996 that were underwritten by the UK Treasury. We also explained why a further sustained increase in borrowing was not in the interests of customers. Some commentators still suggest that either debt commutation and/or increased borrowing should be used to reduce prices for today's customers. While this may benefit some customers in the short run it is likely to

disadvantage all customers in the medium to longer term. We explain our analysis below.

9.1 Improved corporate governance

Regulatory scrutiny should ensure that customers do not have to pay any more for the service than is absolutely necessary. But this outcome will require a significant improvement in both the operating cost and capital cost efficiency of Scottish Water. Regulation seems to be beginning to have a positive effect but any shortfall in Scottish Water's performance will be clearly apparent as they have to match a level of performance that has already been achieved by the companies south of the border.

The efficiency targets that we have set are designed to be challenging but capable of being beaten. It is common practice for regulators to set efficiency targets that can be beaten, in order to act as an incentive. In England and Wales, the regulator allows water and sewerage companies to keep the benefits of outperformance for five years, after which time such benefits are returned to customers. Any such outperformance could increase the potential return (above the allowed cost of capital) to shareholders. Similarly, outperformance may make access to loan debt more straightforward or may reduce the cost of debt.

First impressions suggest that the companies in England and Wales face a different set of incentives because, unlike Scottish Water, they operate in the private sector. However, some of the pressures that work in the private sector model could be replicated in the public sector. An obvious example would be to ensure that the owner and the Board regard the regulatory settlement as the minimum acceptable level of performance.

Access to debt financing is another of the key levers under the owner's control. It is vital that access to this funding should be appropriately scrutinised. Without proper scrutiny, customers are likely to face higher interest costs than necessary and, as a consequence, higher bills.

³¹ *Strategic Review of Charges*, Section 7, Chapter 33, page 307.

9.2 Clearer and more public criteria for incentives paid to management

In the *Strategic Review* we recommended that Ministers should ensure that clear and public criteria for the level of incentives paid to executive directors are established. We asserted that these criteria should be based on overall achievement, within the proposed revenue cap, of the required environmental and public health compliance targets and of customer service standards.

There is increasing pressure in both the private and not-for-profit sectors to increase the transparency of decisions about remuneration in general, and in particular about incentives for senior management. From a customer perspective, we believe that incentives should be designed to encourage exceptional performance. We recognise that the Board has a responsibility to set the strategic priorities of Scottish Water. However, we also consider that management bonuses should reflect, and be seen to reflect, improvements in the value for money to customers.

9.3 Improved understanding of the competitive threats facing Scottish Water

In the *Strategic Review* we analysed in some detail the likely impact of competition on the water and sewerage industry in Scotland. Our principal conclusions were as follows:

- Competition in most of the activities of a water and sewerage provider is possible only if the supplier is inefficient or has misallocated costs. This would lead to new entrants having a material incentive to cherry-pick rather than be truly innovative. It is therefore in customers' interests that Scottish Water focuses on reducing and correctly allocating its costs.
- Competition is possible and desirable in the retail side of water and sewerage services. There are no public health or environmental issues. Customers would benefit from more choice and the experience of other utilities would suggest that it leads to greater pressures to improve efficiency across the business. The revenue loss for Scottish Water would be limited, assuming that it has focused on reducing and correctly allocating its costs.

Customers should not pay any more than is necessary. This will require Scottish Water to respond appropriately to competitive threats.

9.4 Improved understanding and clarity in the management and reporting of costs

In the *Strategic Review*, we highlighted the importance of activity based costing and an appropriate level of legal and accounting separation. We argued that this increased transparency would help management to target efficiency initiatives more effectively. This can only benefit customers in the medium to longer term. Improved targeting of initiatives is also likely to reduce the frustrations among employees by showing that benefits can be delivered.

Evidence from the electricity industry suggests that dividing supply and distribution activities into separate companies revealed activities and costs that were wanted neither by the supply nor by the distribution business. Similarly, when British Gas was broken up many unnecessarily incurred costs were identified. It seems likely that Scottish Water's managers could realise similar benefits by implementing an appropriate degree of accounting separation of activities.

In our view, such separation would enable Scottish Water to focus on understanding the costs associated with delivering the investment outputs and levels of service required by the *Strategic Review*. Moreover, this would only bring Scottish Water into line with the companies in England and Wales. They are already required to submit audited regulatory accounts for the water and sewerage business separately from the accounts of the ultimate holding company.

9.5 A clear and maintained focus on providing the statutory water and sewerage service to customers

Given the scope for efficiency that was originally identified in the *Strategic Review*, we believe that Scottish Water should remain focused on improving its level of service to customers and reducing its costs. We recognise that there may be opportunities for Scottish Water to use its skills and physical assets to increase

revenue. However, we have concerns that such opportunities may prove more of a distraction than a benefit.

In the *Strategic Review*, we examined the extent and profitability of new non-core business developed (i.e. not acquired) by the English & Welsh water and sewerage companies. The evidence showed that only limited extra revenue had been generated and that some of the activities were loss-making. For the profit from such activities to be meaningful relative to the £380 million a year that Scottish Water is tasked with saving, these activities would have to become disproportionately significant in revenue terms. We do not believe this would be in the customer interest – especially since inefficiency in the basic water and sewerage business could markedly increase Scottish Water's vulnerability to non-value-adding competition.

9.6 Commitment to implementing best practice

In both the *Strategic Review* and in this report we have shown how the companies in England and Wales have delivered a similar improvement in efficiency in a similar timescale to that required from Scottish Water. This clearly indicates that Scottish Water should be able to achieve its efficiency targets.

Indeed, it could be argued that Scottish Water is in a better position as it can learn from the experience of the companies south of the border. The experience of the companies ranges from those who have looked to contract out significant areas of activity, to those who have sought to develop equivalent levels of internal flexibility. Customers would undoubtedly benefit if Scottish Water could draw on this experience and make more swift progress towards its targets.

9.7 Debt commutation

Many commentators have asserted that the Scottish water industry was unfairly treated in the amount of debt commuted at reorganisation. The argument is that the privatised companies in England and Wales had all of their debt commuted whereas less than half of the total water and sewerage debt of the Regional 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.

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 and there is also 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 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 best 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 for 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^{32, 33}. 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 the privatisation was £6.52 billion. This is equivalent to £275 for each household in England and Wales. The 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

³² £5.02 billion was commuted and £72.9 million of new debt issued in favour of the Treasury.

³³ 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.

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 £1,700 million of local regional 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 cost of this 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 about six times greater than that incurred reorganising the 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 again 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 the privatisation was a success³⁴. In both cases customers have to meet these costs.

The impression that customers in Scotland have been disadvantaged can only result from operational and capital cost inefficiency. Consequently, we focus on efficiency improvement in our efforts to promote the interests of all customers.

9.8 Increasing borrowing

Unless revenues are brought broadly into line with the

average continuing annual obligations of Scottish Water, there will be a continuing need to increase borrowing in order to balance the books at the end of the financial year.

Borrowing can and should play an important role in smoothing the cash needs of Scottish Water over periods of particularly high investment. However, the borrowing should only be used when legislative, practical, or operational deadlines require accelerated capital spending. There does not appear to be any realistic likelihood of the annual level of efficient capital spending declining in real terms in the foreseeable future.

Additionally, it must be borne in mind that borrowings need to be repaid with interest from future revenues. Ultimately this will result in revenues having to increase to meet the higher maintenance and replacement costs of the overall improved system and the interest charges on the borrowing. If the underlying revenue is not sufficient to cover the ongoing operational and maintenance expenditures faced by Scottish Water, borrowing is only delaying and worsening the charge levels that future generations face. For example, if revenues are not sufficient to cover all outgoings and the costs of asset maintenance, there will be an increasing debt and interest burden, the bill for which would still have to be paid.

If we borrow to delay the impact on charges – and not to smooth the cost of meeting obligations – customers' bills over their lifetime will be higher than otherwise would have been the case. The *additional* cost is at least³⁵ the net present value of the annuitised interest payments (approximately equal to the amount borrowed³⁶).

This principle is perhaps made clearer if we compare the amount borrowed with the total repayments on any loan. For example, we would not buy a car each year and take out a loan to be repaid over, say, three years. This would be an expensive option. Given the forecast sustained levels of efficient investment spending that will be required, borrowing more now would have a similar impact on customers.

³⁴ 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% vs 8.10% – 9.68%.

³⁵ This assumes that the principal is never repaid and is refinanced at maturity.

³⁶ The net present value is the same as the original loan principal if the interest rate and the discount rate are the same.

Chapter 10

Conclusions

This is the second annual costs and performance report for the water industry in Scotland. Last year's report highlighted that the three former authorities performed more poorly in their final year than had been expected when the *Strategic Review of Charges* was completed. In response to this and to representations by Scottish Water, we have increased the base operating costs allowed to Scottish Water by £6.6 million to £265 million.

During this year, we have also attempted, without success, to confirm capital efficiency claims that were made by the former East of Scotland Water Authority. In the absence of confirmed outputs for customers we will seek to increase the capital efficiency targets that will be set in the next *Strategic Review of Charges*, in order to ensure that customers do not lose out.

Analysis of Scottish Water's performance in its first year of operation reveals a mixed picture:

1. Scottish Water reduced its operating costs by £37 million in real terms, or nearly 10%, during its first year. This is a welcome improvement after the disappointing performance of the three authorities in their final year.
2. However, much of this improvement appears to have resulted from the initial savings that were made from the merger of the three former authorities. Progress since the immediate post-merger period has been much slower than we would have hoped, at an estimated 3.8% per year.
3. Scottish Water will have to improve at a compound annual rate of 11.2% to achieve even the revised operating cost target of £265 million.
4. Companies in England and Wales continue to make progress on capital investment efficiency. Relative to this, there is no convincing evidence that Scottish Water has narrowed the capital cost efficiency gap.
5. For the average domestic customer, bills were an estimated £80 higher than they needed to be. In other words, a leading company from south of the border could have reduced the Scottish average domestic bill from £241 to £161. Although this is £6 less inefficiency than last year, it is clearly far too much.
6. Scottish Water needs to focus on reducing costs in its network and treatment businesses. Other activities are likely to be a distraction to ensuring that the medium to long term interests of customers are protected. In this regard, it is important that managerial incentives are transparent and are aligned with the interests of customers.
7. Improved efficiency is the only way to ensure better value for money for customers. There are no simple panaceas that would benefit all customers. Increasing debt now will, at best, create even greater problems later. In addition the industry in Scotland was favourably treated by the debt commutation compared with that in England and Wales.

Scottish Water must continue to improve the quality of information and commentary that it provides to us. This is fundamental to ensuring that proper, fair and objective comparisons can be made. Regulation has begun to be effective but there remains much to do.

Appendix 1

Operating expenditure alternative model

The alternative model was developed for two reasons: firstly to respond to the view expressed by the Competition Commission in its enquiries into the price limits set for Mid Kent Water and Sutton & East Surrey Water at the Ofwat 1999 Periodic Review; and second in order to confirm the result of the econometric models.

The alternative model was designed to take full account of the special circumstances surrounding the provision of water and waste water services in Scotland. It uses a fundamentally different approach from the econometric models. It is based on the premise that in most parts of the business, running costs are driven by asset use, volumes and customers. This contrasts with the econometric models, which examine the interrelationships between these and other drivers, and concentrate only on those that best explain cost variation between companies.

This approach splits the business into ten different areas, as follows:

- delivery of water,
- resource and treatment,
- business activities water,
- bad debt water,
- simple sewage treatment,
- complex sewage treatment,
- running the sewer network,
- processing sludge,
- business activities sewerage,
- bad debt sewerage.

Each business area was examined to determine the most appropriate cost drivers. The number of cost drivers varies between one and five. The number depends on the quantity of material factors that influence the operating cost of each area.

The ten areas are combined to determine the overall efficiency of each company. Our analysis of these ratios takes account of any one-off costs and inflation and therefore ensures that all relevant costs in the delivery of water and waste water services have been considered.

In order to use this model we have to estimate unit costs for each component. The unit cost estimates are determined in a number of ways, depending on the source and accuracy of the information available. 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 totals;
- Category 3 - internal Ofwat/Water Industry Commissioner figure based on company evidence;
- Category 4 - figure derived from econometric model;
- Category 5 - plausible estimate;
- Category 6 - balancing item.

Prudent tolerance ranges are incorporated into the model in a standard risk analysis software package. We do this to ensure that the efficiency targets are determined for the authorities as robustly as possible. The tolerance ranges reflect the maximum uncertainty in the unit cost estimates, and are as follows:

- Category 1 = +/- 20%
- Category 2 = +/- 25%
- Category 3 = +/- 33%
- Category 4 = +/- 50%
- Category 5 = +/- 50%
- Category 6 = +/- 50%

Economies of scale are also incorporated into the model because we want to be sure that our results take account of the different size of assets used by each company and authority. We are therefore able to determine a standard sized asset and hence to calculate a single unit cost.

We want to ensure that both the econometric modelling and the alternative approach, although different and independent of one another, are consistent. It could be argued that this model should benefit Scottish Water more than the Ofwat econometric models. This is because this model is more asset based.

Appendix 2

Operating expenditure econometric models

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

Water service

Table A2.1: Water sub-service models

Sub Service	Model type	Explanatory variables
Water resource and treatment	Linear model for unit cost	Population, number of sources, distribution input, proportion of supplies from rivers.
Water distribution	Log unit cost	Population, proportion of total mains length with diameter > 300mm
Water service power	Log linear	Distribution input, average pumping head
Water business activities	Log linear	Number of billed properties

- Water resource and treatment model

This model predicts the costs associated with water resources, the treatment process and the operating environment. Specifically, it takes into account economies of scale at water source level, and the difficulty of treatment as determined by the proportion of supplies that are taken from rivers. Costs per head are modelled rather than volumetric unit costs. This is in order to avoid rewarding high leakage, or penalising companies that have minimised demand.

- Water distribution model

Ofwat carried out a thorough review of the potential cost drivers for water distribution. There was no evidence in the reported information to suggest that mains length is a valid cost driver; and it is statistically inferior to alternative measures of scale. It was found that the length of large diameter mains (300mm diameter or more) is, however, significant. This result was not surprising because repairs, maintenance and inspection on large mains incur much greater costs than those on small mains. The model also reflects the higher costs of operating in urban areas, where the density of underground services and traffic congestion can impair productivity.

³⁷ Biological Oxygen Demand – a measure of the pollution potential of sewage effluent.

The model uses the ratio of the lengths of large mains to small mains as the cost driver. The unit costs are again expressed per head of population, rather than by volume. This reduces the potential to penalise companies with low leakage and/or low demand.

- Water service power model

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

- Water business activities model

This model relates business activity costs to the number of billed properties. It recognises that there are economies of scale. Other potential cost drivers, for example the number of complaints, are ultimately within management control, and so are not considered valid explanatory factors.

Sewerage service

The five sub-service models are summarised in Table A2.2.

Table A2.2: Sewerage sub-service models

Sub Service	Model type	Explanatory variables
Sewerage network	Log linear	Sewer length, area, resident population, holiday population
Large sewerage treatment works	Log linear	Total load, use of biological treatment use of activated sludge, tight effluent consent for suspended solids and BOD ³⁷
Small sewerage treatment works	Unit cost	Works size, works type, load
Sludge treatment and disposal	Unit cost	Weights of dry solids, disposal route
Business activities	Unit cost	Billed properties

- Sewerage network model

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

model takes account of the higher costs expected in regions with a significant holiday population.

- Large sewage treatment works model

The large sewage treatment works model covers those sewage treatment works serving a 'population equivalent' of at least 25,000. Population equivalent is a measure of the amount of sewage treated, both domestic and industrial, expressed in terms of the number of domestic customers required to produce a similar volume.

The model takes into account the sewage load reaching the treatment works; the type of treatment in place (e.g. activated sludge increases power costs); and the quality of the discharged effluent required to meet environmental standards. The model exhibits considerable economies of scale in the treatment of sewage at the level of individual works.

- Small sewage treatment works model

This model uses average unit costs across England and Wales. This 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 scale of the works – there are significant economies of scale – and the type of treatment process employed. An extra Band 0 was added to the matrix to take account of the very small works found in some regions of Scotland.

- Sludge treatment and disposal model

This model compares the costs of sludge treatment and disposal to the volume treated and the methods of disposal available. The model uses average unit costs across England and Wales. The unit cost approach is again a necessary simplification given the large number of sludge treatment and disposal facilities.

- Business activities model

This model uses an average unit cost per billed property across England and Wales. There are too few sewerage

companies of sufficiently different size to allow economies of scale to be estimated. Sewage is treated by the ten large privatised companies in England and Wales.

Appendix 3

Comparison of Scottish Water standard costs and Ofwat benchmarks

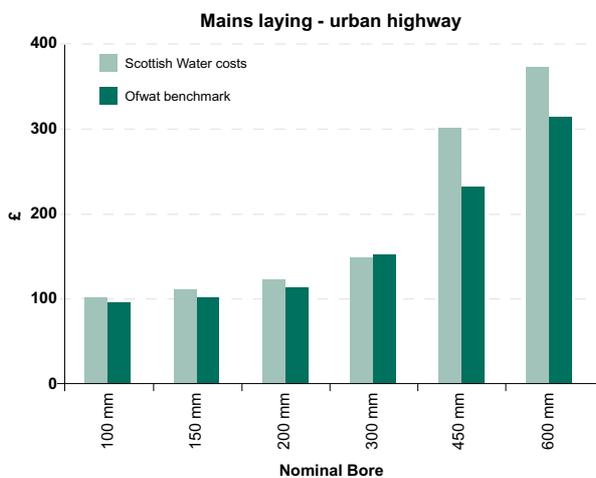
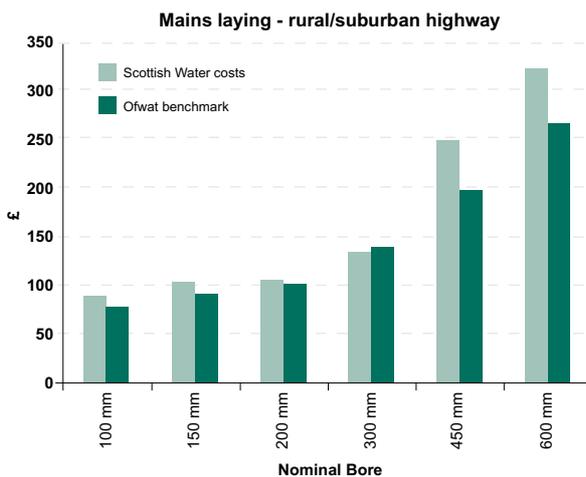
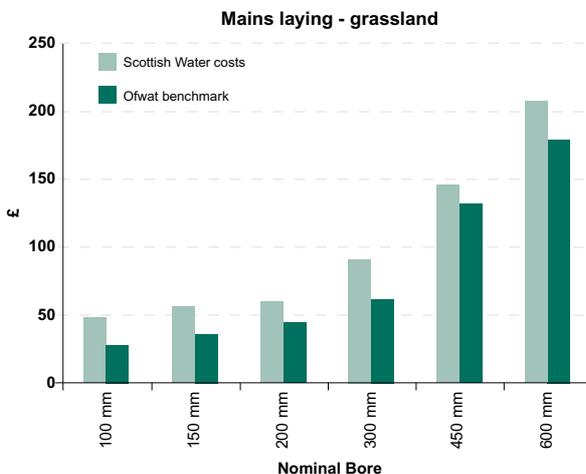
In March 2003 the water and sewerage companies in England and Wales each submitted their cost base returns to Ofwat. These submissions are a key input to the periodic review 2004 process that Ofwat and the companies are currently engaged in. The standard costs included within each company's submission are important factors in deriving the capital expenditure efficiency targets that Ofwat will set each company for the period April 2005 to March 2010. These efficiency targets will feed into the price caps that Ofwat sets each company. The price caps will be published by Ofwat in November 2004.

It is likely that the standard costs that were submitted by the companies in March 2003 will change as the companies gain more clarity on their likely investment programmes for 2005-10. Ofwat expected some companies to update their standard costs in their draft business plan submissions in August 2003 and intends to publish updated cost base information in December 2003. The companies have a final opportunity to update their cost base submissions in April 2004 as part of their final business plan submissions.

Experience at the 1999 periodic review suggests that a number of companies will take the opportunity to revise their submissions. It is likely that the standard costs that have been reported will fall. As such, the benchmarks that have been published by Ofwat and that are used in the graphs that follow are likely to fall in the next few months. Our office will continue to compare the standard costs submitted by Scottish Water with the latest benchmarks published by Ofwat.

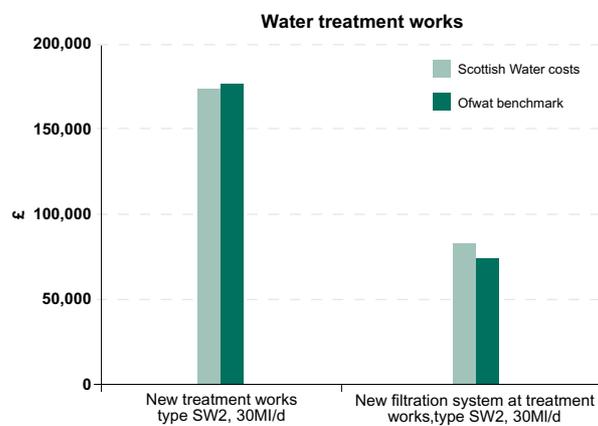
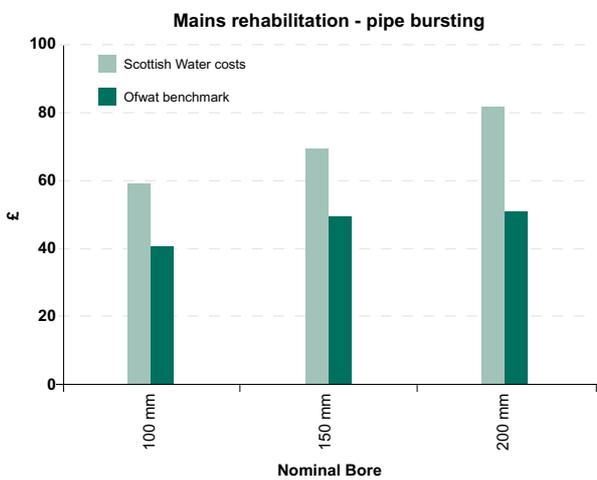
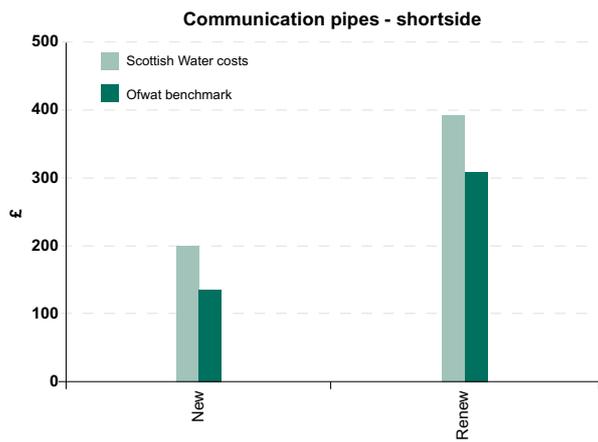
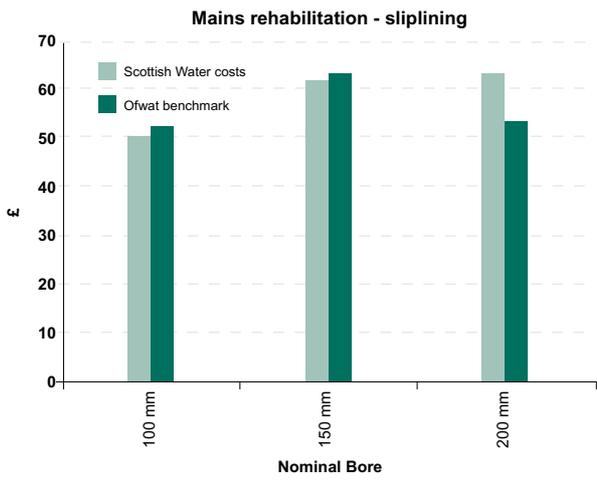
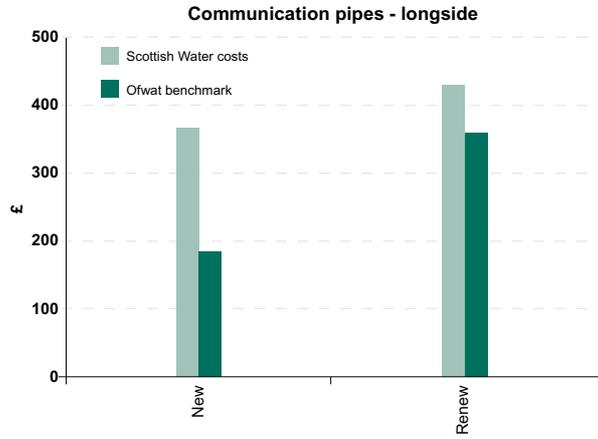
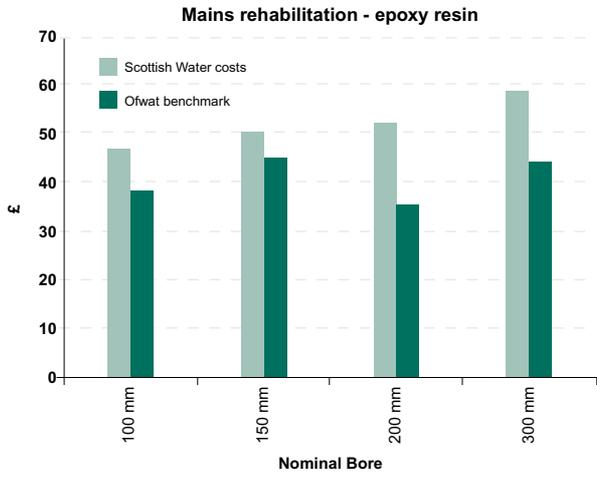
The following graphs compare the benchmark costs derived by Ofwat and published in June 2003³⁸ with the standard costs submitted by Scottish Water as part of its 2003 June Return. For the purposes of comparison, all of the costs have been indexed to 2002-03 prices using COPI³⁹.

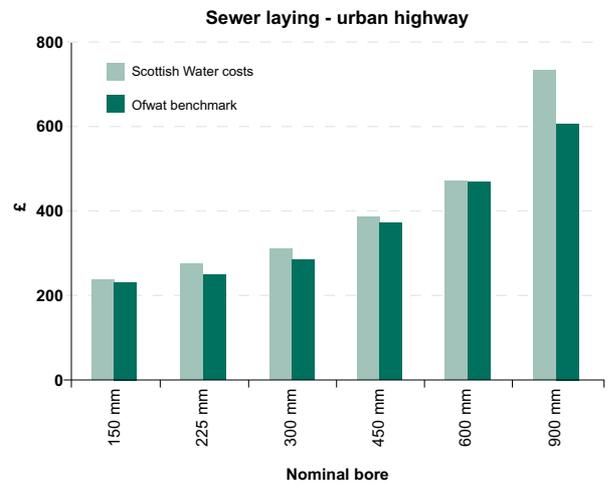
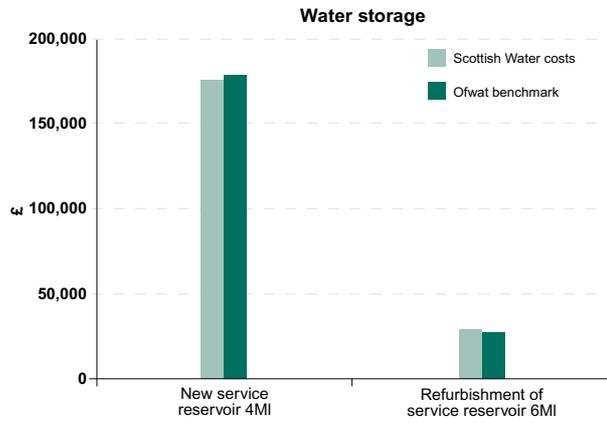
Water service



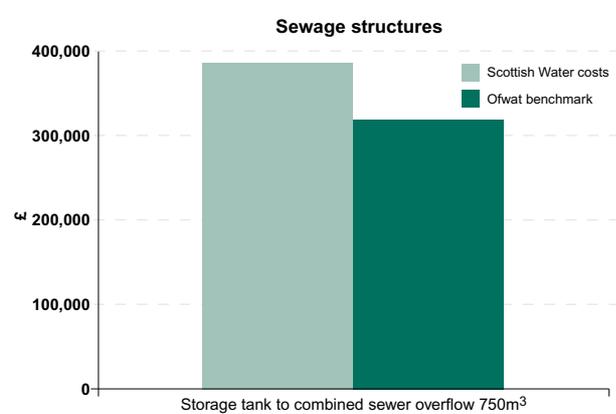
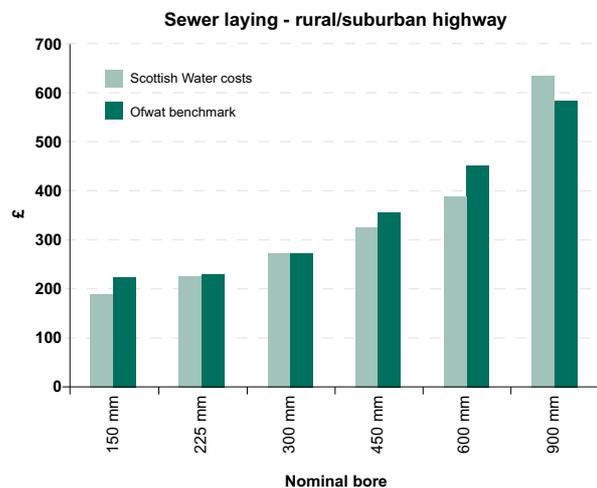
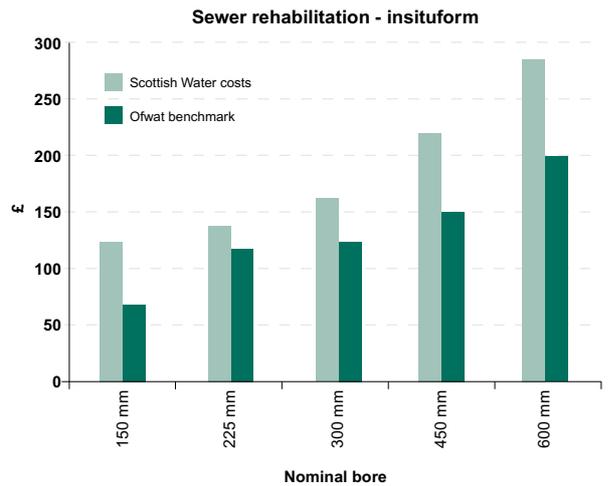
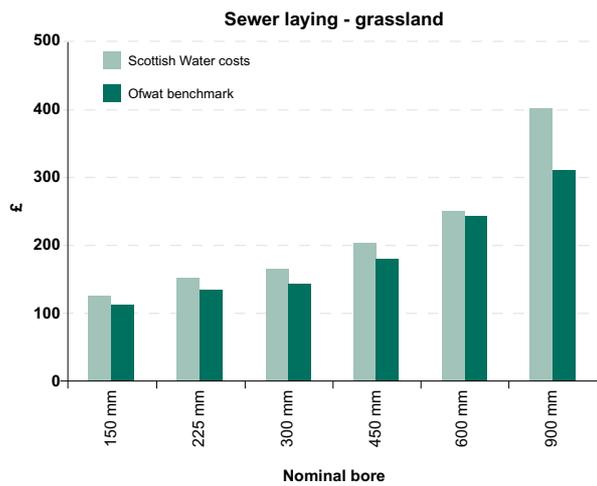
³⁸ Office of Water Services, *Capital works unit costs in the water industry: Feedback on our analysis of the March 2003 water company cost base submissions*.

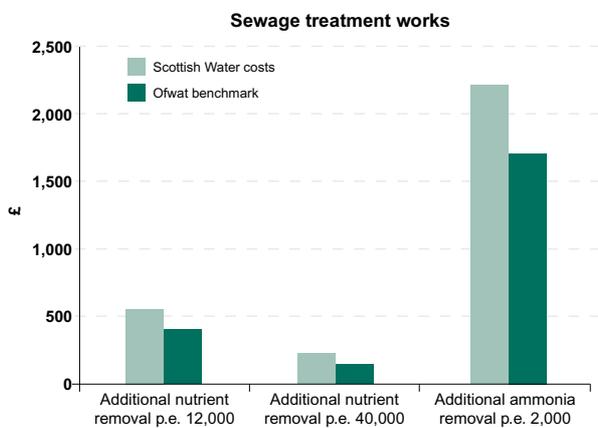
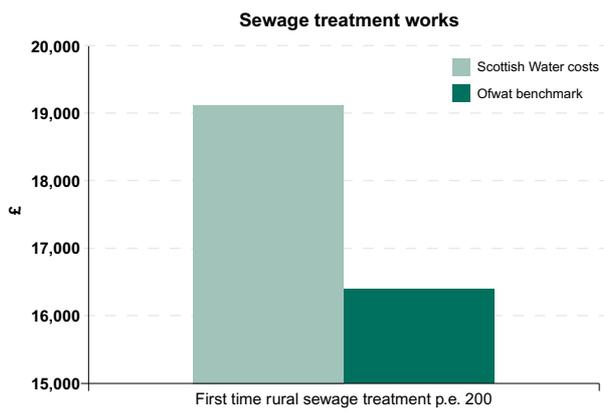
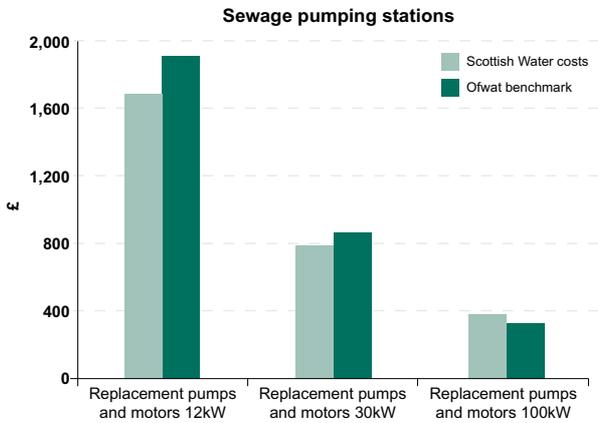
³⁹ COPI is the Construction Output Price Index and is the index commonly used by regulators with respect to capital costs and investment.





Sewerage service





Appendix 4

Defining operating and capital expenditure

Sources of information

Our evaluation of the relative efficiency of Scottish Water is based on information provided by the corporation itself. The primary source of that information is the annual June Return. The Return is designed to capture information on all aspects of Scottish Water's business, including customer numbers and characteristics, assets and costs. In addition, Scottish Water is required to provide comment as to the source and accuracy of the information it submits. However, unlike the information submissions made by the English and Welsh companies to Ofwat, Scottish Water's Return is not yet subject to independent external scrutiny prior to submission.

Definition of operating expenditure

Components of operating expenditure

Operating expenditure comprises day-to-day running costs, as opposed to capital investment or financing costs. Operating expenditure therefore includes employment costs, electricity, materials, hired and contracted costs, local authority rates, insurance, software licences, and vehicle running costs. Bad debt is also regarded as an operating cost.

The operating costs incurred by the water and sewerage service undertakers in the UK are collected using a consistent breakdown of that expenditure. This facilitates benchmarking, and allows us to analyse costs without large adjustments. The June Return from Scottish Water allows us to analyse operating costs by both function and activity. The analysis of expenditure by function provides information on what it costs to provide a particular service. The analysis by activity shows the cost of each activity comprising a service. The breakdown by function is shown below:

- Water service: Water resources and treatment
 Water distribution
 Business activities

- Sewerage service: Sewer network
 Sewage treatment
 Sludge treatment and disposal
 Business activities

The breakdown by activity is as follows:

- Direct costs: Employment
 Power
 Hired/contracted services
 Agencies
 Materials and consumables
 Charges levied by environment
 regulator
 Bulk water imports
 Other
- General and support
- Business expenditure: Customer services
 Scientific services
 Local authority rates
 Doubtful debts
 Exceptional items
 Third party services
 Other

The Return defines these functions and activities clearly and uses the same definitions as Ofwat.

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.

Benchmarking analysis should be both accurate and fair. Assessment of Scottish Water's relative efficiency in operating expenditure therefore takes into account reported one-off costs, both their own and those reported by companies in England and Wales.

Base service operating expenditure

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

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

We have endeavoured to 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.

As a consequence, Scottish Water reports two operating expenditure figures; one for base service and one for total operating expenditure⁴⁰. Base service expenditure comprises the cost that is incurred simply to maintain a constant level of service from some agreed starting point. Total operating cost includes the base service and net additional running costs associated with improvements. It is possible to compare the underlying trends in operating expenditure more fairly if new net additional costs are stripped out.

Factors that influence operating expenditure

There are several important factors, other than management efficiency and employee productivity, that can influence operating expenditure in the water industry. They include:

- difficulty of operating environment (population distribution and density, topography and terrain, water availability and types of source, coastal or inland character, etc);
- customer mix (domestic, non-domestic, metered, unmeasured, large/small industrial user);

- customer requirements (resolving complaints, etc);
- environmental requirements (leakage levels and targets, restrictions on water resource use, sewage effluent standards, etc);
- nature of the assets operated and maintained (size, mix, performance);
- volumes (water consumption, peak use, sewage loads);
- regional variations in charges for local authority rates, water abstraction, sewage discharges;
- regional variations in services such as mains diversions and sewer diversions ('third party' services);
- regional variations in market rates for salaries, electricity or other costs.

These cost drivers can be regarded as outwith significant management control in the short term, for an efficiently run business. However, poor management can mean that charges incurred for local authority rates or electricity are higher than they need to be, or that insufficient attention is paid by managers to limiting the impact on costs of their operating environment.

The approach to benchmarking is therefore to determine, by detailed analysis of the available information, the way in which the factors listed above influence actual operating expenditure for Scottish Water. Our econometric models estimate the effect on costs of 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 calculate a fair efficiency score for Scottish Water.

⁴⁰ The companies in England and Wales also report two operating expenditure figures.

Definition of capital expenditure

Capital expenditure can essentially be divided into two categories – capital maintenance and capital enhancement. The Quality and Standards 2 process that determined the investment programmes for Scottish Water for the period 2002-06 included both of these categories of capital expenditure. It is important to note that the expenditure that is being benchmarked is actual cash expenditure, not depreciation as charged in the accounts. The efficiency targets that were set at the 2001 Review for capital expenditure apply to the total investment programme.

Capital maintenance

Scottish Water incurs capital maintenance costs for maintaining current levels of serviceability of their assets. For reporting purposes, the corporation breaks down its costs in two complementary ways. These are by operational asset classification and by accounting asset classification.

The breakdown by operational asset is shown below:

- Water service:
 - Water resource facilities
 - Water treatment works
 - Water distribution mains
 - Service reservoirs and water towers
 - Pumping stations
 - Management and general
- Sewerage service:
 - Sewerage
 - Sea outfalls and headworks
 - Sewage treatment works
 - Sludge treatment works
 - Sludge disposal
 - In line pumping stations
 - Terminal pumping stations
 - Management and general

The breakdown by accounting asset is shown below:

- Infrastructure assets:
 - Underground systems
 - Impounding and raw storage reservoirs
 - Dams
 - Sludge pipelines and sea outfalls
- Non-infrastructure assets:
 - Operational assets
 - Intake works
 - Pumping stations
 - Treatment works
 - Boreholes
 - Operational land
 - Offices, depots and workshops
 - Residential properties directly connected to supplies
 - Land held for the purpose of protecting the wholesomeness of water supplies
 - Other tangible assets
 - Non-operational plant
 - Machinery
 - Vehicles
 - Surplus land

Capital enhancement

Scottish Water incurs capital enhancement costs for improving current levels of serviceability of its assets through building new assets such as sewage treatment works and water mains. For reporting purposes, companies break down their costs in two complementary ways, which are as shown above in the section on capital maintenance.

Water Industry Commissioner for Scotland
Ochil House Springkerse Business Park Stirling FK7 7XE
telephone: 01786 430200
facsimile: 01786 462018
email: enquiries@watercommissioner.co.uk
www.watercommissioner.co.uk

November 2003