Section 1
Introduction

Section 1: Chapter 1
Introduction: Background, aims and critical issues

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

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

a) Structure of the Review

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

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

This Review comprises eight sections.

i) Section 1 (Chapter 1)
This introduction covers a little of the history of how we got to this point and the benefits that would come from the creation of the proposed Scottish Water. A brief summary of the principal aims of this Review is provided, as is an outline of the critical issues, which the industry faces.

ii) Section 2 (Chapters 2-10)
This section is a detailed description of the methodology that I have employed in coming to my recommendations to Scottish Ministers. Some of the detailed quantitative analysis described in Chapters 7, 8 and 9 is complex and is not vital to understanding the implications of the efficiency targets for customers. I would recommend that these nine Chapters are used selectively and that the reader refer back to those elements of process, which are of interest, rather than read this whole Section from start to finish before progressing.

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

iii) Section 3 (Chapters 11-14)
This Section discusses competition in the broader utilities sector and the potential for competition in the water sector. The Section concludes that if the efficiency issues are tackled properly by management, competition will bring only benefits to customers. Chapter 14 highlights the importance of accounting separation of the retail activities from the network and treatment business and any other commercial activities. It discusses protection that would be provided to customers if this were implemented.

iv) Section 4 (Chapters 15-21)
This section covers cost and financing issues. It starts with an overview of the capital programme, which is the largest single element of cost. These chapters include the efficiency targets for both operational and capital spending (Chapters 18 & 19)

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

v) Section 5 (Chapters 22-25)

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

vi) Section 6 (Chapters 26 and 27)

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

vii) Section 7 (Chapters 28-39)

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

viii) Section 8 (Chapter 40)

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

b) Customer interest

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

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

The recommendations on revenue levels and service levels are based on extensive consultation and research undertaken by my office. The revenue caps are set after reviewing the operating, capital and financing costs of the water authorities. These are benchmarked against the best in the industry - after full and proper allowance has been made for any special factors present in Scotland. My analysis also takes account of the charges that will be faced by customers, and increases are phased to try to make any adjustment as affordable as possible. Service levels are set to reflect the aspirations of customers expressed to us in public meetings and to take full account of the quantitative analysis of my Water Panel[1] and the issues that arise from our handling of complaints.

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

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

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

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

c) Background

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

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

When local government was restructured into the smaller unitary authorities, three public corporations were created to provide water and sewerage services. Assets and staff previously employed by local authorities in water and sewerage departments transferred to the new public bodies on 1 April 1996 under the Local Government etc. (Scotland) Act 1994, and from that date the new water authorities assumed their statutory duties to provide these services. In order to achieve their potential, it was judged that the new authorities should be established to operate more like businesses, i.e. in a more commercial manner, than as providers of a service to the community.

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

- East of Scotland Water Authority, which serves the former Lothian, Borders, Fife, Central Regional Councils. The authority also took on responsibility for the Kinross area of Tayside and the services provided by the Central Scotland Water Development Board.

- North of Scotland Water Authority, which serves the former Highland, Grampian and Tayside Regions (excluding Kinross) and the Island Councils of Orkney, Shetland and the Western Isles.

- West of Scotland Water Authority, which serves the former Dumfries & Galloway and Strathclyde Regional Council Areas[2].

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

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

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

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

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

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

i) Interim Strategic Review of Charges

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

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

The interim Review was published on 26 January 2000 shortly before the Competition Act 1998 came into force on 1 March 2000. In that interim Review, I highlighted for the first time the very significant potential impact that competition could have on the industry. It was noted that it is in the interests of all customers that their water authority is able to respond effectively to competitive threats, in both the short and long term. This is because of the fixed cost nature and long-term investment horizon of the water industry.

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

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

ii) Ministerial response to the interim Strategic Review of Charges

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

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

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

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

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

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

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

iii) Follow-through on interim Review recommendations

This first full Strategic Review of Charges has drawn extensively on two of the initiatives proposed in the interim Review. Considerable effort has gone into establishing a regulatory reporting framework that allows for consistent comparisons to be drawn with England and Wales and, indeed, between the Scottish authorities. There has also been significant progress towards identifying the principles of best practice asset management and this has informed the capital efficiency process. These initiatives will continue to develop over the next few years and will be at the core of this office's attempts to promote the customer interest.

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

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

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

iv) Public response

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

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

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

The former was addressed in a consultation by the Scottish Executive in November 2000 and the introduction of a Statutory Instrument which came into force on 1 April 2001[4]. The latter could not be resolved without restructuring the industry. Sam Galbraith, MSP, the then Minister for the Environment, announced an intention to consult on a restructuring of the industry in his Evidence to the Transport and Environment Committee of the Scottish Parliament on 28 February 2001.

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

v) Views of the Transport and Environment Committee

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

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

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

vi) Creation of Scottish Water

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

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

- The most immediately obvious benefit to customers is that the new service provider would be able to offer a harmonised tariff to the domestic customer across Scotland, so customers with identical circumstances throughout Scotland will pay the same charges.

- There would also be considerable benefits of scale and scope, which result from the merger of the three authorities. The efficiency gains that would accrue to Scottish Water would mean that all customers in Scotland would be better off as a result of the merger. Customers in the North would benefit the most, but bills for all customers would be lower than they would otherwise have been[5].

- The third major benefit from the creation of Scottish Water would be the opportunity to shape a high quality

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

[5] The modelling assumptions used are outlined in Chapter 28.

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

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

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

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

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

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

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

d) Aims of this Review

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

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

This framework includes a balance between the need to close the efficiency gap that exists between the Scottish industry and its comparators, and the need to increase revenue. In order to achieve this, it is necessary to make a judgement as to how quickly efficiencies should be achieved, and what progress should be made towards adopting appropriate financial ratios and policies. The detail of the Review will explain the rationale for the various decisions that I have made.

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

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

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

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

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

The Review is comprised of a series of judgements as to the appropriate pace of transformation. Inevitably, in some cases I may unintentionally have favoured the customer at the expense of the management and in others I may have erred in favour of the management. My aim is to set targets that I believe should be achievable by good management. I want managers to succeed and believe that their success is very much in the interests of customers. It is not therefore appropriate to look at the strategic framework provided other than as a whole. It is not an ‘a la carte’ menu from which the attractive elements of the strategy can be selected.

e) Context and critical issues

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

i) Environmental sustainability

The Scottish water industry successfully delivers a water and sewerage service to customers throughout the country. Relatively few customers experience problems[6] and most problems are resolved quite effectively. The focus of water authority managements, however, has been on service delivery. Maintenance and investment has been a reactive response to system failures or the implementation of new environmental standards. From a customer perspective it would be better if the water authorities managed their assets in a more pro-active way so as to deliver an effective service both in the present and the future. Their reactive approach was the inevitable result of the annual funding cycle that characterised the industry. Effective asset management requires long-term visibility of investment funding and proper account to be taken of the comparatively long life of water and sewerage assets.

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

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

[6] The Water Panel, December 2000 and May 2001.

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

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

Inherited underspend

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

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

Funding investment

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

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

Another way of looking at this is to say that those, in any one year, who receive the new water main are borrowing from their fellow customers the excess of their contributions through charges prior to replacement of the main. In other words, the customer who receives a new main to serve their property before they begin to pay for the water service borrows the entire amount from fellow customers. The customer who receives a new main half way through their adult life will borrow approximately half the cost of the main from other customers, the rest being funded by contributions already made. Customers promise to continue to pay charges even after replacement of the main, in settlement of their debt (to fellow customers), and these contributions allow each year for others to benefit from the refurbishment of the main that services their property. If the average rate of deterioration of the water main were regarded as broadly similar, each householder would receive the same average service over any period of 70-80 years.

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

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

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

Impact on revenue and customers

The impact of increasing the level of investment will be to deliver a better maintained and sustainable system. There will be fewer burst water mains and better, lower cost solutions to the ongoing investment needs of the industry. There will also be improvements to the environment (e.g. by continuing to improve beaches) and to continue to improve the already very high safety of our water supply (e.g. by continuing to reduce the concentration of lead in the water supply). The extra expense incurred in delivering these improvements will, however, have to be met by customers and will require more revenue to be raised and more debt (to finance the new improvements) to be incurred.

ii) Financial sustainability

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

Need for efficiency

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

Every pound that is spent by a water authority ought to be spent as efficiently as possible and with the goal of ensuring a sustainable industry. The customer interest is maximised by achieving this goal. In preparing for this Review, extensive effort has gone into examining all the costs of each water authority and of the proposed merged authority, Scottish Water, to ascertain what savings may be available. The simple comparison shown in Figure 1.1 highlights the clear scope for efficiency that exists.

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

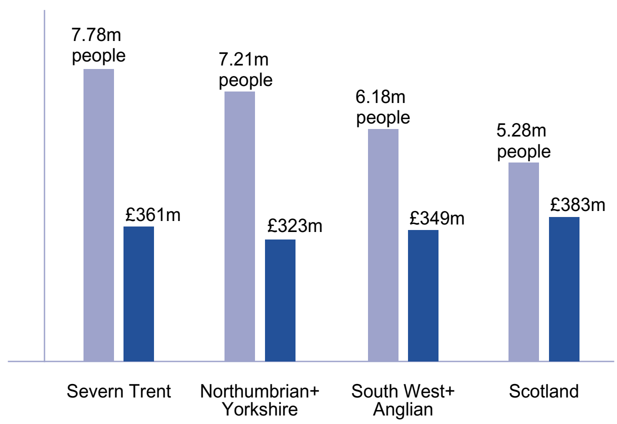
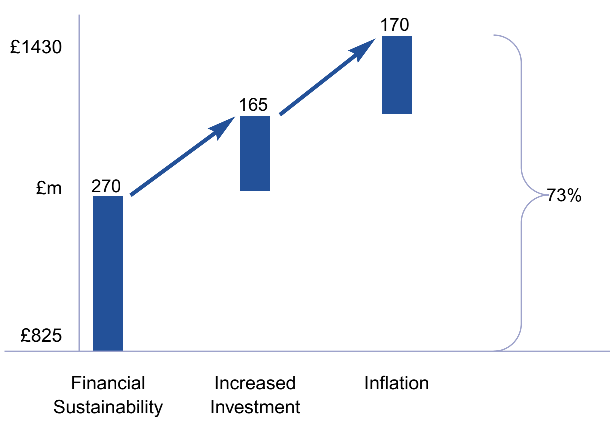


Figure 1.2 outlines the impact on the revenue required by the single water authority, Scottish Water, if no efficiencies were achieved. Revenue would have to increase by some 70+% in nominal terms for outgoings and expenditure to be broadly in balance by 2005-06. Revenue would need to increase for three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

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

Figure 1.2: Impact on revenue without efficiencies



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

Paying a fair share

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

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

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

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

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

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

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

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

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

The cost of water and sewerage services is largely incurred for providing the infrastructure required to supply the service, rather than relating to the amount of water consumed or quantity of sewage disposed of. The infrastructure, which is made available such that a service is available whenever it is required, does deteriorate (largely irrespective of use) and therefore the owner of the connected property should make an appropriate contribution to the service that is provided - whether or not they choose to make use of it.

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

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

Impact on revenue and customers

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

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

iii) Survival of the public sector model

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

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

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

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

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

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

Local accountability

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

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

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

Impact on revenue and customers

It is important that all stakeholders recognise the changes in the operating environment faced by the water industry in Scotland. If the public sector model is to survive, it is vital that it is given a fair chance of success and is not hindered by unreasonable criticism or restrictions on what it can or cannot do. It is also vital that there is the best possible quality of management that is properly incentivised and, in parallel, held fully to account for its performance. The public sector model, which benefits from a lower cost of capital, can result in lower bills to customers. If the governance structures are set up to encourage and applaud success and to hold the management firmly to account for failures to deliver - then the customer will be a clear beneficiary.

iv) Competition and choice

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

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

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

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

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

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

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

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

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

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

Impact on revenue and customers

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

v) Comparison with England and Wales

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

The English and Welsh privatised companies have been forced by regulators to improve significantly their environmental compliance and public health performance, at the same time as there has been pressure to improve customer service and to generate efficiencies. There has been a considerable improvement in the efficiency and levels of customer service provided by the privatised companies in England over the past decade. Efficiency in operating costs will approach 50% by 2005 and service levels are much better. At the same time, water quality compliance has improved significantly (from 99.00% to 99.83%) and leakage has been reduced from 30% to 22%. This regulatory regime has become more and more demanding, and this has resulted in the privatised companies looking either to restructure or to target non-regulated opportunities to improve returns for shareholders.

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

Impact on revenue and customers

Inevitably, there will be comparisons between the levels of charges in England and Wales and those in Scotland. In the past, too much emphasis was placed by the Scottish water authorities on having the lowest domestic charges in the UK and too little thought was given to the prospects for prices once the authorities began to tackle their environmental compliance targets. The result of this Review is that Scottish domestic charges will not be significantly in excess of the average charge in England by 2005-06[8].

vi) Improvements in customer service

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

Customer service may not be as high up the immediate list of priorities as minimising prices, but it may be almost as important in maintaining revenue for the retail service. Switching a service provider is often the result of an unsatisfactory customer service experience rather than the availability of a lower bill. In many cases the lower bill would appear[9] to be a

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

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

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

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

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

Impact on revenue and customers

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