

Executive Summary

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a) Introduction

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

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

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

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

b) Advice to Minister for Environment and Rural Development

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

“i) Revenue cap for the three Scottish water authorities

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

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

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

Table 1: Revenue cap for the three Scottish water authorities

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

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

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

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

iii) Harmonisation of charges

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

iv) Cost reflective tariffs

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

c) Key recommendations

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

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

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

d) Notes to the advice and recommendations

The Minister is invited to note that:

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

Table 3: Revised public expenditure split

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

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

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

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

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

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

Table 5: Resulting Band D charge

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

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

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

Table 7: Resulting Band D charge²

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

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

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

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

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

Table 9: Current public expenditure split

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

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

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

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

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

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

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

Table 11: Resulting Band D charge

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

Table 12: Operating cost efficiency targets

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

Table 13: Capital expenditure efficiency targets

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

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

e) Key messages

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

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

A sustainable industry will require:

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

My Review addresses all of these issues.

i) Revenue

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

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

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

ii) Efficiency

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

iii) Customer services

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

iv) Harmonised and broadly cost-reflective tariffs

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

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

v) Regulation and financial control

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

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

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

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

f) Background

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

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

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

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

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

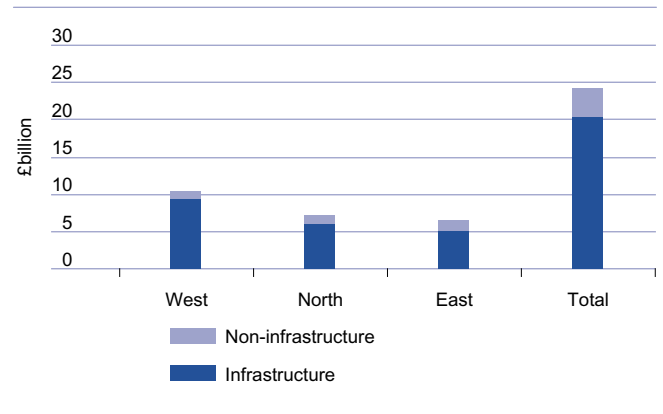
There is a clear consensus amongst stakeholders that water should remain in the public sector. I believe that Scottish Water represents the best chance to ensure that happens, because of the benefits that will accrue to customers from the merger.

g) Investment

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

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

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



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

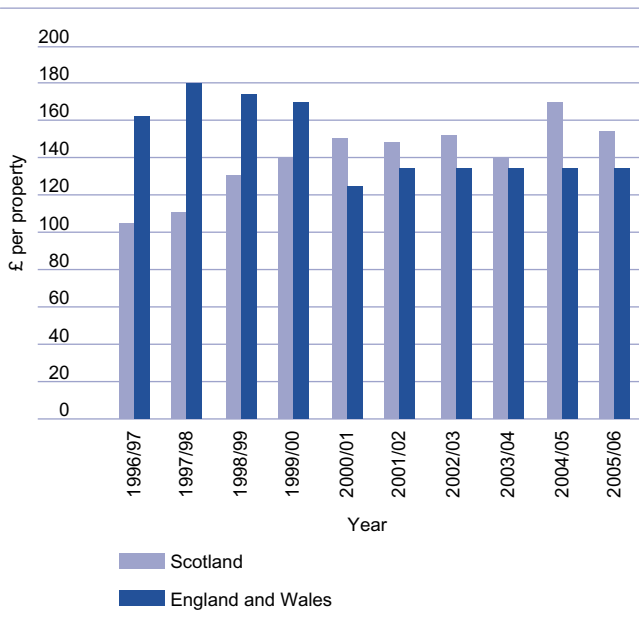
A comparison with the levels of investment in England and Wales clearly shows the extent of this under-investment. It is also important to note that investment per property is typically higher in more rural areas, and therefore levels of investment in Scotland should be on balance higher than in England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

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

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

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

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



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

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

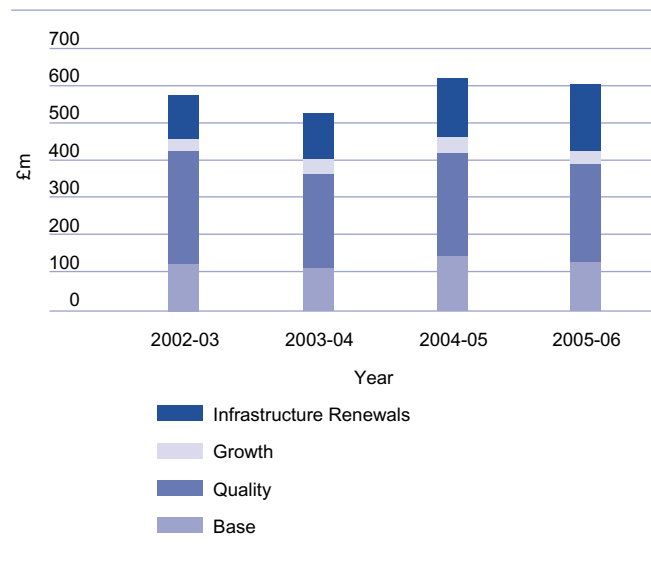
This investment is equivalent to around £1,000 for each customer, over the four years.

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

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

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

Figure 3: Capital investment by purpose category 2002-06



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

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

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

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

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

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

h) Revenue issues

i) Competition

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

ii) Harmonisation of charges

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

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

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

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

Table 16: Impact of harmonisation

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

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

iii) New business

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

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

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

i) The broader utilities market

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

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

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

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

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

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

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

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

The issue was 70% over-subscribed.

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

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

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

i) Focus on costs

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

ii) Focus on core activities

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

iii) Incentive to management

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

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

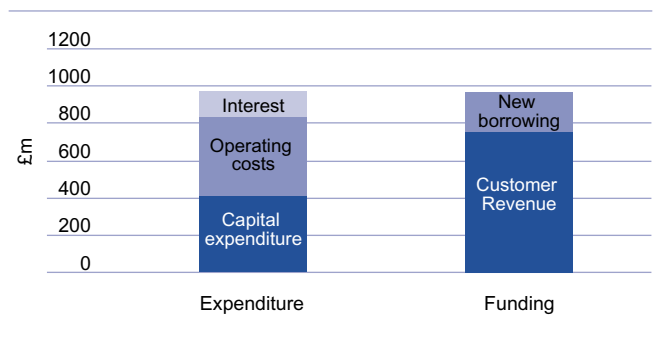
if management meets the targets set in this Review, it may be possible to talk about real reductions in the next regulatory period. It is certainly in the customer's interest that proper incentives are available at all levels within the proposed Scottish Water, or the existing three authorities, in order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

j) Cost issues

The charges paid by customers in the public sector model are a direct function of the efficiency of the water industry in Scotland. Unlike in the private sector, there are no dividends for shareholders from any profit. Any surplus in Scotland can go wholly to financing investment and improving the service to customers. There are no trade-offs between the customer and the shareholder.

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

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



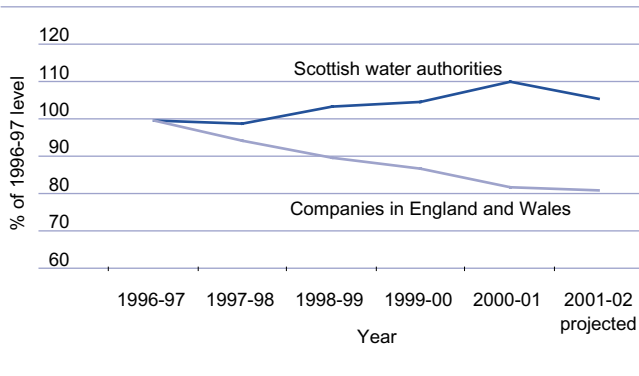
i) Operating cost efficiency

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

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

⁷ Based on 2000-01 water authority audited accounts.

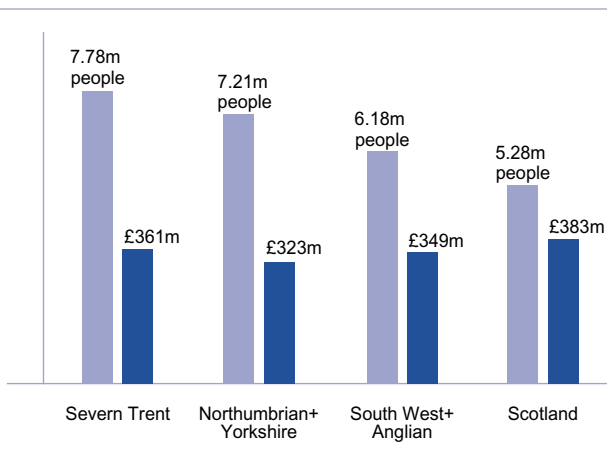
Figure 5: Trends in base operating costs since 1996-97⁸



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

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

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



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

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

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

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

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

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

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

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

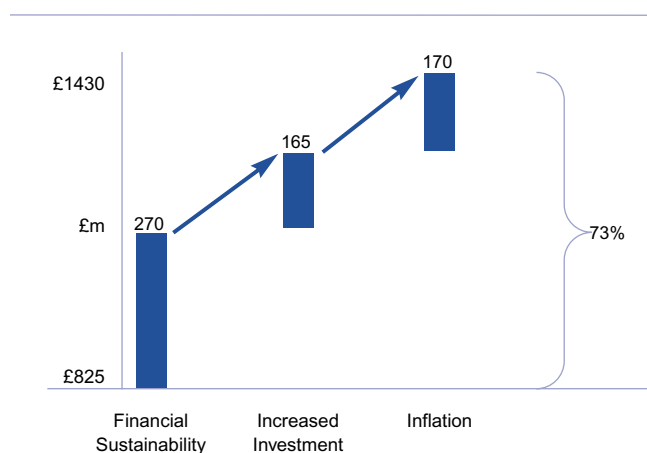
⁸ It is important to note that there have been significant improvements to drinking water quality and environmental compliance during the past five years.

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

Table 17: Controllable operating costs

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

Figure 7: Impact on revenue without efficiencies



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

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

Table 18: Operating efficiency targets

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

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

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

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

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

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

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

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

ii) Capital expenditure efficiency

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Tables 23 and Table 24 summarise the total assessed gap:

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

Table 23: Analysis of total assessed efficiency gap

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

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

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

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

¹⁰ Refer to Chapter 19, c, iii.

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

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

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

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

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

Table 25: 2005–06 Capital efficiency target

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

Adjustment to Quality and Standards investment levels

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

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

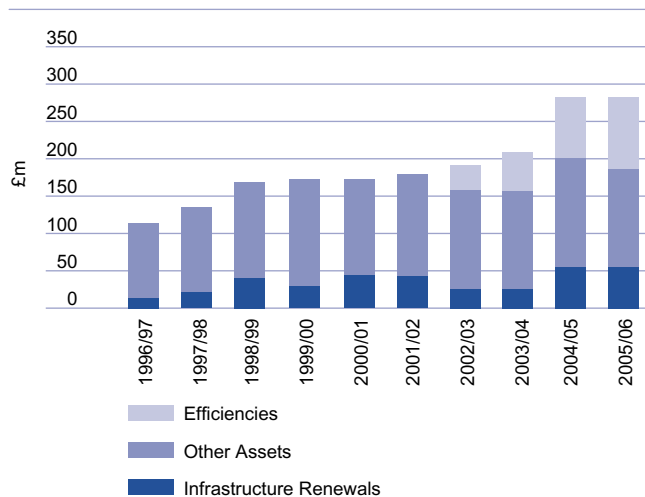


Figure 9: North of Scotland Water Authority post-efficiency investment profile

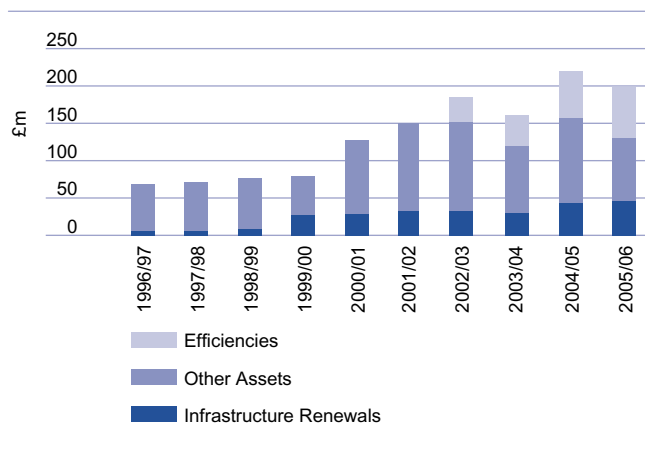
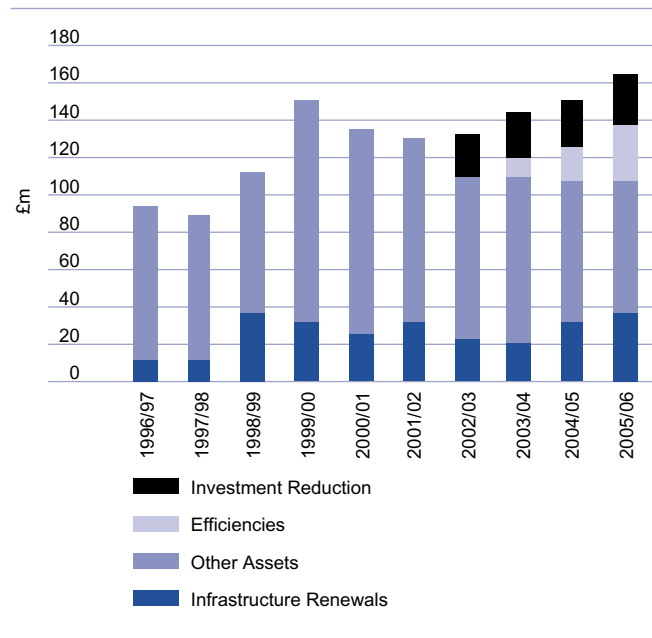


Figure 10: East of Scotland Water Authority post-efficiency investment profile



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

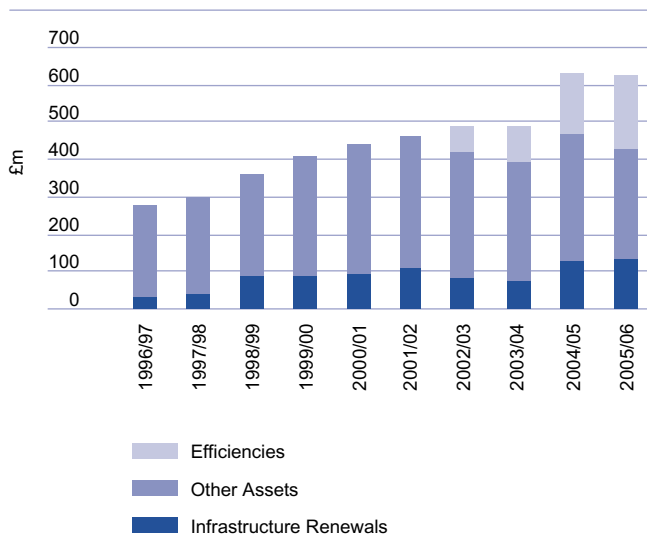
My targets for the East of Scotland Water Authority are slightly different. I have taken into account its voluntary reduction in its investment programme during the Quality and Standards process. The impact of this is illustrated by the investment reduction element in Figure 10. If I add back this voluntary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

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

iii) Potential for merger efficiencies

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

Figure 11: Scotland post-efficiency investment profile



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

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

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

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

Table 26: Potential merger efficiencies

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

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

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

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

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

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

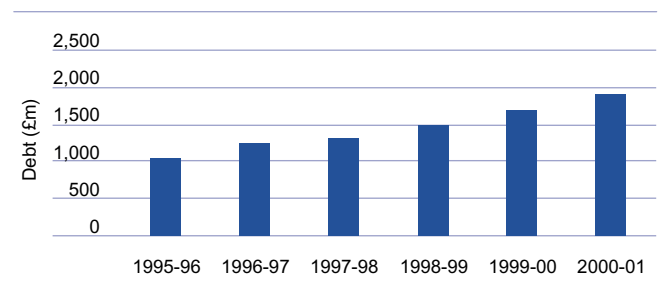
My analysis has therefore given me a range of potential savings from the merger of between £36.6 million and £52 million. I have asked the industry to deliver 80% of the lower number by 2005-06, i.e. £29.3 million.

iv) Debt

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

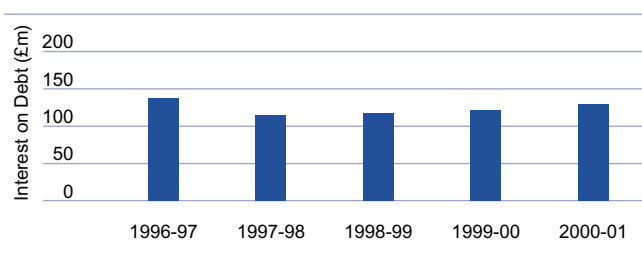
Debt has increased markedly in the last four years:

Figure 12: Scottish water authorities' debt



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

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

Figure 13: Interest payable by Scottish water authorities

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

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

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

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

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

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

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

v) 'Spend to Save'

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

Table 28: Spend to Save

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

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

vi) Public Private Partnerships

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

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

k) Customer issues

i) Consultation

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

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

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

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

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

ii) Domestic customer service

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

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

Current situation

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

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

These standards are as follows:

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

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

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

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

The guidelines that trigger a major incident are as follows:

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

Future priorities

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

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

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

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

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

iii) Non-domestic customer service

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

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

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

iv) Further improvement required

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

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

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

v) Bad debt and affordability

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

Table 29: Impact of bad debt on average domestic customer

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

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

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

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

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

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

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

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

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

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

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

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

vi) Reliefs

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

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

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

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

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

i) Issues for the Scottish Executive

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

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

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

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

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

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

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

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

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

The accurate allocation of costs is critical for two reasons:

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

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

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

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

m) Outlook for the next Review period

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

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

n) Public expenditure

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

Table 31: Annual limits on public expenditure

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

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

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

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

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

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

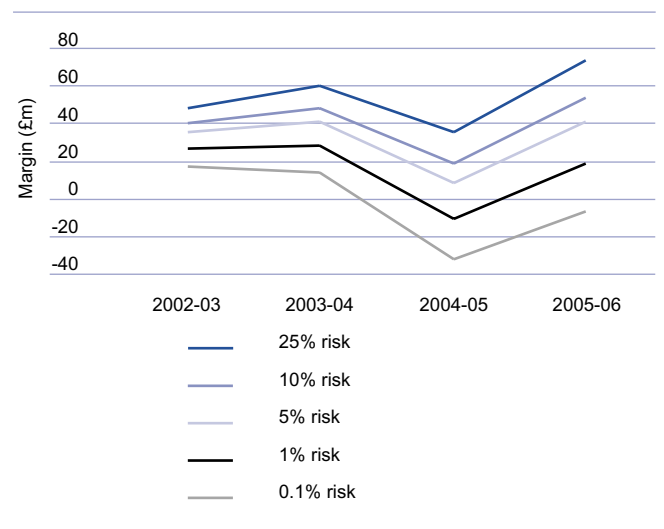
I used three different scenarios for the performance of the proposed Scottish Water. My pessimistic Scenario A describes a range of outcomes from achievement of my efficiency targets at best to a further worsening in relative efficiency.

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

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

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

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



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

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

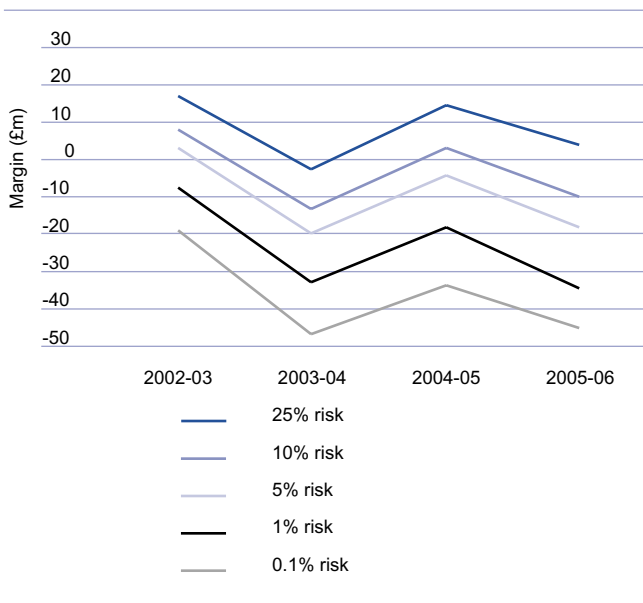


Figure 17: Minimum projected margin on public expenditure (RAB A) operating & capital cost efficiencies – dependent. North Scenario D

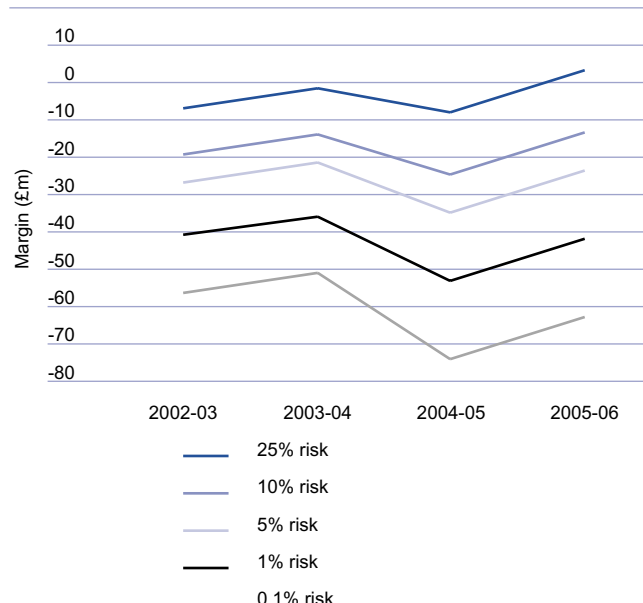


Figure 16: Minimum projected margin on public expenditure (RAB B) operating & capital cost efficiencies – dependent. East Scenario D

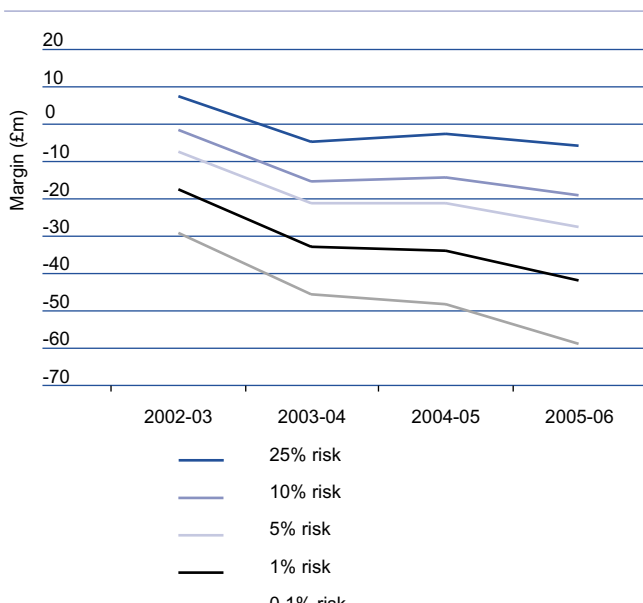


Figure 18: Minimum projected margin on public expenditure (RAB B) operating & capital cost efficiencies – dependent. North Scenario D

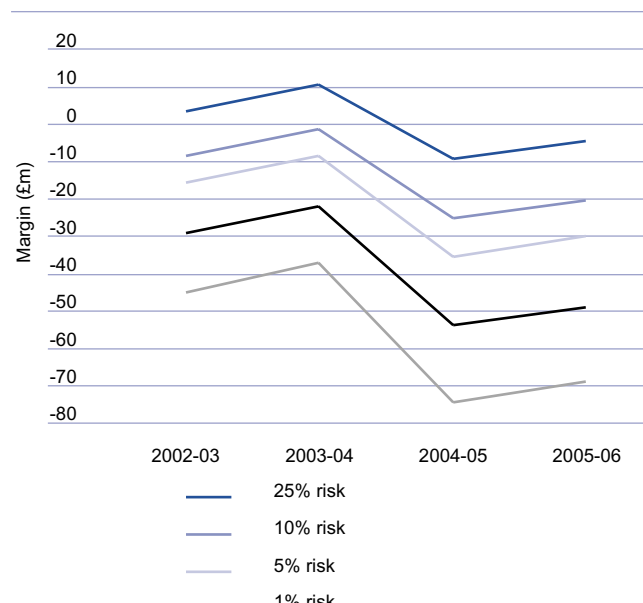


Figure 19: Minimum projected margin on public expenditure (RAB A) operating & capital cost efficiencies – dependent. West Scenario D

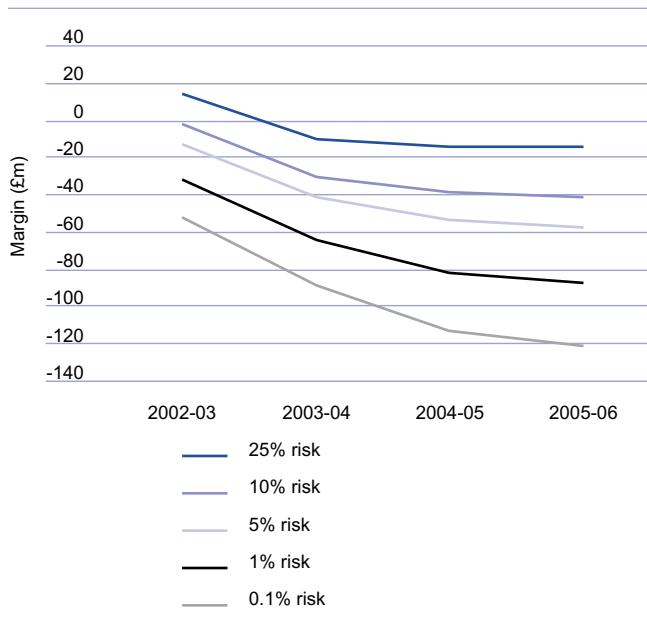
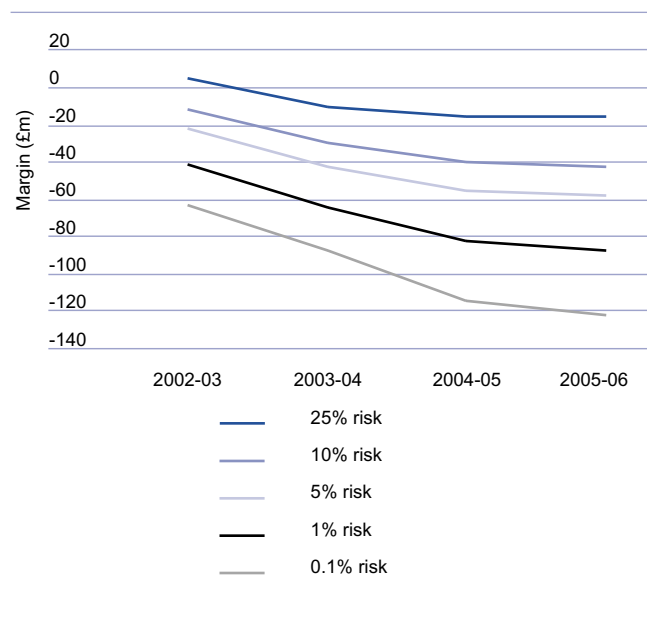


Figure 20: Minimum projected margin on public expenditure (RAB B) operating & capital cost efficiencies – dependent. West Scenario D



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

o) Conclusion

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

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

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

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