



# June Return

## Board Overview

June 2010

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# Severn Trent Water June Return 2010 Board Overview

## Executive Summary

Our aim is to be the best water and waste services company in the UK, providing best value for customers by achieving the highest customer service and environmental standards while at the same time offering our customers the lowest possible prices.

Over the five years to 2009/10 (the “AMP4” period) we have:

- Completed a £2.8bn investment programme.
- Achieved significant improvements in services during the period, including reduced sewer flooding and better customer service.
- Delivered almost all the required schemes to improve drinking water and sewage treatment.

We will be achieving further increases in service standards, whilst keeping prices down, during the next five-year period.

Our strategy is based on the eight Key Strategic Intentions (KSIs) set out in our Strategic Direction Statement. Our progress in making improvements on each of these KSIs in 2009/10 is set out in this Board Overview.

### **KSI 1 – Providing a continuous supply of quality water**

Ensuring a safe, reliable water supply is the top priority for our customers. We have been taking action to improve the reliability of our service and our performance showed improvement in a number of areas. Key aspects of our performance in 2009/10 are summarised below:

- We continued to achieve a high level of compliance with water quality standards.
- The capital expenditure programme to improve water treatment to ensure water standards are maintained at a high level in future was successfully completed – we have delivered almost all of the 40 schemes which were required in AMP4.
- As a result of a programme of improvements we achieved a significant reduction in the number of customers at risk of low water pressure – reduced from 4,147 customers to 424.
- We maintained stable serviceability, in terms of Ofwat’s measures of the capability of our assets to continue to deliver service.
- We continued to install more optional meters than assumed in the 2004 price review – 33% of households are now metered.
- Performance on interruptions to supply was unsatisfactory but we are taking action to improve performance.

### **KSI 2 – Dealing effectively with waste water**

Our customers should have confidence that we will take away their waste and treat it to the highest environmental standards before returning it to our region's rivers. Our long-term aim is to eliminate flooding of properties from sewers, except as a result of exceptionally high rainfall which exceeds the design standards for our system.

We achieved a high standard of performance in 2009/10, as summarised below:

- We have a consistently high level of compliance with sewage treatment standards, and a high level of performance was maintained in 2009/10.
- Almost all of the AMP4 environmental schemes have been delivered (400 out of 404 schemes).
- Serviceability of our waste water assets remained stable, in terms of Ofwat's measures of the capability of our assets to continue to deliver service.
- There were significantly fewer sewer flooding incidents. A relatively low number of storms in the year contributed to this but our work to address flooding problems is also having an impact.
- We have taken action to reduce the number of pollution incidents. The reported number shows a small increase, from 313 to 322, but this has been affected by changes in the Environment Agency's approach to reporting.

### **KSI 3 – Responding to customers' needs**

Our objectives for customer service are to:

- Reduce failures, such as sending customers incorrect bills or interruptions to supply, so reducing the need for customers to contact us.
- Offer a high speed of response and standard of service to those customers who do need to contact us, including resolving as many customer needs at the first point of contact as possible.

We continued to show a high standard of performance on all measures during the year – there has been a substantial improvement during the AMP4 period. This reflects earlier investment in our call handling service and implementation of new processes and controls. The most significant improvement was in customer satisfaction with call handling, with the rating increased to 4.57 (out of a maximum of 5), our highest ever score.

Take-up of the WaterSure tariff has been steadily increasing as a result of promotion of the scheme and is now benefiting nearly 4,000 customers. It is available to metered customers who receive certain state benefits, and have a medical condition involving additional water use or have three or more children. This tariff caps charges at the level of the average metered bill.

### **KSI 4 – Minimising our carbon footprint**

Last year we reduced our greenhouse gas emissions by 4.3% (after adjustment for changes in measurement methodology) and over the last two years an 8% reduction has been achieved. Nearly half of this year's reduction has come from greater energy efficiency, but there have also been reductions in other emissions due to reductions in

areas including sludge treatment and transport, and increased production and use of biogas in our CHP plant.

This year we increased renewable energy generation in the regulated business to 183 GWh (increased from 163 GWh in 2008/09), amounting to over 20% of total energy consumption.

Our aim is to deliver a leading position in sustainable operations, thereby minimising our carbon footprint. However, energy-intensive treatment standards are making it hard to reduce carbon emissions. Our recent report “Changing Course – Delivering a sustainable future for the water industry in England and Wales” discusses why we believe that without significant changes to the policy and regulatory framework the sector will not be able to reduce its carbon impact.

### **KSI 5 – Lowest possible charges**

We have begun implementing our strategy for delivering efficiency in the next five years. Our overall objective is to deliver better value for money for our customers. Keeping costs down is enabling us to have the lowest bills of any water and sewerage company during the AMP5 period (2010/11 to 2014/15).

As a result of efficiency improvements we are delivering, operating costs in 2009/10 (excluding exceptional costs) were 3% below 2004 Determination levels.

We have been delivering efficiency savings of around 6% on the capital expenditure assumed in the 2004 Final Determination and have been re-investing savings into a number of projects which will reduce operating costs including renewable energy generation, the new Severn Trent Centre in Coventry, and a new IT system. Our focus is on delivering sustainable efficiencies, lowering the cost of our operations and therefore providing value for our customers.

Our strategy for the capital programme is designed to build on the good practices, processes and expertise within our supply chain. We want to achieve greater levels of efficiency through innovation and higher levels of partnership. We will maintain overall responsibility for managing and delivering the capital programme and its associated projects. Detailed design of the preferred solution shall rest with the contractor. However, a collaborative approach with the contractor will ensure that aspects such as the ability to operate and maintain the assets are duly considered.

We will be reducing operating costs through opportunities which we have identified to reduce the number of people required in some central support functions. We are aiming to reduce staff numbers in these functions by up to 250 people. We are ensuring that the reduced staff numbers do not adversely affect our ability to deliver services.

### **KSI 6 – Having the right skills to deliver**

Based on management techniques used widely in manufacturing but relatively uncommon in our own industry, we launched our Safer Better Faster (SBF) process improvement programme three years ago. The programme develops managers and front line employees and enables them to drive continuous improvement in processes and performance. This is becoming the way we work on a day to day basis.

Over the last five years our Health & Safety performance has improved significantly, with rates of occupational ill health and reportable incidents reducing. Health & Safety is one

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of our key performance indicators, with a 15% reduction on the target year on year to reach our aim of zero lost time incidents. In 2009/10 we improved our lost time incidents by 16% on the previous year, beating our target.

#### **KSI 7 – Maintaining investor confidence**

The returns earned in 2009/10 were slightly above the level assumed in Ofwat's 2004 Determination. For the AMP4 five-year period as a whole, returns were slightly (0.2% post-tax) below Determination levels, as a result of rebates paid to customers. Operating costs were higher than in the Determination, as a result of higher energy prices but this was offset by tax payments being lower.

In January 2010, Severn Trent Plc announced that, given the impact of the reduction in Ofwat's allowed weighted average cost of capital to 4.5% real, an opening adjustment to the level of dividend payment would be necessary by Severn Trent Plc in order to maintain an appropriate and sustainable level of shareholder return.

Taking into account Ofwat's price reductions and updated RPI assumptions, and the scope for future efficiency savings, Severn Trent Plc decided to rebase the first year dividend for the start of the AMP5 period to a level around 10% below the full year 2009/10 dividend. The policy for subsequent years is for growth in the dividend from that new base, as performance improves, to deliver both progressive and sustainable returns to shareholders.

#### **KSI 8 – Promoting effective regulation**

We believe now is a critical time for the future direction of the industry. We have published our 'Changing Course' document, which seeks to drive change and secure a sustainable future for the water industry in England and Wales. We propose changes to the policy regime and the regulatory framework which we consider will ensure that the sector is financeable; customers receive the lowest possible charges; and help the UK meet its carbon emission targets.

We have continued to promote development of competition. 'Changing Course' proposes water trading as a way for companies to optimise the use of resources nationally, and offers the potential to defer regionally focussed capital-intensive solutions. We will continue to provide suggestions on development of competition and work with regulators and Government to achieve an efficient and viable competitive regime.

## Chapter 1

# Key outputs and service delivery

This section sets out our service performance, progress on delivery of required outputs, and initiatives to improve health and safety performance.

Our aim is to be the best water and waste services company, providing best value for customers by achieving the highest customer service and environmental standards while at the same time offering our customers the lowest possible prices. Our strategy to achieve this is based on eight Key Strategic Intentions (KSIs). Our progress in making improvements on each of these KSIs in 2009/10 is set out in this Board Overview.

The eight KSIs are:

KSI 1 – Providing a continuous supply of quality water

KSI 2 – Dealing effectively with waste water

KSI 3 – Responding to customers' needs

KSI 4 – Minimising our carbon footprint

KSI 5 – Having the lowest possible charges

KSI 6 – Having the right skills to deliver

KSI 7 – Maintaining investor confidence

KSI 8 – Promoting an effective regulatory regime

We have set 20 Key Performance Indicators (KPIs) to measure our performance by benchmarking against comparable water companies and other companies with similar characteristics in other sectors.

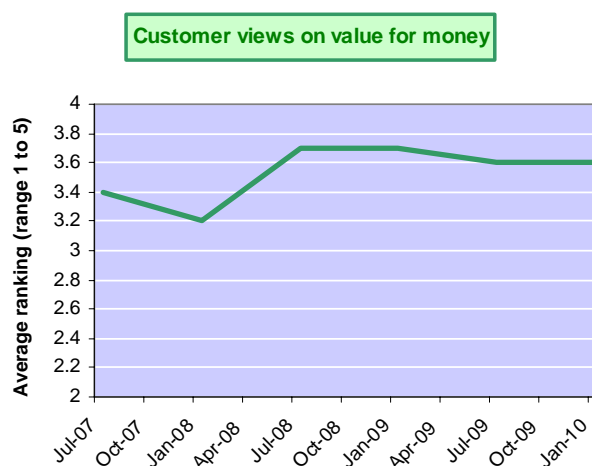
Over the last five years we have achieved continuing improvements in service and efficiency. Standards rose further in 2009/10.

We have improved most areas of service and delivered almost all the required schemes to improve drinking water and sewage treatment. We have plans in place to achieve further efficiency improvements and increases in service standards in the next five-year period.

### 1.1 Customer perception survey

We carry out customer satisfaction research every six months. Latest findings from the research show a continuing high level of satisfaction with water services:

- A large majority of customers (89%) are either satisfied or very satisfied with water services provided by Severn Trent Water.
- 76% of customers are either satisfied or very satisfied with waste water services.



- Value for money ratings have remained high, as shown in the graph on the right and only 15% of customers considered bills not to be affordable.

General satisfaction with services is also reflected in a lower number of complaints received in the year and improved customer satisfaction with telephone call handling.

## KSI 1 Providing a continuous supply of quality water

Each of the main aspects of providing a continuous supply of quality water are considered below:

- Ensuring a continuous supply of water.
- Providing safe, acceptable drinking water.
- Having enough water available to meet demand.
- Ensuring water is at an adequate pressure.

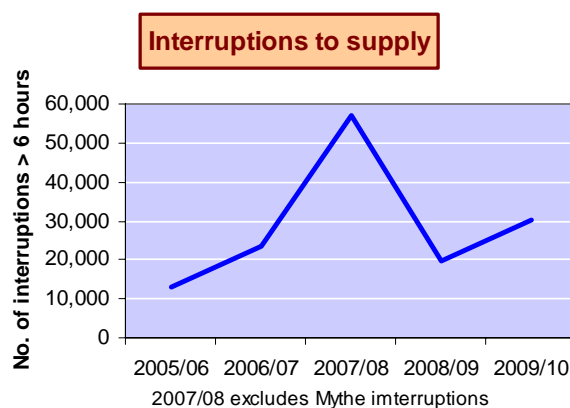
### 1.2 Ensuring a continuous supply of water

#### Reducing interruptions to supply

The number of interruptions to supply increased during the year. We have been making operational and organisational changes to reduce the number of interruptions but our changes have not yet achieved this objective. 30,074 properties experienced an interruption of over 6 hours, with one significant incident accounting for over a quarter of the total.

Actions taken during the year to reduce interruptions include:

- A training programme for managers, operational staff and contractors.
- More detailed analysis of factors leading to interruptions so that causes can be addressed.
- Making ten additional tankers available to allow supplies to be maintained.



We will be working through 2010/11 to improve performance by ensuring that our response to operational incidents is rapid and effective.

Three schemes were completed during the year to meet the Securities and Emergencies Measures Direction (SEMD), with a further scheme to be completed in May 2010. A total of nine schemes have been completed in the last five years. This work is to ensure that there are duplicate supply routes to allow continuity of supply when assets fail.

Three schemes were included in the 2004 Determination to improve the security of our water grid. Two of these have been completed. One (the North Warwickshire scheme) has been identified as not required. It has been replaced by a scheme to provide additional security of supply for Gloucester, identified as being necessary following the loss of supplies from Mythe treatment works as a result of flooding in 2007. This scheme

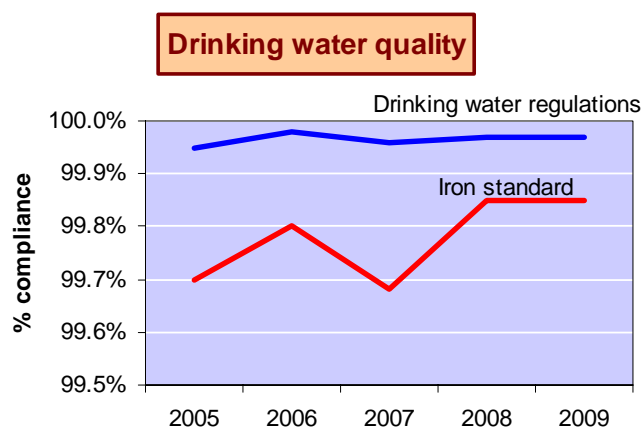
involves a new main from Strensham treatment works to Coombe Hill, south of Tewkesbury, to bypass the Mythe works. Work on site commenced in February 2010 and the scheme will be completed in 2010/11.

### 1.3 Providing safe, acceptable drinking water

#### Maintaining high compliance with quality standards

Our customer tracking research and national research show the high priority given to safe and reliable drinking water. We have maintained a very high level of compliance.

We have, however, needed to make improvements at Bamford Water Treatment Works and entered into an undertaking, with the Drinking Water Inspectorate, to progress a capital maintenance scheme which will improve the robustness of treatment processes.



#### Delivering schemes to maintain water quality

##### Number of schemes completed – 2005/06 to 2009/10

	Determination	Actual	Notes
Nitrates	16	14	1 scheme no longer required, 1 scheme now being commissioned
Cryptosporidium	6	6	
Plumbosolvency / lead treatment	16	16	
Pesticides	1	1	
Iron and manganese	2	2	
Total	41	40	

#### Improving the acceptability of drinking water to customers

We have had a £7m programme of improvements for taste and odour, benefiting 125,000 households, (changing processes at three water treatment works) and for hardness, benefiting 30,000 households (£6m for reducing hardness at two works). The projects have been completed and we are surveying customers before and after improvements are made to assess the value they put on the improvements achieved. The original programme provided for four schemes to reduce hardness but we are delaying two schemes until customer perception has been evaluated, as we now consider that the costs of the schemes may exceed the benefits.

## 1.4 Ensuring water is at an adequate pressure

We have achieved a significant reduction in the number of properties at risk of receiving low water pressure. The number had increased in 2008/09 as a result of improved measurement through installing permanent pressure monitoring throughout our network. Schemes to remove problems resulted in 3,614 properties being removed from the register. 1,769 of these were due to capital investment schemes (mains reinforcements or installation of booster stations) and 1,845 were removed due to operational solutions (modifications to District Metered Areas (DMAs) and changes to pressure control settings).

1790 properties have also been removed due to 'Improved Information' on completion of detailed investigation confirming that the properties are not at risk. However, 1,713 new problems were identified. The overall position is that the number of properties on the register has been reduced from 4,147 to 424.

## 1.5 Maintaining serviceability – water service assets

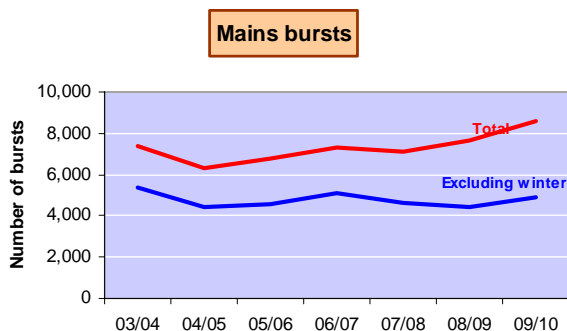
We are required to maintain our assets in a condition that enables service to customers to be maintained now and in the future. There is a basket of service and key asset performance indicators (serviceability indicators), defined by Ofwat, which are intended to measure the capability of assets to maintain service.

Our assessment is that water serviceability for both infrastructure and non-infrastructure assets is stable. The details are set out below.

### Serviceability – Infrastructure assets

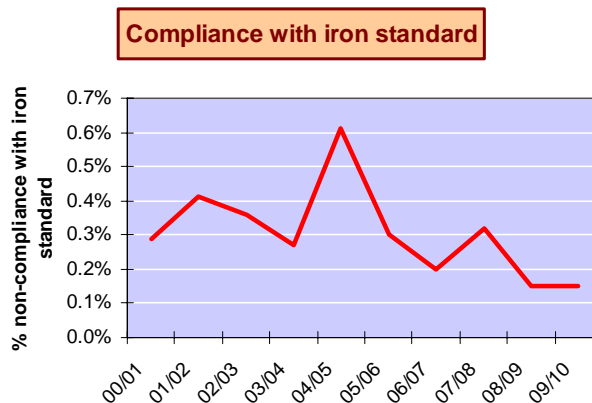
#### Mains bursts

Mains bursts showed an increase but we consider the underlying trend to be stable. Bursts increased in 2008/09 as a result of the cold winter and 2009/10 was exceptionally cold – Met Office data showed that it was the coldest for 30 years. This resulted in more severe ground penetration of frost and greater pipe stress leading to more bursts. The graph on the right shows the effect of the winter period on the trend in mains bursts.



#### Compliance with iron standard

Compliance with the iron standard is the same in 2009/10 as in 2008/09. The measure has shown an improving trend which has levelled off in the past two years. This may reflect the benefits of our mains cleaning programme and water treatment improvements. The low numbers of failures recorded means that there will inevitably be some fluctuation from year to year because of the random



nature of sampling.

### **Low pressure**

Performance in 2009/10 has improved, as we have worked successfully to reduce our register through operational improvements and capital projects.

### **Interruptions to supply**

Interruptions to supply increased in the year. We are taking action to improve performance through a number of operational measures and a programme of valve maintenance. Although this indicator shows a deterioration we do not consider that it reflects an underlying deterioration in asset serviceability, since the trend on mains bursts is stable – this issue is principally being addressed through operational improvements.

### **Overall assessment**

The key indicator, mains bursts, shows a stable trend. Although interruptions performance deteriorated, low pressure and iron compliance was stable, so overall water infrastructure serviceability is assessed as stable.

### **Serviceability – Non-infrastructure assets**

The overall performance achieved in the water quality-based indicators is high and this has been the case for a number of years:

- The lead indicator, water treatment works coliform compliance, is stabilising at very low levels of non-compliance. There is very little room to improve for this indicator and it is vulnerable to small variations in failures per year due to the high level of non compliance achieved. Only two exceedances of the standard were recorded, neither due to asset maintenance.
- Water treatment works turbidity showed no exceedances of the standard.
- No service reservoirs recorded coliforms in greater than 5% of samples.
- There were no treatment works with possible enforcements due to contraventions of the coliform standard.

Our overall assessment is that serviceability is stable.

### **KSI 2 Dealing effectively with waste water**

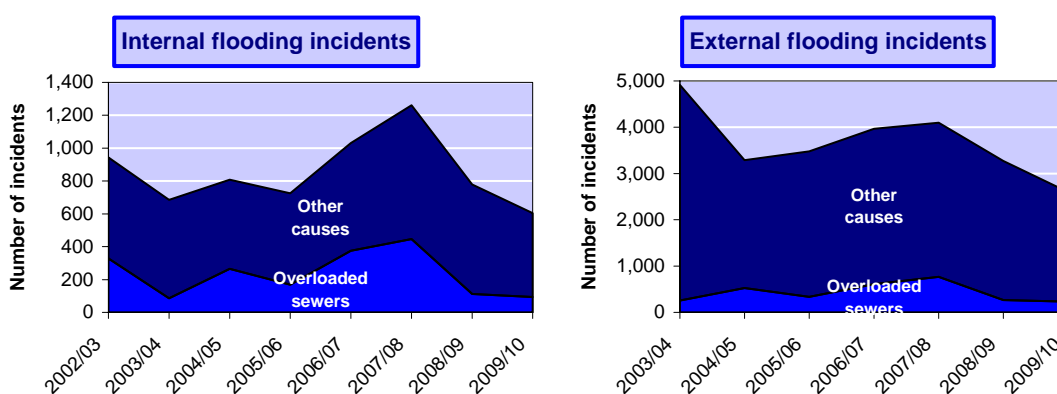
Our performance in dealing with waste water effectively is assessed against the following key aspects of service:

- Addressing flooding from sewers.
- Meeting standards for sewage treatment.
- Controlling pollution.
- Dealing with problems of odour from sewage treatment works.
- Dealing with sewage sludge sustainably.
- Maintaining serviceability.

## 1.6 Addressing flooding from sewers

There was a further reduction in sewer flooding in 2009/10, both from overloaded sewers and from other causes such as blockages. There were relatively few storms during the year, which contributed to the reduction in incidents. However, it does appear that our efforts to reduce flooding are leading to a downward trend in incidents. Our long-term aim is to eliminate flooding of properties from sewers, except as a result of exceptionally high rainfall which exceeds the design standards for our system. There will still, however, be fluctuations from year to year according to the weather.

Flooding due to “other causes” (sewer collapses, equipment failures and, predominantly, blockages) accounts for most flooding incidents. This is one of our Key Performance Indicators and we have introduced a wide range of measures to reduce the number of problems.



### Reducing other causes flooding

Measures taken to reduce “other causes” flooding included:

- Blockage awareness campaigns (including distribution of fat traps)
- A sewer cleansing programme, with 540 km of sewer surveyed using CCTV (1% of the sewer network) and 458 km cleansed (0.8% of the network).
- Sewer surveys and rehabilitation works targeted at areas of known flooding risk, with a threefold increase in proactive sewer repairs in 2009/10 as a result.
- Predictive modelling to identify and rectify potential problems
- Trial of fats, oils and greases collection at commercial premises

### Reducing flooding from overloaded sewers

There are 560 properties on the registers for being at risk of flooding more frequently than 1 year in 10. We have delivered a net register reduction of 209 from 2004/05 against the target of 158 (from a starting position of 770 in JR05). 171 properties were removed from the registers during the year as a result of actions we have taken to address flooding risk.

## 1.7 Meeting standards for sewage treatment

### Maintaining current performance

We have a consistently high level of compliance, among the best in the industry, and a good performance was maintained in 2009/10. The percentage of total population served by sewage treatment works in breach of consent is showing a large increase this year primarily due to the failure of Stratford STW. We have taken action to address this and this works is now operating back within its consent.

We have ensured that our assets are capable of maintaining a high level of performance by maintenance spend nearly 20% above the level assumed by Ofwat in 2004, financed by savings achieved in other parts of the programme.

### Meeting new standards

As the table below shows, almost all schemes due to be delivered in the AMP4 period have been completed.

#### Number of schemes completed – 2005/06 to 2009/10

	Required schemes		Actual	Notes
	Original	Revised		
Urban Waste Water Treatment Directive	73		67	
Freshwater Fish Directive	44		44	
Habitats Directive	24	9	9	This programme has been delayed as EA requirements were not finalised. Three schemes are no longer required and twelve have been postponed to AMP5.
Groundwater Directive	22	34	34	Additional requirements for investigations were added. All schemes have been completed
Countryside and Rights of Way Act	32	32	28	Four schemes delayed to AMP5 – reasons include inaccessibility of a site and requirements for a sewerage scheme to be completed first
Endocrine Disrupter trials	1	1	1	
Dangerous Substances	3	3	3	
Investigations	9	9	9	
First-time sewerage	25		29	We have enabled 529 properties for first time Sewerage connection in AMP4, exceeding the target of 413
Unsatisfactory Intermittent Discharges (UIDs)	174		174	The number of UIDs has been reduced from 146 at the beginning of the period to 6.

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## 1.8 Controlling pollution

We have been taking action to reduce pollution incidents, including:

- Investment to provide telemetry on sewer overflows, storm tanks and rising mains to provide early warning when assets are not functioning properly.
- Investment in Drainage Area Studies and associated CCTV Surveys to assess the condition and performance of our network, to enable actions to be targeted more effectively.
- Increased investment in our sewer cleansing programme to reduce pollution incidents caused by blockages and siltation.
- Rehabilitation or replacement where our sewer network is found to be defective.
- Removing the risk of pollution from dual manholes.
- Media campaigns to educate the public about the effects of disposing of oils, fats and greases in sewers and investigation of any properties that are misconnected to our network.

The reported number this year shows a small increase, from 313 to 322 incidents. This increase is due to standardisation of the classification of events by the Environment Agency, which led to an increase of 38 in the number of recorded incidents. The underlying trend is a continuing reduction in pollution incidents.

## 1.9 Dealing with problems of odour from sewage treatment works

Odour from sewage treatment works and from the sewerage system can have a detrimental impact on the quality of the local environment for those living close by. Sewage treatment and sewerage systems will never be completely odour-free but our long-term aim is to eliminate the potential for this to be a significant nuisance.

We have invested £5m in the five years to 2009/10, addressing problems of nuisance to customers, including reducing odour problems at ten sites, and will be implementing further improvements in the next five-year period.

## 1.10 Dealing with sewage sludge sustainably

### Sludge dryer programme

The AMP4 investment programme included the installation of sludge dryers at four sludge handling centres to increase the range of sludge product types on offer to customers for sludge recycling. The programme was reduced to two works to enable technical problems to be resolved before progressing further with the programme. Construction of the second dryer, at Netheridge, was completed and it commenced its proving trial in May 2010.

## 1.11 Maintaining serviceability

We are required to keep our assets in a condition that ensures service to customers can be maintained now and in the future. There is a basket of service and key asset performance indicators (serviceability indicators), defined by Ofwat, which are intended to measure the capability of assets to maintain service.

Our assessment is that sewerage serviceability for both infrastructure and non-infrastructure assets is stable. The details are set out below.

### **Serviceability – Infrastructure assets**

Through 2006/07 and 2007/08 we introduced an improved process for reporting sewer collapses and blockages. This produced data which was not comparable to previously reported sewer collapse data. This means that we have been unable to use sewer collapses alone as a reliable serviceability indicator. We have analysed the total number of repairs to the sewerage system which required excavation. This includes those necessary to repair collapses and to remove blockages which could not be cleared by rodding or jetting. Overall excavations are broadly stable. The number of reported collapses since 2007/08 now also seems to be stable.

Flooding due to overloaded sewers and due to blockages is influenced by weather conditions and so is highly variable. This year, flooding due to blockages have reduced and those due to overloaded sewers remained at a low level. We believe our targeted proactive cleansing and repair work has contributed to this reduction, though the weather may also be a factor.

The number of floodings due to collapses has reduced for the second year following increases in the previous three years. The number of flooding incidents can vary from year to year according to the location of collapses, even if collapse rates had remained stable. This indicator may also have been affected by the data improvements on collapses.

The number of blockages has increased, with increased misuse of sewers contributing to this. We have responded to blockages more quickly and ensured that we clear the blockage more effectively. This has resulted in a reduction in the number of repeat blockages and reduced the number of internal floodings from blockages.

The number of pollution incidents has increased slightly following two consecutive years of reduction. This is largely due to changes in classification of events by the Environment Agency. The number of pollution incidents at CSOs and foul sewers (categories 1 to 3) was 238. If those attributed to rising main failures are excluded (as previous years) the number reduces to 211. This compares with 191 last year.

### **Overall assessment**

We have used Ofwat's serviceability analysis tool kit to help assess the serviceability of our assets. Last year, Ofwat assessed the serviceability of our sewerage infrastructure as stable following two years when it was assessed it as marginal. This was largely on the basis of rising collapse numbers, which were affected by a change in data collection methodology. On a balanced view across the serviceability indicators, and taking into account the data improvements and the improvements in most of the indicators, we have assessed the serviceability of our sewerage infrastructure as stable.

### Serviceability – Non-infrastructure assets

Our performance against our serviceability measures this year is again stable as it has been throughout AMP4 on all three measures. Again we have maintained 100% compliance with the sludge recycling serviceability measure.

The percentage of sewage treatment works failing a numeric consent has fluctuated over the last few years and this year our performance is better than in 2008/09.

The percentage of total population equivalent served by sewage treatment works in breach of consent is showing a large increase this year, primarily due to the failure of one sewage treatment works, at Stratford. This works is now operating back within its consent. There have been extensive investigations into the failures and we have put operational plans in place to ensure that our performance returns to the high levels previously shown.

## KSI 3 Responding to customers' needs

### 1.12 Our objectives

Our objectives for customer service are to:

- Reduce failures, such as sending customers incorrect bills or interruptions to supply, so reducing the need for customers to contact us.
- Offer a high speed of response and standard of service to those customers who do need to contact us including resolving as many customer needs at the first point of contact as possible.

### 1.13 Improving performance

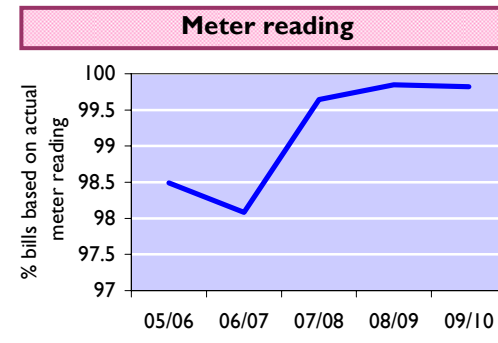
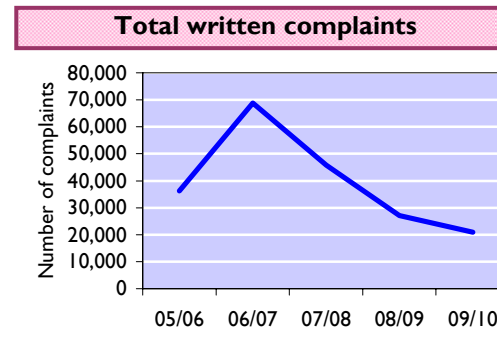
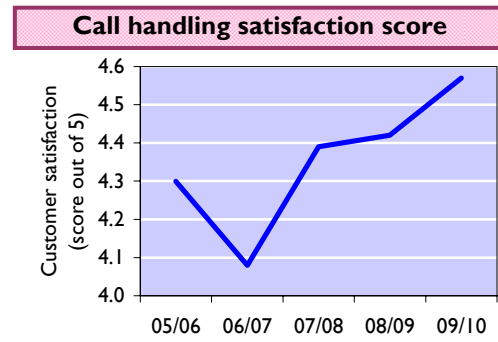
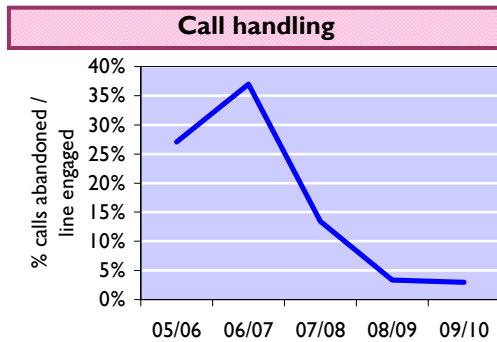
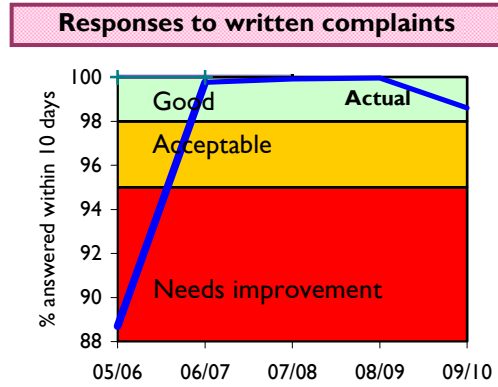
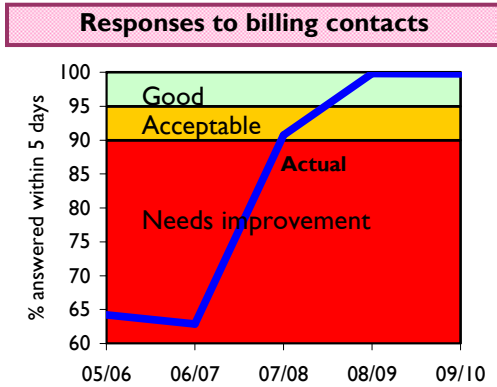
We continued to show a high standard of performance on all measures during the year. After correcting the reporting of customer service performance at the beginning of AMP4, we have achieved substantial improvements in performance. This reflects investment in our call handling service and implementation of new processes and controls.

Performance is shown in the graphs below. The most significant improvement was in customer satisfaction with call handling, with the rating increased to 4.57 (out of a maximum of 5), our highest ever score. Our performance is better than the industry average.

The number of written complaints was down over 20%, and lower than any other year in AMP4. We believe that this results from our commitment to deliver first-time contact resolution.

Dealing with written complaints shows a slight deterioration from 2008/09. This is because of a problem with our web-based leak reporting system, which resulted in some reported leaks not being passed through to the relevant department for response. The issue is being addressed.

On 24 March 2009 we introduced Web Self Service as an additional mode of contact. During 2009/10 nearly 104,000 customers registered to use this service.

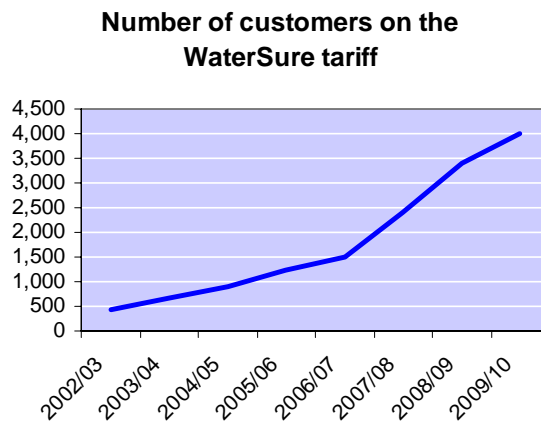


**1.14 Helping customers to pay their bills**

The WaterSure tariff is available to metered customers who receive certain state benefits, and have a medical condition involving additional water use or have three or more children. This tariff caps charges at the level of the average metered bill. Take-up of the scheme has been steadily increasing.

Over the past 12 months we have promoted the scheme to our customers through routes including:

- An article in the 'Source' magazine which is sent annually with every bill.



- 
- WaterSure information and application forms (to download) displayed on our company website.
  - Information being included in packs given to housing associations, Citizen Advice Bureaus etc by credit management's external relations team.

During 2009 we established links with a number of organisations to inform them of the WaterSure Scheme, including local authorities, housing offices, fostering and adoption agencies, and charities e.g. Age Concern and the Psoriasis Society. In addition, all Debt, Customer Field Service Specialists and Contact Centre agents are made aware of the scheme in their initial training with the company, as well as periodic presentations to refresh their knowledge.

We provided £5.5m to the Severn Trent Trust Fund in the year, which provides help to people experiencing severe financial hardship and in need of assistance to pay their water bills.

### 1.15 Future challenges

We have overcome the problems of the early part of AMP4 and achieved sustained good performance. However, we plan to make further improvements to meet rising customer expectations. The key elements of our plan are:

- Improving our quality and speed of response when customers contact us.
- Making improvements in the way we run our water and sewerage networks and billing systems, to minimise the need for customers to contact us due to service failures.
- Making changes which will increase the number of problems resolved at the first visit when customers need to contact us to report an issue.
- Increasing the range of channels for contact to meet customer needs.

## KSI 4 Minimising our carbon footprint

### 1.16 Our objectives

Minimising greenhouse gas emissions (and particularly carbon dioxide) to mitigate climate change remains a high priority both within the UK and internationally. Although the climate change summit in Copenhagen failed to agree legally binding targets for reducing emissions the UK has progressed with its implementation of the Climate Change Act 2008 and related Acts and strategies such as the Renewable Energy Strategy. The Carbon Reduction Commitment Energy Efficiency Scheme (CRC) started in April 2010 and is a major piece of legislation that affects STW due to our high level of energy consumption. Throughout the year we have been working to ensure we are well prepared for the scheme.

We contribute to the achievement of national targets by minimising our carbon footprint. However, energy-intensive treatment standards are making it hard to reduce carbon emissions. Our Business Plan for AMP5 showed that over the five years to 2014/15 we plan to make significant savings in emissions, particularly from a 45 GWh reduction in energy consumption, but these will all be offset by the emissions from increased quality and environmental requirements. Our recent report "Changing Course Delivering a sustainable future for the water industry in England and Wales" discusses why we believe that without significant changes to the policy and regulatory framework the sector does not look sustainable.

The three key elements to our programme for reducing emissions explained in our Strategic Direction Statement remain. These are:

- Reducing our carbon emissions, particularly by reducing energy use which accounts for 70% of our carbon emissions.
- Increasing our renewable energy generation to 30% of electricity consumption by 2014/15 (we currently forecast generating 277 GWh, 194 GWh from the regulated business and 83 GWh from the non-regulated business)
- Finding innovative ways to make further quality and environmental improvements without compromising carbon reductions.

### 1.17 Delivering carbon reductions

In April 2009 we restructured our energy and carbon activities to create the Energy and Carbon Management Department to co-ordinate all aspects of implementation of our approaches to energy and climate change. At the same time we created the Energy & Carbon Steering Group to oversee implementation of our programmes.

In 2009 we achieved the Carbon Trust Standard (CTS) in recognition of our reduction in carbon over the previous three years and our carbon management programme. Holding the CTS is not just recognition of our carbon reduction and management but will also benefit us in the CRC league table as it forms 50% of the early action metrics score in the first year of the Scheme.

Net energy use is one of our 20 Key Performance Indicators and is one of the factors in our employee share incentive plan.

### 1.18 Our carbon emissions in 2009/10

The completed summary table of greenhouse gas emissions required by Ofwat is presented below. Ofwat has also required a more detailed breakdown of emissions in the format of the Defra greenhouse gas reporting guidelines, these data are presented in the Appendix, *Carbon accounting in 2009/10*

#### 2009/10 operational carbon emissions

Item	Description	Unit	Value	Confidence Grade
1	Gross Operational Emissions	tonnes of CO <sub>2</sub> equivalent emissions	589,889	A2
2	Net Operational Emissions	tonnes of CO <sub>2</sub> equivalent emissions	566,602	A2
3	Operational Emissions according to CRC definition*	tonnes of CO <sub>2</sub> equivalent emissions	497,301	A1
4	Operational GHG emissions per MI of treated water	kg of CO <sub>2</sub> equivalent emissions per MI	377	n/a
5	Operational GHG emissions per MI of sewage treated	kg of CO <sub>2</sub> equivalent emissions per MI	541	n/a

\* The CRC (Carbon Reduction Commitment) includes only energy-related carbon emissions

This year there have been major changes to the UKWIR Workbook for estimating operational greenhouse gas emissions (see Appendix, *Carbon accounting 2009/10 for*

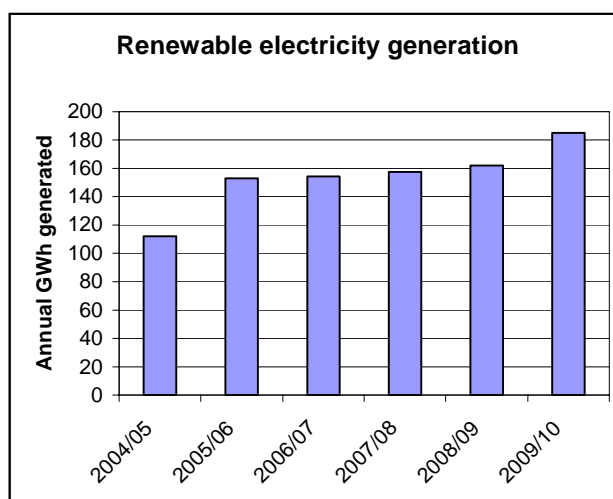
more detail). This means that apart from the CRC emissions the values in the table above are not directly comparable with previous years.

When compared with last year our CRC emissions have reduced by some 13,317 tonnes CO<sub>2</sub> (2.6%) in relation to 2008/09. This reduction has come about primarily due to a 19 GWh reduction in gross electricity consumption.

As the Workbook does not generate directly comparable outputs for the greenhouse gas emissions in the above table we looked at the source data to reveal if there have been any decreases/increases in actual consumption/production of emission sources. This shows that there have been real drops in energy consumption (19 GWh for gross electricity) and reductions in other emission sources such as sludge treatment and transport. There has also been an increase in biogas use so reducing emissions from this source.

Given the known changes in source data, we carried out some comparison of emissions by putting the 2007/08 and 2008/09 data through the JR10 Workbook gross emission sources (this means 2009 emission factors and new calculation methods are being applied to the previous years' data). This approach indicates a 4.3% drop in total emissions of 26,590 tonnes CO<sub>2</sub>e this year and a drop of 49,750 tonnes CO<sub>2</sub>e (8%) since the first carbon reporting in JR08. Nearly half (10,339 tonnes CO<sub>2</sub>e) of this year's reduction has come from greater energy efficiency.

This year's increase in the production and use of biogas reduces our emissions and has enabled an increase in our renewable energy generation in the regulated business to 183 GWh (163 GWh in 2008/09), amounting to 20% of total energy use. A broad range of initiatives have been delivered in the last 12 months to increase biogas production, increase plant availability and increase installed capacity, all of which have contributed to this increase in the volume of renewable energy produced. The increase in energy generation is shown in the graph on the right.



This is the first year that Ofwat has asked for data on renewable energy generation and the net benefit to emissions. The 23,287 tonnes CO<sub>2</sub>e difference between the net and gross is from the 43 GWh of energy we exported to the grid. The other 140 GWh of renewable energy generated is not accounted for in the calculations as we supplied it to ourselves, so displacing the need for grid electricity; this is equivalent to displacing another 76,185 tonnes of CO<sub>2</sub>e.

As last year, we have high confidence in our data and this is shown in the A1 and A2 confidence grades. For CRC data this is particularly important as under the CRC scheme we will be required to prove our energy consumption and the evidence for emission calculations. The gross and net emissions data reported in the table above has a slightly lower confidence grade because some of the additional data points have lower confidence grades than we have for our energy consumption. The effect of this is to reduce the overall grade to A2 but this still shows a very high degree of data robustness.

As requested by Ofwat more detail on how we calculate overall confidence grades is given in Appendix, *Carbon accounting 2009/10*.

## **KSI 6 Having the right skills to deliver**

### **1.19 Developing capability**

Based on lean management techniques used widely in manufacturing but relatively uncommon in our own industry, we launched our Safer Better Faster (SBF) process improvement programme three years ago. The programme upskills managers and front line employees and enables them to drive continuous improvement to processes and performance.

SBF is becoming the way we work on a day to day basis. The efficiency gains we are reporting and the new ways of working proved invaluable during the cold winter. For instance, we were able to call on staff from our billing call centre and meter reading teams to help tackle our leakage effort, and transfer teams across regions to where they were most needed.

We believe that a diverse and inclusive culture is a key factor in being a successful business. We aim to have employees who are inspired and motivated. Our aim for diversity is to reflect the community we work in and serve and to ensure that we are an attractive employer. We measure our diversity performance against external benchmarks and our recruitment and training initiatives are resulting in a gradual improvement in the diversity of our people.

### **1.20 Health and Safety**

A key part of offering a high quality environment to our employees, contractors, and visitors to our sites is giving the highest priority to health and safety. We intend to continue reducing the number of accidents and Lost Time Incidents is one of our Key Performance Indicators. Our target is to deliver upper quartile performance, and our ultimate vision is to achieve the lowest accident rate in the industry.

Over the last five years the Health & Safety performance has improved significantly, with rates of occupational ill health and RIDDOR reportable incidents reducing. The number of contractors' employees for which we are now able to collect data for has increased from 5,107 in 2004/05 to 47,688 in 2009/10.

Health & Safety is one of our key performance indicators with a 15% reduction on the target year on year to reach our aim of zero lost time incidents. In 2009/10 we improved our lost time incidents by 16% on the previous year, beating our target.

As well as winning 18 RoSPA (Royal Society for the Prevention of Accidents) awards ourselves, we received a gold award for our overall improvement programme. We also organised a joint ceremony with RoSPA for our award-winning contractors and suppliers. Twenty two of our suppliers won RoSPA awards in 2009/10, eight of which were gold. This year there were 8 Severn Trent employee entries for RoSPA awards and an overall company award. We achieved a 'Major Award in the Water Industry Sector'.

There have been 23 entries from STW contractors. This is still the only joint contractor company award scheme RoSPA run and want to use our approach as a model to promote to other companies.

The most significant shift in engaging people to make Severn Trent Water a safer place to work came about through the implementation of "Safer Better Faster". More employees are taking on the roles of Safety Representatives and Safety Coaches, working with managers to improve our culture and environment. The culture has improved to such an extent that, from 1 April 2010, health and safety will become the responsibility of specific business areas. We will retain a small central team to manage incident reporting and health and safety standards.

Innovation has been a key theme of the latter part of AMP4 and will be central to meeting our targets during the next regulatory period. Over the past year we further developed the One Supply Chain with our contractors and suppliers in readiness for AMP5, investing in strengthening relationships, reviewing the way we share experiences and knowledge, and creating shared offices for our capital programme teams. Such collaboration is essential if we are to continuously improve and encourage the sharing of best practice.

There has been an extensive occupational health initiative to reduce the number of Hand Arm Vibration Syndrome (HAVS) cases. This was a key occupational health concern with 18 reportable cases highlighted within Severn Trent Water through our 2007/2008 health surveillance programme. An operational review was undertaken and found that improvement was required to reduce the risk of exposure in terms of: people, processes and technology.

Baseline health surveillance of staff in high risk areas was undertaken to establish the full picture of individuals exposed to HAVS. This was also used as an opportunity to educate individuals the regarding the cause and effect of exposure. An improvement in process for routine screening for employees and pre-employment screening for new starters was delivered in order to ensure that early symptoms could be identified. A training DVD was also developed and delivered to staff.

We undertook a comprehensive review of vibrating equipment. All high vibration non-complaint equipment was removed from use in March 2008 and replaced with low vibration equipment.

The process for monitoring individual equipment use and trigger times was made more robust. In 2009, further changes in working patterns and practices reduced the amount of exposure from the use of vibrating tools that employees undertook. There have been no newly diagnosed HAVS cases in 2010.

## Chapter 2

# Financial performance measures

This chapter sets out financial performance in the year, and compares results for 2009/10 with 2008/09 and with the assumptions in the 2004 Final Determination.

Overall financial performance was strong, with the post-tax return of 6.7% is slightly higher than the 2004 Final Determination assumption of 6.3%.

Turnover was below the Final Determination level as a result of falling commercial and residential demand, increased take-up of meter options and an abatement of K. However, tax payments were also lower than the Final Determination assumption.

Operating costs (before exceptional costs) were lower than the Final Determination due to efficiency savings.

### KSI 7 Maintaining investor confidence

The interests of our customers and our investors are inextricably linked – we need access to financing to maintain and improve our services to customers; and lower financing costs mean lower bills. In the current economic environment both customers and investors are placing increased value on stability.

Achieving adequate returns on investment is essential for us to continue to be able raise finance for the continuing large scale capital programme on reasonable terms.

The current economic climate is having a significant effect on us, as a result of:

- Higher real borrowing costs.
- Falling income from commercial and residential customers.
- Potential increases in bad debts as a result of rising unemployment.

### 2.1 Introduction

This chapter sets out financial performance in the year, and compares results for 2009/10 with 2008/09 and with the assumptions in the 2004 Final Determination. The results are described in the sections set out below:

- 2.2 Financial summary
- 2.3 Turnover
- 2.4 Operating costs
- 2.5 Capital charges
- 2.6 Capital investment
- 2.7 Cash flow and gearing
- 2.8 Ratios and financeability
- 2.9 Dividend policy

## 2.2 Financial summary

The financial performance of the regulated business for 2009/10 is summarised below.

- Pre-tax returns were reduced by turnover being less than the Final Determination but tax payments were lower than the Final Determination assumption. This means that the post-tax return of 6.7% is slightly higher than the 2004 Final Determination assumption of 6.3%.
- Exceptional costs of £38m related to further restructuring and realigning the business.
- Turnover increased 4.6% year on year, driven by an increase in prices. However, it is below the 2004 Final Determination in real terms, principally because price increases over the five-year period have been lower than were included in the Determination.
- Tax paid is lower than the 2004 Final Determination primarily due to lower profits, a lower tax rate in 2009/10, timing of quarterly payments and the timing and allocation of capital expenditure. Taxation has increased from 2009/10 as a result of higher profit and the progressive abolition of Industrial Buildings Allowances.
- For the five-year period as a whole, returns were slightly (0.2% post-tax) below Determination levels, as a result of rebates paid to customers. Operating costs were higher than in the Determination, as a result of higher energy prices but this was offset by tax payments being lower.

The table below provides a summary of the financial performance in 2009/10, compared with the 2004 Final Determination:

£m, Outturn prices	Determination	Actuals	Difference
Turnover	1,392.8	1,370.0	(22.8)
Operating costs	504.9	488.1	(16.8)
Exceptional costs		37.8	37.8
Current cost depreciation (net)	297.1	272.4	(24.7)
Infrastructure renewals	96.5	97.9	1.4
Working capital adjustment	(3.4)	(0.3)	3.1
Operating income		4.3	4.3
Current cost operating profit	490.9	477.8	(27.8)
Tax paid	(102.0)	(59.6)	42.4
Post-tax return	388.9	410.3	14.6
Regulatory Capital Value (year average)	6,287.1	6,287.1	
Return on capital:			
Pre-tax	7.8%	7.6%	-0.2%
Post-tax	6.3%	6.7%	+0.4%

## 2.3 Turnover

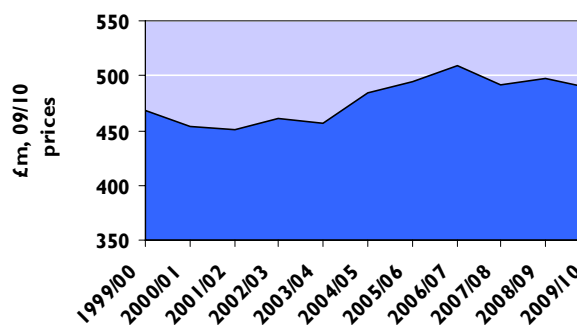
Turnover increased by £62m on the previous year, as a result of the increase in prices, partially offset by reduced demand due to the recession and the impact of meter option take-up.

For the AMP4 period as a whole, turnover is around 1% below Determination assumptions, as a result 'K' abatements due to a commitment made following Ofwat's 2006 interim report on Severn Trent Water reporting.

## 2.4 Operating costs

We have remained on track with our opex versus final determination KPI, which measures the variance between operating costs and Ofwat's Final Determination for AMP4. Efficiency savings have meant that operating costs before exceptional items have reduced from 2008/09, and are below the final determination for 2009/10. This is despite higher energy prices and increased costs of controlling leakage during the winter period, as a result of mains bursts caused by the cold weather.

Operating Costs (excluding exceptional costs)



Taking the five years of AMP4 as a whole, efficiency savings enabled operating costs (excluding exceptional costs) to be 1% below the 2004 Determination assumed levels, despite higher energy prices.

## 2.5 Capital charges

Current cost depreciation was £25m below the 2004 Final Determination, mainly as a result of the depreciation impact of differences between modelled and actual capitalisation and asset life profiles.

The infrastructure renewals charge (IRC) is close to the 2004 Final Determination, at £98m compared with £97m.

For the AMP4 period as a whole, capital charges are broadly in line with 2004 Determination levels.

## 2.6 Capital investment

Total gross capex for the five-year period (net of IRE grants) is £2.78bn. We have been achieving efficiency savings of around 6% on the expenditure assumed in the 2004 Final Determination and have been re-investing the capital into the business.

The areas we are investing in include:

- Renewable electricity generation, which will reduce operating costs and our carbon impact.

- Early investment in schemes for AMP5 (the next five-year period) to ensure delivery efficiency is maximised, through a more even capital expenditure profile than has been achieved in the past.
- Implementation of a fully integrated Enterprise Resource Planning system to drive standardisation and best practice across the organisation and improve the overall efficiency of the company.
- Development of a new central office which will achieve savings through the consolidation of central Midlands offices.

As a result total capex is close to 2004 Determination levels.

## 2.7 Cash flow and gearing

In common with other water companies:

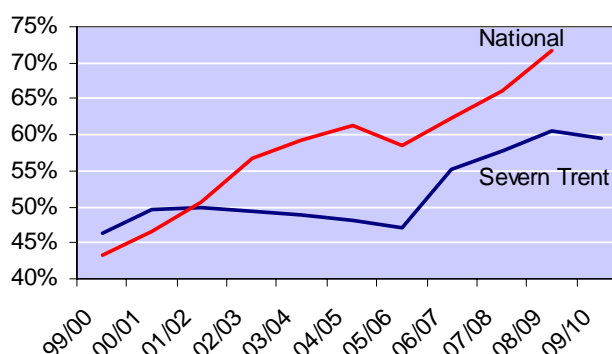
- we have negative cash flows.
- funding investment and servicing of debt and returns to investors exceeds free cash flow.

Net cash outflow before management of liquid resources and financing is £275m in 2009/10 compared with £195m in 2008/09. Consequently net debt has increased from £3,697m to £3,870m during the year.

During 2009/10 we deliberately held cash in advance of our spending plans. This is a response to the credit crunch and weaker debt markets. A European Investment Bank loan of £150m was arranged, which will be drawn down in 2010. Gross debt has increased from £3,857m to £3,876m and short term deposits and cash have decreased from £160m to £7m during the year.

Gearing was 60% at the end of the year, slightly below the industry average of 72% at the end of 2008/09.

Gearing (Debt / Regulatory Capital Value)



## 2.8 Ratios and financeability

The following table shows the key financial ratios for 2009/10. The overall financial performance in the year passes the financeability tests applied by Ofwat for PR04, except for the post maintenance spend cash interest cover. This cover is subject to variation from year to year with the level of maintenance spend. It is slightly below the test level as a result of higher maintenance expenditure in 2009/10 but meets the PR04 test over the whole five-year period to 2009/10.

	2009/10 Actual	PR04 Test
Cash interest cover	4.44x	3.0x
Post capital charges cash interest cover	2.30x	1.6x
Post CCA maintenance spend cash interest cover	1.98x	2.0x

## 2.9 Dividend policy

A number of factors influence the return paid to shareholders. The base dividend takes into account:

- The overall level of profit.
- Market expectations.
- Future cash flow requirements.
- A reasonable return on equity.

Severn Trent Plc's policy in AMP4 was to increase dividends by 3% above RPI inflation.

In January 2010 we announced that, given the impact of the reduction in Ofwat's allowed weighted average cost of capital to 4.5% real, an opening adjustment to the level of dividend payment would be necessary in order to maintain an appropriate and sustainable level of shareholder return.

Taking into account Ofwat's price reductions and updated RPI assumptions, the gearing assumptions from our Final Business Plan, together with improved levels of capital and operating efficiencies that have been identified, Severn Trent Plc decided to rebase the first year dividend for the start of the AMP5 period to a level around 10% below the full year 2009/10 dividend. The policy for subsequent years is for growth in the dividend from that new base, as performance improves, to deliver both progressive and sustainable returns to shareholders.

## Chapter 3

### Key supporting information

This chapter sets out developments during the year in a number of key aspects of the business, including capital maintenance and the supply / demand balance.

We have been steadily increasing our maintenance spend, in order to ensure reliable delivery of service to customers. Our mains renewal programme has already exceeded the five-year total set out in our Monitoring Plan.

We have met our undertakings to Ofwat on leakage and the Security of Supply Index. Increased security of supply has been achieved by significant contributions from investment to reduce leakage, delivery of additional supply sources, increased metering and water efficiency.

This chapter sets out developments during the year in a number of key aspects of the business, which are described in the following sections:

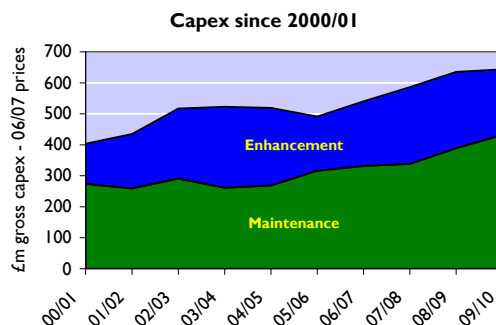
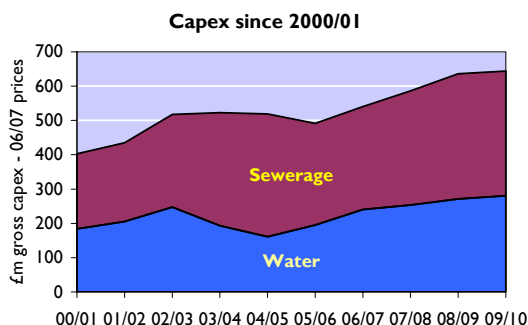
- 3.1 The capital programme
- 3.2 Capital maintenance activity - water
- 3.3 The supply/demand balance - water
- 3.4 Capital maintenance activity - sewerage
- 3.5 Sustainable procurement policy
- 3.6 Future regulation – “Changing Course”

#### 3.1 The capital programme

Capital expenditure in 2009/10 was £642m (net of infrastructure maintenance grants and contributions), £13m higher than 2008/09, and the highest in real terms since 1999/00. We have achieved efficiency savings but total capex for the five-year period is close to the levels assumed in the 2004 Determination. This reflects reinvestment of savings and the fall in the Construction Output Price Index in 2009/10 (which is used by Ofwat to inflate its Determination capital expenditure assumptions, so the fall leads to apparently higher spend compared with the Determination).

The graph below shows the steady increase in maintenance spend in the last four years, which reflects reinvestment of efficiency savings and has included investment in:

- Improvement in assets to achieve higher health and safety standards.
- A new IT system and a new central office to achieve efficiency savings.
- Generation of renewable energy.
- Replacement of assets to ensure that the improvements which we have achieved are maintained.



## KSI 1 Providing a continuous supply of quality water

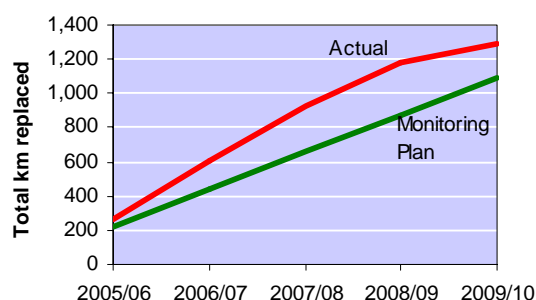
### 3.2 Capital maintenance activity – water

Work during the year included commencement of a major scheme at Bamford water treatment works in Derbyshire which will ensure that water quality standards are maintained in future.

Major Works Control System improvement projects at Frankley and Trimpley water treatment works were substantially completed. The improvements deliver standardised control, operation and functionality which will reduce the likelihood and consequence of works failure, provide improved asset management information and enable operating efficiencies.

Total mains replacement for the five-year period is well above the level which we set out in our 2004 Monitoring Plan. We have replaced nearly 3% of mains in the period. The programme is predominantly targeted at controlling leakage and reducing the number of interruptions to supply.

#### Mains replacement



### 3.3 The supply / demand balance – water

This section considers:

- The overall supply/demand balance.
- Delivery of water resources schemes.
- Leakage performance.
- Metering.
- Demand management.

#### The overall supply / demand balance

We gave an undertaking to Ofwat in 2007 to achieve a Security of Supply Index of 97 by 2009/10. The Security of Supply Index for 2009/10 is 98 and we have, therefore, met the target. The figure of 98 means that we have a small deficit against our target “headroom” to ensure that we can meet demand reliably in a dry summer. This will be addressed during the next five-year period, principally through further reductions in leakage.

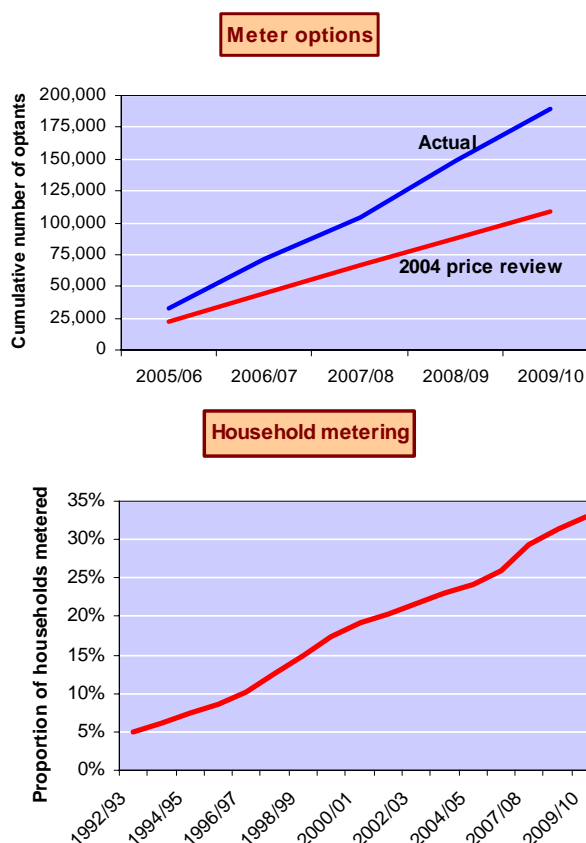
## Leakage performance

Leakage was affected by the coldest winter since 1978/79, as shown by Met Office data. Severe frosts led to an increase in water mains bursts. We significantly increased our leak detection and repair activity to address the resulting increase in leakage. As a result, the leakage for the year of 497 MI/d was below the target of 500 MI/d to which we were committed. We can confirm that we are below target both in terms of the number reported and after adjusting for the impact of data improvements since the target was set.

## Metering

The number of meter optants has continued at well above the level assumed in the 2004 Determination, with over 41,000 optional meters installed in 2009/10. We have already installed 80,000 more optional meters than was assumed for the five years to 2009/10.

Our objective is that in the long term all customers should be metered, as the only fair means of charging for the services which we provide. We expect there to be a continuing large number of customers choosing to have a meter installed in the next five years, and we also have a limited programme for installing meters when the occupier of a property changes. The graph on the right shows the steady increase in metering, with a third of households now metered.



## Demand management

Water savings from water efficiency activities were estimated to be 1.99 MI/d compared with 0.98 MI/d in 2008/09. This gives a final cumulative position for AMP4 of 5.71 MI/d against a target of 2.30 MI/d. Our tracking research continues to demonstrate that the majority of customers (75%) believe conserving water is important.

Cistern displacement devices (CDD) are promoted through our “Source” magazine (distributed with our bills), our website, at events, via press releases and radio interviews where appropriate. We have also commenced distribution of devices during our water quality sampling visits which has helped increase numbers requested by customers and provided a new communication channel to engage consumers on water efficiency issues. In total, over 136,000 devices were distributed during the year.

In 2009-10 we commenced two initiatives with social housing providers to install retrofit WC devices in their properties:

- A partnership with Gloucester City Homes for whom we provided 250 EcoBeta dual flush retrofit devices and training for their maintenance team on the installation of the devices.
- A partnership with Whitefriars Social Housing in Coventry and the Environment Agency as part of the wider Waterwise Share programme. This programme will install water efficiency retrofit devices in 2000 homes in Coventry.

Our household water audit service includes the booklets “Your guide to saving water” and “Could you save with a water meter?” and our inter-active website. These booklets, which contain our easy to use self-audit, are available as hard copy, can be downloaded from our website or used interactively online. Nearly 43,000 packs were distributed.

Our non-household programme focused upon two key areas: our school audit and retrofit programme and audits undertaken during our water regulations inspections. In 2009 we commenced a large scale water efficiency audit and retrofit programme with schools across the STW region. In total 577 site audits have been audited (including 169 reported in JR09) resulting in 523 sites having devices installed. Monitoring to record pre and post installation water use has allowed accurate reporting of measured water savings from this activity.

We have developed an on-line shop which sells a range of discounted water efficient products including showerheads, shower timers, flow regulators, leak alarms and other water efficiency devices.

During 2009/10 we have revised our educational programme to move away from small groups visiting our education centres and focus more on outreach, where our coordinators visit schools and community groups and deliver interactive talks and workshops. This has allowed us to increase the effectiveness of our programme by reaching a larger number of people whilst sustaining a high level of engagement on water efficiency issues. In total over 26,000 students and adults were reached through the programme.

### **Delivery of water resources schemes**

The water resource programme was successfully completed during the year, with the commissioning of two schemes:

- A scheme at Frankley Water Treatment Works in Birmingham to permit River Severn water to be treated reliably at Frankley. This increases our water available for use by 33 MI/d.
- A scheme at Nesscliffe in Shropshire to replace a bulk supply from United Utilities. The scheme increases our water available for use by 5 MI/d through the redevelopment of a former groundwater source.

## **3.4 Improving services**

Three schemes to enhance our strategic water supply grid were included in the 2004 Final Determination. Two of these have been completed. The third (North Warwickshire) has been replaced by a scheme to provide additional security of supply for Gloucester, identified as being necessary following the loss of supplies from Mythe treatment works as a result of flooding in 2007. This scheme will be completed in 2010/11.

Three treatment works schemes included in the 2004 Determination aimed at the improvement of taste and odour have all now been completed. We are surveying customers to assess their perception of the improvements.

Four schemes to reduce water hardness were included in the 2004 Determination. We have deferred two schemes until we have evaluated customer perception data from the schemes at Watery Lane and Newent, which were completed during 2009/10. Post commissioning customer perception surveys have been undertaken and will continue through 2010.

## **KSI 2 Dealing effectively with waste water**

### **3.5 Capital maintenance activity – sewerage**

25 km of sewers were renovated or replaced in the year, bringing the total for the five-year period to 162 km. 12 sewage treatment works, serving over 500,000 people in total, were refurbished. Our capital works activities in maintaining our sewerage service assets supported the delivery of maintained serviceability, including a very high standard of sewage treatment compliance.

We have invested £29m in the year in waste water assets to remove health and safety risks. This is contributing to our Key Performance Indicator (KPI) objective to achieve the highest health and safety standards in the industry.

### **3.6 Service enhancement – sewerage**

Our service enhancement programme involves expenditure to address sewer flooding problems. In total for the five years to 2009/10, we have resolved 719 problems where properties were at risk of flooding at least once in ten years. The 2009/10 year-end position is 560 properties on the registers, compared with the requirement to achieve a register position of 612.

### **3.7 Adopting private sewers**

A significant change for us and our customers in AMP5 will be the transfer of some individual customers' private sewers into water company ownership. This is designed to reduce the risk of future liability and repair costs to the benefit of customers and help promote the integrated management of the sewerage network. The transfer is currently forecast to happen in October 2011. This will see approximately 37,000km of existing private sewers transfer into our ownership, along with responsibility for repair and maintenance. We also expect that up to 4,000 private pumping stations will transfer on a phased basis over 5 to 10 years following the sewer transfer.

While we await the consultation on the regulations which will confirm the scope and timing of transfer, we have continued to engage with regulators and government to put the necessary regulatory and business response in place to deliver an efficient service to customers following transfer. There will need to be some adjustment to output targets to reflect the change in our responsibilities.

An Interim Determination to increase prices will be necessary at some point during the period to recover the additional costs involved.

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### 3.8 Sustainable approaches to meeting environmental standards

A key challenge we face is the need to strike a good balance between improving river ecology and carbon production. Large-scale capital projects are not always the best answer. We need to become more innovative, finding ways of improving river quality while keeping down carbon emissions and costs. One example is catchment management where we are working with farmers and industrialists, providing incentives for them to discharge less effluent or toxic waste at their sites into water courses. We have also joined forces with the Environment Agency to explore ways in which sewage treatment consents can be made more flexible, allowing costs and carbon impacts to be reduced, while still achieving required river quality standards.

## KSI 6 Having the right skills to deliver

### 3.9 Sustainable procurement policy

We have signed up to British Water's "Guide to Sustainable Procurement", we are a founder member of the Achilles "verify" scheme and have embedded the principles of the Chartered Institute of Purchasing & Supply relating to corporate responsibility, business ethics and best practice into our purchasing policies and procedures. The foundations of our purchasing principles are: best value, compliant, transparent, fair, open and honest.

As in previous years we have continued to build on our supply chain relationships to ensure that we meet our sustainability objectives. We propose to strengthen this performance in AMP5 through our "One Supply Chain" and "Buying Club" with our AMP5 partners.

Our focus on Health and Safety over the previous two years has delivered significant improvement in AMP4. However, we believe that further improvements are achievable in AMP5 and beyond and are supported by our internal initiative "zero by choice" and our AMP5 partners "Behavioural Safety" initiatives. Health & Safety performance remains a key element in our AMP5 incentivisation methodology.

Our AMP5 contractors will build on the recycling performance of AMP4, considering new opportunities for review, refurbishment, recycle of construction related plant and equipment. Internally we continue to seek new recycling opportunities with our supply chain and where viable and practical we would seek to implement these initiatives.

We see our recycling initiatives to be closely aligned to and supporting our own carbon objectives. Again we have carried out extensive training on our carbon model with our AMP5 partners and in the coming months plan to engage our principal framework suppliers to ensure that carbon objectives are applied further down the supply chain.

Since the last return, we have concluded our AMP5 electricity supply contracts which include energy efficiency consultancy and a commitment to assist in and support our carbon reduction initiatives. Our net imported electricity has been reduced by some 4% through focused projects and improved management control. We will be continuing this attention to a key high spend area, which is also a major carbon contributor.

Over this year we have worked with Business in the Community (BITC) as an acknowledged external independent sustainability organisation. As a result of these efforts, our overall company status has increased from Gold to Platinum, which recognises our high sustainability credentials over the whole business spectrum.

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## KSI 8 Promoting an effective regulatory regime

### 3.10 Changing Course

The achievements of the water industry in the 20 years since privatisation are well documented – service to customers has improved, new drinking water standards have been met, tighter environmental standards have been achieved and new investment attracted.

These successes have been driven by an effective regulatory framework which has incentivised companies to deliver improvements and to become more efficient, so keeping bills down. The framework has also ensured investor confidence, allowing companies to attract financing for the improvements, with around £85 billion spent over the last 20 years.

However, delivering the improvements has not been without consequences. Water company debt has increased significantly, customers have faced higher bills and carbon emissions have increased.

The water industry needs to adapt to meet new challenges, in particular climate change, and deliver more innovation and sustainable solutions. Without change, the industry faces a continuing large capital programme which may not be sustainable in terms of its impact on financing, bills and carbon footprint.

We believe now is a critical time to question what future direction we should take. We have developed our position on these issues and published a report, entitled 'Changing Course: Delivering a sustainable future for the water industry in England and Wales', which sets out six key changes we believe are required to meet these continuing challenges. We believe that implementing these changes would deliver better outcomes for customers, investors and the environment. The report is available on our website, [www.stwater.co.uk/changingcourse](http://www.stwater.co.uk/changingcourse).

#### Changing course – six key changes required to meet future challenges

##### Policy changes

- More flexible implementation of EU Directives to ensure a better trade off between costs and carbon emissions.
- Developing competition through water trading, which would also optimise resources nationally rather than just regionally.

##### Regulatory changes

- A more flexible approach to consents to allow for more cost-effective approaches.
- An improved price-setting process to provide the right incentives for sustainable financing, more sustainable solutions and increased innovation.

##### Industry changes

- Companies must take the lead in driving innovation, both in terms of the strategic and technical solutions they pursue and in shaping the wider direction the sector takes.

**Changes to the institutional framework**

- Government should prioritise national policy outcomes and ensure the regulatory framework is set up to deliver them.

We have engaged with our key stakeholders in developing our thinking and we believe there is a degree of consensus about the need for, and the direction of, change. We will continue to develop our thinking on these issues and work with our stakeholders to influence the way in which the sector develops.

## Chapter 4 Efficiencies

### KSI 5 – Lowest possible charges

In order to meet our objectives of lowest bills and highest standards we are planning to make significant improvements in efficiency. We are currently putting changes in place to take the complexity and costs out of our operation and improve quality of service at the same time.

We have been investing in a number of projects which will reduce costs including renewable energy generation, the new Severn Trent Centre in Coventry, and a new IT system. Our focus is on delivering sustainable efficiencies, lowering the cost of our operations and therefore providing value for our customers.

#### 4.1 Introduction

This chapter sets out developments during the year in a number of key aspects of the business, which are described in the following sections:

4.2 The current improvement programme

4.3 Efficiency in 2009/10 – capital expenditure

#### 4.2 The current improvement programme

As a result of efficiency improvements we are delivering, operating costs in 2009/10 (excluding exceptional costs) were 3% below 2004 Determination levels.

We have been developing a new IT system to provide a common platform, consistent processes and the reduction of interfaces across disparate systems which will enable us to drive consistency and process compliance throughout the organisation. The first release of our £70 million programme went ahead without any significant disruption to our operations, improving our back office operations and reducing costs.

This, along with other programmes of work, has identified opportunities to reduce the number of people required in some central support functions. We are aiming to reduce staff numbers in these functions by up to 250 people. We will be ensuring that the reduced staff numbers do not adversely affect our ability to deliver services.

We have been introducing our “Safer Better Faster” process improvement programme across more of the business. This helps us to make our processes leaner, improving our ability to get it right first time every time, upskilling our workforce to enable them to work in different ways and areas of the business, and giving our people a better understanding of how their work fits into our business as a whole.

In 2009/10 we invested £36 million of a total budget of £65 million in our new Severn Trent Centre in Coventry. Bringing people together on one site will reduce costs and improve performance.

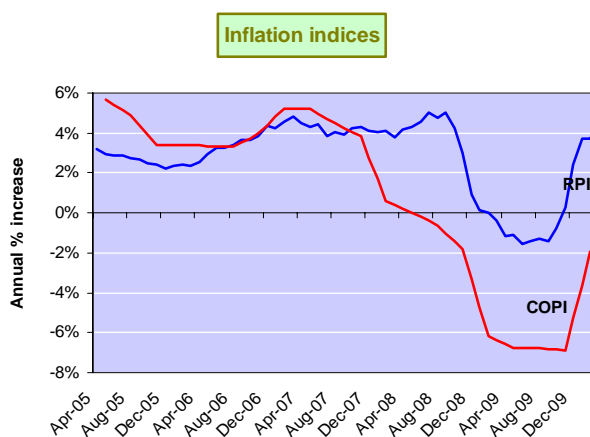
We are managing the price we pay for electricity by fixing the price for future requirements, reducing exposure to the risk of electricity price increases.

#### 4.3 Efficiency in AMP4 – capital expenditure

We have been delivering efficiency savings during AMP4 of around 6% on the expenditure assumed in the 2004 Final Determination and have been re-investing savings into the business, including:

- Renewable electricity generation, which will reduce operating costs and our carbon impact.
- Early investment in schemes for the next five-year period to achieve delivery efficiency through a more even capital expenditure profile than has been achieved in the past.
- Adoption of a fully integrated business system to drive standardisation and best practice across the organisation and improve the overall efficiency of the company.
- Development of a new central office which will achieve savings through the consolidation of central Midlands offices.

Efficiency measurement against Ofwat's Determination is affected by the fluctuations in the Construction Output Price Index (COPI), which is used to inflate the Determination to current year's prices. The fall in COPI during the year has been much greater than the fall in RPI. Prices for capital expenditure projects have not fallen in line with COPI as the costs of some elements of the programme, such as IT and the mechanical and electrical elements of projects, have little or no relationship with construction industry prices.



Since capex prices have not fallen in line with COPI, but COPI is used to index the 2004 Determination to 2009/10 prices, this has the effect of reducing the apparent level of efficiency achieved.

#### 4.4 Future efficiency – capital expenditure

We have commenced implementation of our strategy for efficient delivery of the AMP5 programme. The overall objective of the strategy is to be able to:

- Select, design, build and maintain assets Safer, Better and Faster.
- Make the best investment choices in terms of need, scope, & size.
- Achieve design efficiency and reduce construction costs.
- Improve integration and process commissioning.
- Eliminate waste at all stages.
- Drive innovation.
- Manage risk proactively targeting the right skills and knowledge.

The AMP5 strategy is designed to build on the good practices, processes and expertise within our supply chain. We want to achieve greater levels of efficiency through

innovation and higher levels of partnership. Our overall objective is to deliver better value for money for our customers.

We will maintain overall responsibility for managing and delivering the capital programme and its associated projects. Detailed design of the preferred solution shall rest with the contractor. However, a collaborative approach involving contractor and client will ensure that aspects such as the ability to operate and maintain are duly considered.

## Chapter 5 Competition

### KSI 8 Promoting an effective regulatory regime

We see development of a framework which promotes competition as being an important part of promoting an effective regulatory regime. This chapter reviews actions during the year to ensure continuing compliance with competition law. We then set out our actions to further competition in the industry. The chapter comprises the following sections:

- 5.1 Compliance with competition law
- 5.2 Implementation of the Water Supply Licensing regime
- 5.3 Self-lay
- 5.4 Inset applications
- 5.5 Promotion of competition

#### 5.1 Compliance with competition law

In line with best practice, we have maintained a functional separation between:

- Dealing with competitor access to Severn Trent Water – responsibility rests with the Director of Water Services
- Servicing the needs of eligible customers in-area – responsibility for serving eligible customers, and winning back customers who have switched, rests with the Director of Customer Relations

We also have legal separation between the core water business and other businesses to achieve transparency and remove incentives for cross-subsidy:

- Competing for new customers out-of-area – responsibility rests with Severn Trent Select Ltd, i.e. outside the regulated company.
- Property searches are dealt with through a sister company, Severn Trent Retail and Utility Services Limited, under a non-exclusive licence with Severn Trent Water.

We have a rolling training programme for new starters engaged in activities where the Competition Act is most likely to have an impact. During the training we emphasise the requirement to comply with competition law, and on collating and retaining evidence of compliance.

#### 5.2 Implementation of the Water Supply Licensing regime

During 2009/10 we have continued to work with Ofwat and other stakeholders to ensure that the Water Supply Licensing (WSL) regime is implemented effectively. Although no eligible customers have yet transferred from Severn Trent Water Ltd to a licensee, we have continued to engage with Ofwat, the Cave Review and DEFRA through the consultation exercises and have sought to explain and provide clarification regarding the issues that can arise as a result of the proposals suggested. This is particularly the case regarding the Customer Transfer Protocol process with the proposed reduction of the threshold for competition to annual consumption of 5 MI.

Wholesale Master Agreements – during 2009/10 no licensees applied for an agreement, and no premise-specific applications have been received or processed.

Combined Supply Agreements and Secondary Supplies – during 2009/10 no licensees applied for a combined supply agreement.

### 5.3 Self-lay

Self-lay applications decreased significantly during 2009/10.

The number of mains and service agreements reduced by approximately 50% compared to 2008/09. This reflects the continued downturn in building activity in 2009/10 due the current economic climate. Similarly the number of Service-only agreements has also halved compared to 2008/09.

We have [10] Self-Lay Organisations (SLO) operating in our area and we have accepted [12] Mains and Services agreements and [6] Service-only agreements.

Not all of the agreements have been completed within this reporting year as the schemes can span a number of years in completion.

### 5.4 Inset appointments

In 2009/10 we received initial applications to supply water and waste water services for two greenfield sites within the Severn Trent Water area from one potential Inset Appointee.

We are still in negotiations with the applicant for draft bulk supply and discharge agreements. The statutory notification of their intent to inset for one site within our area of appointment was made during 2008/09 and as yet has not been acted upon. We are seeking clarification regarding the status of this notification.

A second potential Inset Appointee made initial approaches during 2008/09 but has not continued to seek bulk supply or discharge agreements.

### 5.5 Promoting competition

We continue to promote competition and have provided Defra and Ofwat with our considered, balanced response to the various consultations on competition. We have published our 'Changing Course' document, which proactively seeks to drive change and secure a sustainable future for the water industry in England and Wales. 'Changing Course' promotes water trading as a way for companies to optimise the use of resources nationally, and as offering the potential to defer regionally focussed capital-intensive solutions. We will continue to provide suggestions on development of competition and work with regulators and Government to achieve an efficient and viable competitive regime.

## Chapter 6

# Board Engagement

This chapter sets out our approach to ensuring that we have a sound system of controls in place so that, as far as possible, the information which we provide to Ofwat is accurate. The chapter includes:

- The action we are taking to ensure that we have adequate processes for information provision.
- Our internal controls, including those processes that govern the production of June Return.
- The required statements from the Severn Trent Directors and the Severn Trent Plc Board.

Our processes include:

- The Chief Executive, Board and Audit committee receiving regular updates on the June Return.
- Clear definition of accountabilities for data and commentary.
- Documentation of processes for all lines of data.
- Training focussed to the needs of individuals and teams.
- Continuing improvements to self-certification of data, quality of commentary and improving the audit process.
- Approval of all chapters by a member of the Executive Committee.

## KSI 8 Promoting an effective regulatory regime

It is an essential part of an effective regulatory regime that companies have a sound system of internal controls, overseen by the Board, so that information provided to the regulator is as reliable as possible. This chapter sets out how we go about achieving this KSI in relation to the June Return.

### 6.1 Introduction

Our approach is set out in the following sections:

- 6.2 The Board's process for reviewing the adequacy of systems for planning and internal control.
- 6.3 The processes and controls that govern production of June Return 2010 (JR10).
- 6.4 Director engagement.
- 6.5 Board statement.

### 6.2 The Board's process for reviewing the adequacy of systems for planning and internal control

The Board is responsible for establishing and maintaining a sound system of planning and internal controls and meets its responsibility through:

- Establishing a robust governance framework, including appropriate policies for internal control and risk management observed throughout Severn Trent.
- Establishing and operating an effective business planning process.
- Seeking ongoing assurance throughout the year both from line managers and other providers of assurance that our system of internal control is functioning effectively.
- Undertaking a formal review of the adequacy of planning and internal control and reporting to Ofwat on how it has carried out that review as part of the year end process.

During the year, the Chief Executive, Board and Audit Committee have had regular updates from the Director of Regulation in relation to the process for collating and finalising JR10. This has included reports on the plans to improve the process as a result of the reviews carried after JR09, including the key reports set out in the table below.

Date	Reports to the Board
18 March 2010	<p>The Severn Trent Audit Committee received a report from the Director of Regulation outlining:</p> <ul style="list-style-type: none"> <li>• The process and controls for JR10</li> <li>• Improvements from JR09.</li> <li>• Progress against the plan for JR10 and risks</li> <li>• Independent assurance including the findings of an Internal Audit on two reporting areas.</li> </ul>
18 May 2010	<p>The Audit Committee reviewed the JR10 Board Overview and Executive Summary and received reports from the reporter (Atkins) and the financial auditor (Deloitte).</p>
21 May 2010	<p>The Severn Trent Board received a report as above from the Chairman of the Audit Committee and reviewed the JR10 Board Overview.</p>
27 May 2010	<p>The Severn Trent Water Ltd Board signed off JR10 for submission to Ofwat</p>

As set out by the Financial Reporting Council, Internal Control, Revised Guidance for Directors on the Combined Code, October 2005:

- A sound system of control reduces but cannot eliminate the possibility of poor judgement in decision-making; human error; control processes being deliberately circumvented by employees and others; management overriding controls; and the occurrence of unforeseeable circumstances.
- A sound system of internal control therefore provides reasonable, but no absolute, assurance that a company will not be hindered in achieving its business objectives, or in the orderly and legitimate conduct of its business, by circumstances which may reasonably be foreseen. A system of internal control cannot provide protection with certainty against a company failing to meet its business objectives or material errors, losses, fraud, or breaches of laws or regulations.

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### 6.3 The processes and controls that govern production of JR10

The JR10 process consists of two phases:

- Phase 1 was completed by the end of March 2010 to ensure readiness for the production of the data and commentary.
- Phase 2 was completed in April and May and covered the production, review and authorisation of the JR10 submission.

In line with previous years, there is a clear ownership structure for data lines, tables and commentaries with accountabilities defined. Overall accountability rests with a member of the Executive Committee (including Directors and Board members) who has ownership of all Chapters relevant to his/her areas of the business.

There are robust and documented processes and systems with Process Description Templates (PDTs) for each line of data contained within the June Return. Documents are managed using a Microsoft product, SharePoint. This provides a single workspace for teams to access and organise documents associated with JR10. Through its use we are able to control access and provide complete version control.

To store and manage data, we have used the June Return repository in line with JR09.

For JR10, training was focussed to the needs of teams and individuals with differing levels of knowledge and experience. This was achieved through a series of “Chapter start-up meetings” which consisted of facilitated workshops involving all the relevant people involved in the production of a Chapter. This year, teams were provided with detailed documentation of the high level June Return process including chapters related to roles and responsibilities, reporting requirements, data quality, confidence grades, documenting processes and audits.

Team Reviews were operated within the business teams led by a member of the Executive Team and involving Chapter Owners. These reviews ensure that the completed data and commentaries are ‘fit for purpose’.

We continue to drive improvements to the process and controls that govern the June Return submission started in 2006. A process review is completed after each June Return submission and an action plan agreed with the Executive Committee for the following year.

Key improvements for JR10 included improvements to the audit process and structure and controls within SharePoint. The main focus for JR10 has been to ensure that we effective implementation of SAP in relation to June Return reporting and also to develop processes for compilation of the new Accounting Separation tables.

An Internal Audit review was completed to provide assurance on the integrity of processes and controls relating to the ‘Flooding from Sewers’ register data, particularly relating to reallocations between registers. In addition, the process for GSS payments relating to customer metering (Integra) to determine the robustness of core systems and the audit trail for data was reviewed. In both cases, the audit identified that processes had improved since JR09.

In line with previous years, the Reporter audit was divided into two phases. Phase 1 assessed the processes prepared to produce the JR10 data and was completed in February and March. Issues raised in relation to underlying processes were addressed

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prior to the phase 2 audits. Phase 2 audits focussed on the integrity of the data and commentary produced for JR10.

The financial (and regulatory) accounts are subject to statutory audit by Deloitte.

In addition to the improvements that we have made to processes and controls, we have substantially developed the culture of the organisation. Data is owned by the operational teams and we seek to continuously improve the quality of the reported data. We believe that this is evident in our June Return submission and allows us to focus on delivering real improvements to customers. However, changes in reported performance are frequently a result of improving data and this needs to be considered against delivery of outputs.

This year's June Return has seen the inclusion of tables relating to the separation of our accounts into various specified business units for the first time. The Accounting Separation tables have been prepared in line with Ofwat's reporting requirements and we recognise that Ofwat has developed these requirements with reference to feedback from the industry. In relation to OPEX approximately two thirds of costs (64%) have been directly allocated with the remaining third either being allocated in line with Ofwat's cost drivers (27%) or through management judgement (9%). We believe that the individual judgements made are not material and in aggregate, the results they produce are reasonable. The approach has been subject to independent assurance by auditors (Deloitte) and the Reporter (Atkins) and neither identified any significant issues with our approach or the data reported in the tables.

We welcome the introduction of competition into the Water Industry. However, we remain concerned as to whether accounting separation will deliver the high level objectives that Ofwat have set out for it. In particular:

- In order to introduce separate price caps for PR14 - We believe that this might be to the detriment of competition by locking in average cost structures and also cutting across process lines which could lead to inefficient processes and company structures. The allocation of activities does not align to our process aligned structure.
- In order to enable more effective regulation - We believe that this could be achieved by creating better incentives for companies to be more efficient rather than the collection of additional data.

Care also needs to be taken in interpreting the results of our and other companies' data. We would like to be sure that data and reporting is consistent across the industry before comparisons are made.

During 2010, we have completed the first phase of implementation of our new IT system (SAP) into our Finance, Purchasing and Human Resource functions. We have used SAP to produce some of the data for JR10. Whilst we have taken every effort to ensure that the reports and processes are robust, new systems have inherently less well established processes and experience of use. The transition to reporting from SAP has been managed through the development of detailed functional specifications for the reports which have been robustly tested and audited both in advance of and as part of the June Return process with no issues coming to our attention.

#### **6.4 Director engagement**

As discussed above, in the description of processes and controls, members of the Executive Committee were fully engaged in the process of preparing and assuring the

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content of JR10. Final Chapter data and commentary were approved by the appropriate member of the Executive Committee which was reviewed by the Severn Trent Audit Committee and Board as set out in section 6.2.

The Directors also received a report on the process and controls to enable them to give the following confirmation:

- a. so far as the Directors are aware, there is no relevant information of which the company's auditor or reporter are unaware; and
- b. they have taken all the steps that they ought to have taken as a Director in order to make themselves aware of any relevant and to establish that the company's auditor and reporter are aware of the information.

In complying with paragraph b. above, a Director has made such enquiries of his executive management team, other relevant employees and of the company's auditor and reporter for that purpose and taken such other steps (if any) for that purpose, as are reasonable given the relevant factors. The relevant factors include the volume of information, the position and knowledge of that Director in relation to the day to day running of each part of the business and the general requirements of reasonableness in relation to "information" as set out in the Instrument of Appointment.

## 6.5 Board Statement

In considering Ofwat's requirements for the provision of information from companies as described in section 6.1, the Severn Trent Board has taken account of the following:

- The overriding systems of governance and control used to manage the company.
- The processes and controls in place to manage the compilation of the June Return including improvements made from previous years.
- The team review and approval process which ensure that every chapter of the June return has been approved by a Senior Manager and member of the Severn Trent Executive Committee.
- The scope and findings of the internal and external audits as presented to the Audit Committee.

Having taken into consideration the above, we have concluded that:

- The June Return 2010 has been compiled in a planned and professional manner with appropriate accountabilities and responsibilities.
- We have sought to make appropriate assumptions and conclusions based on the best available evidence and have explained these.
- Confidence grades have been used responsibly to indicate the quality of our data.
- The appropriate Executive Committee members have been engaged in the June Return process and have approved chapter commentary and data.

Accordingly, we have no reason to believe that the information provided in this return is other than reliable, accurate and complete with the tolerances defined by the confidence grades and as described in our JR10 commentaries. In addition, we believe that the company's processes and internal systems of control are sufficient to satisfy Ofwat's requirements for the provision of information.

The endorsement of information relates to that provided to Ofwat for the first time as part of June Return 2010. In relation to the information provided to Ofwat as part of previous

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June Returns, we have not reviewed the processes for collating that data as part of our current year process and have relied on assurances given at the time the data was submitted.

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For and on behalf of the Board  
A Wray  
Chief Executive

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## Appendix 1 – Carbon accounting in 2009/10

This year Ofwat has asked for supporting commentary on carbon accounting in an appendix complementing the Board overview by giving more detail. Specifically Ofwat has asked for information on data collection and robustness, omissions and assumptions, intensity ratios and an overview of future work. This Appendix gives the detail on these topics and sets out our approach to carbon management and strategy.

### **Key changes to UKWIR carbon accounting workbook**

This year there have been major changes to the UKWIR Workbook for estimating operational greenhouse gas emissions. There are a number of reasons for these changes.

In July 2009 Defra, in conjunction with the Department for Energy and Climate Change (DECC), published updated lists of emission factors (EFs) to be used in the UK for company reporting in 2009/10. The document includes a large number of new EFs for methane and nitrous oxide as well as new accounting methodologies.

In September 2009 Defra also published “Guidance on How to Measure and Report your Greenhouse Gas Emissions” addressed to UK organisations willing to measure their carbon impact and report annual emissions on a voluntary basis. This guidance represents a substantial revision/enhancement of reporting guidelines previously published by Defra which had been used to develop the Workbook methodology.

In October 2009 DECC released Government Response and Policy Decisions on the latest consultation on the draft Carbon Reduction Commitment (CRC) Order 2010.

As a result of relevant changes introduced by the above, as well as other legislative changes such as those established by the Renewables Obligation (RO) Order 2009, the accounting methodologies and EFs used in the Workbook became out of date and needed to be re-aligned with the latest guidance and legislation.

In December 2009 Ofwat published the reporting requirements for June Return (JR) 2010. According to these specifications, companies have to include more detailed information on their operational carbon emissions in 2009/10 than in previous years. Ofwat's requirements are drawn from the latest developments of the Defra/DECC Guidance and the Government Decisions on the CRC published in October 2009.

### **STW Overview of 2009/10**

In April 2009 we restructured our energy and carbon activities to create the Energy and Carbon Management Department to co-ordinate all aspects of implementation of our approaches to energy and climate change. The Department brings together those working on energy efficiency, renewable energy, utility management and climate change management. The Department works on a portfolio approach and we established Energy and Carbon Project boards for key parts of the business (see diagram below). This approach has brought a number of benefits in addition to those of increased focus on these as business issues and improved sharing of best practice across the company which have already been mentioned in the Overview, there has also been increased communication within businesses and ongoing searches for new and innovative solutions that would be more energy and carbon efficient.

At the same time as creating the new energy and Carbon Department we created the Energy & Carbon Steering Group, a sub committee of the Severn Trent Executive Committee, which meets monthly to oversee implementation of our energy and carbon management programmes. The Chief Executive, Finance Director, Customer Services Director, General Council, General Manager Energy and Carbon and General Manager Commercial Services are the members of this Committee and the programme boards report monthly to it.

## ENERGY AND CARBON MANAGEMENT

### Energy & Carbon Programme Steering Group



1) Water Energy and Carbon Management	2) Waste Water Energy and Carbon Management	3) Property Energy and Carbon Management	4) Transport Energy and Carbon Management
5) Energy and Carbon Management in Design Standards and Delivery	6) Renewable Energy Expansion	7) Energy Procurement, Hedging and Delivery	8) Energy & Carbon Monitoring, Reporting, MI and Target Setting
9) Energy & Carbon Future Visioning and Strategy Development	10) Energy & Carbon Outward Comms, Brand / Status	11) Renewable Energy Production	12) Carbon Reduction Commitment

The three key elements to our programme for reducing emissions explained in our Strategic Direction Statement remain and our performance this year shows how we are delivering on them. These elements are:

- Reducing our carbon emissions, particularly by reducing energy use which accounts for some 70% of our carbon emissions.
- Increasing our renewable energy generation up to 30% of electricity consumption by 2014/15, at present this is forecast as 194 GWh from the regulated and 83 GWh from the non-regulated business.
- Finding innovative ways to make further quality and environmental improvements without compromising carbon reductions.

In 2009 we achieved the Carbon Trust Standard (CTS) in recognition of our reduction in carbon emissions over the previous three years and our carbon management programme. Holding the CTS will also benefit us in the CRC league table as it forms up to 50% of the early action metrics.

Nearly half, 10,339 tonnes CO<sub>2</sub>e, of this year's reduction in CO<sub>2</sub>e emissions has come from greater energy efficiency. This 19 GWh efficiency has been delivered through a number of routes from investment in more energy efficient equipment, particularly more efficient pumps, to changes in operational practices.

In 2010 we generated 183 GWh of renewable energy within the regulated business, which is just over 20% of the electricity that we consumed. This is well ahead of the Defra vision that 20% of the energy consumed by water companies by 2020 should be from renewable sources. Our current renewable generation is from CHP using biogas and hydroelectricity. A broad range of initiatives have been delivered in the last 12 months to increase our renewable generation these include: improved management information & accountability, improved plant availability, improved sludge processing, more digestion of imported trade waste, digestion efficiency improvement, increased asset base.

In addition to increasing our generation from within the regulated business we have also pursued generation through non-regulated activities. In 2009/10 we started constructing our energy crop digestion plant on our Stoke Bardolph estate in Nottingham. This £15m project is the largest such commercial scheme of its kind in the UK. It is on target for completion in early summer 2010 and its output will equal some 1.6% of our consumption.

As discussed in *Changing Course*, one of the challenges we face over AMP5 is the increased treatment requirements to meet new environmental standards which are a limiting factor in our ability to reduce carbon emissions. We are however working to find innovative solutions to this problem. One example of where we are looking at upstream measures to prevent pollution rather than carbon intensive 'end of pipe' solutions is catchment management. By working with farmers we aim to influence land management using techniques to reduce discharge into water courses and consequently reduce the level of treatment required at our sewage treatment works. We are also working in partnership with the Environment Agency to explore options around the way sewage treatment discharge consents are set and enforced. The purpose of the project is to enable treatment to be varied with river conditions such as flow. The Environment Agency has recently enabled more flexibility in consents, for example, for removal of phosphorus.

### 2009/10 operational carbon emissions

This year Ofwat has required reporting of operational greenhouse gas emissions in a form compatible with Defra's September 2009 guidance. The detailed data are presented in the table below and are broken down into Scope 1, Scope 2 and Scope 3<sup>1</sup> and show the gross and net emissions.

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<sup>1</sup> The concepts of Scope 1, 2 and 3 emissions are drawn from the GHG Protocol (2001) and represent an internationally accepted approach:

- **Scope 1** emissions, or **direct emissions**, are GHG emissions released straight into the atmosphere from activities owned or controlled by the organisation. For example, emissions from the on-site combustion of fossil fuels, transport by owned or leased vehicles, processes carried out on site in owned or controlled equipment and fugitive emissions from air conditioning equipment as well as digesters are all classified as Scope 1 emissions.
- **Scope 2** emissions, or **indirect emissions**, are emissions released into the atmosphere due to the organisation's consumption of purchased electricity, heat, steam and cooling. Scope 2 emissions are a consequence of the organisation's operations, but occur at sources not owned or controlled by the company.
- **Scope 3** emissions, or **other indirect emissions**, are a consequence of the organisation's activities but occur at sources not owned or controlled and which are not classed as Scope 2 emissions. The Scope 3 emissions estimated in the Workbook are those which water companies recognise and have selected according to the GHG accounting and reporting principles indicated by Defra and DECC in their Guidance (relevance, completeness, consistency, transparency and accuracy). These include emissions due to business travel by means not owned or controlled by the organisation (e.g. travel by public transport or employees private vehicles) and all those emissions for which outsourced operators and sub-contractors are responsible while carrying out duties on the water company's behalf.

ITEM	TYPE	DESCRIPTOR	MEASUREMENT UNIT	EMISSIONS FACTOR	VALUE (TONNES CO <sub>2</sub> e)	CG
<b>A GROSS ANNUAL OPERATIONAL GHG EMISSIONS</b>						
1	Scope 1 emissions	Direct emissions from burning of fossil fuels (including natural gas CHP generated onsite)	Various	Specific EFs	13,751	A2
2		Process and fugitive emissions	Various	Specific EFs	145,873	A4
3		Transport: Company owned or leased vehicles	Various	Specific EFs	16,019	A1
4	Scope 2 emissions	Total grid electricity used by company (including CHP electricity purchased)	KWh	Grid EF	411,114	A1
5	Scope 3 emissions	Business travel on public transport and private vehicles used for company business	Various	Specific EFs	1,635	A2
6		Outsourced activities (if not included in Scope 1 or 2) Energy and other	Various	Specific EFs	1,497	C4
7		<b>Gross Operational Emissions</b>			<b>589,889</b>	<b>A2</b>
<b>B NET ANNUAL OPERATIONAL GHG EMISSIONS</b>						
8	Emissions reductions/ accounting	Exported renewables (generated onsite and exported)	KWh	Grid EF	-23,287	A1
9		Green Tariff electricity purchased	KWh	Grid EF	N/R	
10		<b>Net Operational Emissions</b>			<b>566,602</b>	<b>A2</b>
<b>C ANNUAL OPERATIONAL GHG EMISSION ACCORDING TO CRC DEFINITION</b>						
11		<b>Operational emissions according to CRC definition</b>	tCO <sub>2</sub> e	Specific EFs	<b>497,301</b>	<b>A1</b>

				Denominator	Value (kgCO <sub>2</sub> e/MI)		
<b>D ANNUAL OPERATIONAL GHG INTENSITY RATIO VALUES</b>							
12	Water Service	<b>Operational GHG emissions per MI of treated water</b>	kgCO <sub>2</sub> e/MI	JR table 10	<b>377</b>	<b>n/a</b>	
13	Sewerage Service	<b>Operational GHG emissions per MI of sewage treated</b>	kgCO <sub>2</sub> e/MI	JR table 14	<b>541</b>	<b>n/a</b>	

<b>E RENEWABLE ENERGY GENERATED</b>				<b>KWh</b>			
14		Total energy generated from sludge processing (both used onsite and exported)	KWh	N.a.	302,158,628	A1	
15		Total renewable energy generated from other sources (both used onsite and exported)	KWh	N.a.	5,796,100	A1	

<b>F RENEWABLE OBLIGATION CERTIFICATES</b>				<b>£000</b>			
16		Revenue from claimed ROCs (from renewables both used and exported) and Feed In Tariffs	£000 (3dp)	N.a.	6,786	A1	

The table shows how our emissions are dominated by grid electricity (Scope 2) so reinforcing our approach of focusing on energy efficiency. Process and fugitive emissions (Scope 1) from sludge treatment and management are our second largest direct emissions. Although these two are the main sources of emissions it does not mean that our other activities such as transport (Scope 3) are ignored which is why transport is one of the Boards in the programme approach outlined above.

The Defra reporting approach also shows the benefit of our renewable energy generation programme where we exported 43 GWh and saved some 23,000 tonnes CO<sub>2</sub>e. The other 140 GWh of renewable energy generated is not accounted for in the calculations as we supplied it to ourselves, so displacing the need for grid electricity; this is equivalent to displacing another 76,185 tonnes of CO<sub>2</sub>e.

### **Comparison of emissions with JR08 and JR09**

As noted above, there have been major changes to the UKWIR Workbook. This means that apart from the CRC emissions the values in the table above are not directly comparable with previous years.

When compared with last year our CRC emissions have reduced by 13,317 tonnes CO<sub>2</sub> (2.6%) in relation to 2008/09. This reduction has come about primarily due to a 19 GWh reduction in gross electricity consumption.

As the Workbook does not generate directly comparable outputs for the greenhouse gas emissions in the above table we looked at the source data to reveal if there have been any decreases/increases in actual consumption/production of emission sources. This shows that there have been real drops in energy consumption (19 GWh for gross electricity) and reductions in other emission sources such as sludge treatment and transport. There has also been an increase in biogas use so reducing emissions from this source.

Given the known changes in source data, we carried out some comparison of emissions by putting the JR08 and JR09 data through the JR10 Workbook gross emission sources, but it has to be recognised that this means 2009 emission factors and new calculations are being applied to the previous years' data. This approach indicates a 4.3% drop in total emissions of 26,590 tonnes CO<sub>2</sub>e this year and a drop of 49,750 tonnes CO<sub>2</sub>e (8%) since the first carbon reporting in JR08. Nearly half, 10,339 tonnes CO<sub>2</sub>e, of this year's reduction has come from greater energy efficiency but as noted above there have also been reductions in other emissions due to reductions in such things as sludge treatment and transport.

This year's increase in the production and use of biogas reduces our emissions and has enabled an increase in our renewable energy generation in the regulated business to 183 GWh (163 GWh in 2008/09). A broad range of initiatives have been delivered in the last 12 months to increase biogas production, increase plant availability and increase installed capacity, all of which have contributed to this increase in the volume of renewable energy produced.

### **Data collection and robustness**

Good quality data are important for any reporting and we have a high confidence in our data as is shown by the A1 and A2 confidence grades. All data are collected monthly from the accountable owners who use the methodologies described in their Process Descriptions. At the end of the year the annual total for each data point is signed off by a manager before entry into the Workbook. This year there has been a focus on ensuring

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that the processes for data collection for the CRC and associated evidence pack are robust and will comply with the CRC requirements and so our programme of AMR installation continued and we also started a programme of accredited meter reads.

Each data point has its own confidence grade following the JR guidance. Under the reporting process the confidence grade flows through to the Workbook and is allocated to the calculated emission. Completion of the emission tables means that data with different confidence grades are summated. To establish a single confidence grade for the summated data a weighted average confidence grade is calculated.

Confidence Grades are collected for each completed data point in the Workbook. The overall confidence grades for lines in the emission tables are assigned on the basis of the spread of the data across the confidence grades for that line, weighted by the contribution of the data point to the total.

The steps for calculating the overall confidence grades are.

- 1) Take the total CO<sub>2</sub>e emission from the workbook and calculate the percentage CO<sub>2</sub>e contribution of each line of data.
- 2) Based on the results of 1) above, calculate the total percentage contribution of each confidence grade. These are put into the table below (this example uses gross GHG emission data)

Accuracy Band	Reliability Band				Sum of Accuracy Band
	A	B	C	D	
1	75.21				75.21
2	7.12	1.60	0.00		8.73
3	0.00	0.01	0.00	0.00	0.01
4	15.76	0.01	0.28	0.00	16.05
5					0.00
6					0.00
X					0.00

- 3) Each Accuracy band range (Column B below) has a mid point (Column C below), Based on the mid point the percentage SUMPRODUCT of the data array can be calculated. In the example below equation would be as follows:  
=SUMPRODUCT(C2:C6,D2:D6)

Column	A	B	C	D	E
Row	Accuracy Band	Band Range (+/-)	Mid Point	% contribution to each grade	Product (C x D)
2	1	1%	0.5%	75.21	0.38
3	2	5%	3.0%	8.73	0.26
4	3	10%	7.5%	0.01	0.001
5	4	25%	17.5%	16.05	2.81
6	5	50%	37.5%	0	0
7	<b>Total</b>			<b>100</b>	<b>3.44</b>

- 4) The resultant percentage is used to calculate the overall accuracy band. In the example above the result was 3.44%, which would lie in Band 2 because it is within the Band 2 range of +/- 5%.
- 5) The data used in the above example are for the Gross operational greenhouse gas emissions which results in a weighted average confidence grade of A2.
- 6) The process is repeated for each line of data in the data table requiring an overall confidence grade.

As last year we have high confidence in our data. For CRC data, this is particularly important as under the CRC scheme we will be required to prove our energy consumption and hold the evidence for this and emission calculations.

The gross and net greenhouse gas emissions data reported in the table (pp19 & 49) have a slightly lower confidence grade because some of the additional data points have lower confidence grades than we have for our energy consumption. The main cause of the drop in weighted average is due to sludge volumes having a +/- 10% on the figures quoted. The effect of this is to reduce the overall grade to A2 but this still shows a very high degree of data robustness.

In previous years the emissions from contractors and consultants where they are within our offices or on our sites has been included as it was not practicable to calculate them separately. Emissions from these sources are therefore embedded within our Scope 2 emissions but we feel that given the scale of our emissions those directly related to contractors and consultants will not materially affect the Scope 2 figures.

### **Omissions and assumptions**

- Scope 1 & Scope 2 emissions

There are neither omissions of data presented in JR09 nor any additions as we believe our reporting on these emissions is relevant and complete. We are therefore confident of the year on year comparisons we have made.

- Scope 3 emissions

Ofwat's June Return guidance states that reported data should include emissions generated by all outsourced operations and contractors working for the appointed business in carrying out any part of its regulated activities. Ofwat recognises that some emissions within this definition may be burdensome to collect or immaterial to the overall reported emissions.

As in previous years we have included emissions from third party vehicles used for transferring sludge between sites and activities as these are significant in relation to our own transport emissions.

As part of continuous improvement in reporting emissions we have focused on developing and implementing systems to collect information for future years from the AMP5 contractors and consultants (See *Overview of future* below) rather than seeking to calculate from other contractors and consultants.

### **Intensity ratios**

The Workbook generates both total emissions and emissions per unit of output, so enabling comparisons to be made between companies and within a company between years. However, due to the changes in the Workbook we believe year on year

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comparison is not valid this year. Assuming no further major changes in the Workbook in future years valid comparisons will be possible.

There is a consensus within the industry that the figure to use for normalisation should be the total volume of waste water treated as reported to the Environment Agency, i.e. from all water treated, including surface water, not just the water returned based on water input. We reported this figure last year and this year Ofwat has required it as part of the JR10 submissions. If total volume of waste water treated is applied to the JR10 data, Operational GHG emissions per MI of sewage treated becomes 288 kg CO<sub>2</sub>e/MI, an improvement of 47% when compared to that in the summary table and the detailed table above (p49).

## **Overview of future work**

### **Strategy**

In our AMP5 business plan we stated our aim, as a minimum, for no net increase in operational greenhouse gas emissions from the regulated business over the next five years. The drive for carbon and energy efficiency therefore will continue in AMP5 and we will invest some £14.5m in delivering energy-driven "spend to save" projects. This should result in saving some 45 GWh per year by the end of the AMP and there are likely to be other energy savings as a result of other AMP5 projects. However, as previously discussed the energy savings we will make will all be offset by the emissions from increased quality and environmental requirements. Our recent report *Changing Course Delivering a sustainable future for the water industry in England and Wales* discusses why we believe that without significant changes to the policy and regulatory framework the sector does not look sustainable.

### **Carbon Reduction Commitment**

The CRC came into force on April 1<sup>st</sup> 2010 with 2010/11 being the footprint year and the year in which we will have to prepare to forecast for purchasing allowances in April 2011. So, ensuring compliance with the scheme and ensuring robust forecasting for the will continue to be a key focus for 2010/11. Our programme to install voluntary AMRs for electricity continues and we aim to have 95% (currently 60%) by volume coverage by end of March 2011. This will also mean we have a high level of AMR for the CRC early action metric so increasing our score, and potential position, in the CRC performance league table. This, allied with STW holding the CTS enhances the opportunity for the company to receive a bonus payment in October 2011 on the estimated £6m+ worth of allowances we will have to buy, rather than a penalty.

### **AMP5 capital investment and capturing carbon data**

In our business plan we presented forecasts on the greenhouse gas emission emissions of our proposed investment for both operational carbon and embodied carbon. We are implementing processes to measure our performance against these forecasts. It is important that we forecast the operational emissions from new investment as it will have an effect on CRC emissions and allowance requirements for the future years. As part of the calculations on embodied carbon we are implementing processes to collect the operational carbon emission data from the consultants and contractors working on the schemes. We therefore expect to be able to include these in our Scope 3 reporting in future years. The methodology for calculating the contractor and consultant emissions is based upon the EA calculator for calculating carbon emissions from construction projects.

The embodied data will enable us to develop a better understanding of how to calculate these emissions.

### **Renewable energy generation**

Our aim is to increase our renewable energy generation up to 30% of electricity consumption by 2014/15 and this will be done from both within and without the regulated business. Within the regulated business Ofwat has set us a target of 180 GWh per year energy generated from sludge processing. At present we forecast we will achieve 186 GWh per year from 2014/15 but this is subject to factors such as biogas availability from treatment processes.

Outside of the regulated business we forecast we will achieve 83 GWh per year generation and progress with crop to energy plant has already been discussed in this appendix (see Overview of 2009/10). Delivery of the full 83 GWh forecast is dependent on being able to finance the projects and other factors such as achieving planning permission and actual generation from the wind turbines (which of course can vary depending on the wind) but we are actively pursuing opportunities. We are approaching completion of the detailed assessment of 12 of our sites which have good potential for the installation of large wind turbines. Planning applications have been submitted for several of these and most of the others are approaching the final stages of gathering wind speed data and environmental assessment. We hope to secure permission to develop the first site later this year. The output from the full programme would be equal to 7% of our electricity consumption.

**Appendix 2 - Serviceability**

This appendix sets out our assessment of serviceability for each of the four asset categories:

1. Water infrastructure
2. Water non-infrastructure
3. Sewerage infrastructure
4. Sewerage non-infrastructure

Our analysis includes use of the Ofwat serviceability toolkit to inform serviceability performance. As Ofwat recognises, the toolkit does not include explanatory factors, such as extreme 2009/10 winter conditions, and how the number of observed mains bursts can be influenced by leak detection. In addition, the choice of reference year is critical, as it determines the reference level of serviceability and the control limits. Therefore the tool can only be a way of evaluating data rather than a definitive assessment of serviceability.

**1. Water Infrastructure**

**Mains Bursts**

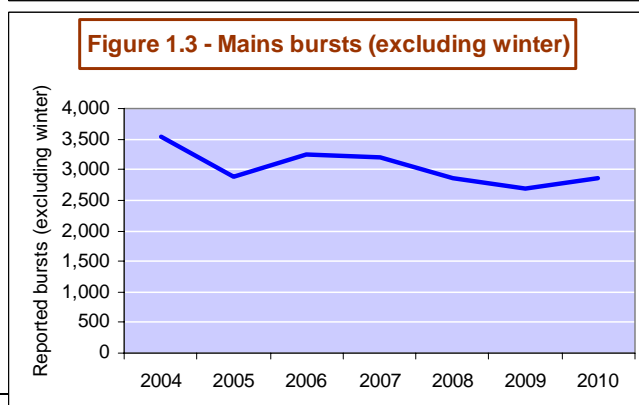
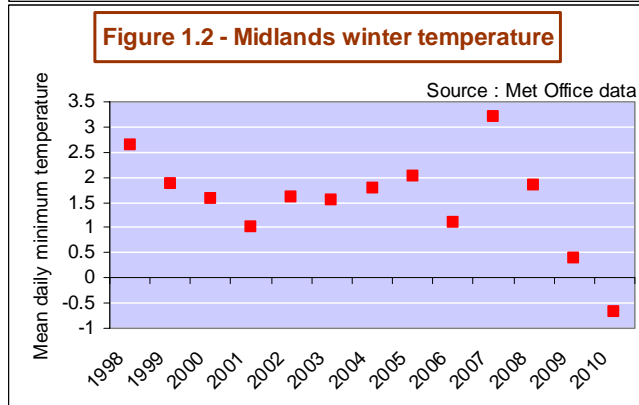
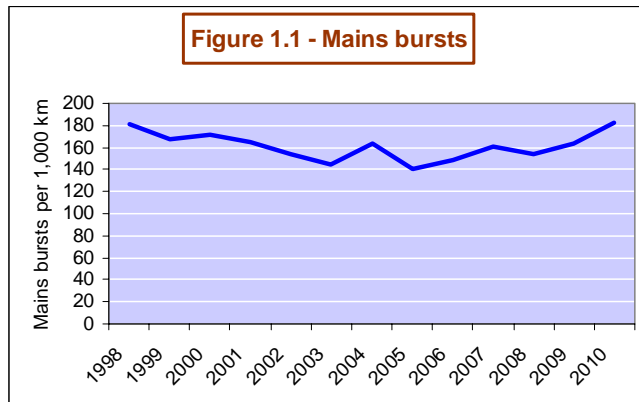
2009/10 shows an increase in mains bursts on JR09 (see Figure 1.1). This increase is outside reference level performance but within the envelope of historical data.

Figures for 2009/10 were significantly affected by what the Met Office has termed the worst winter for 30 years. There have been more continuous days with frost in 2009/10 than in any period over the last 10 years and minimum temperatures have been lower (see Figure 1.2). 2008/09 was the second coldest year.

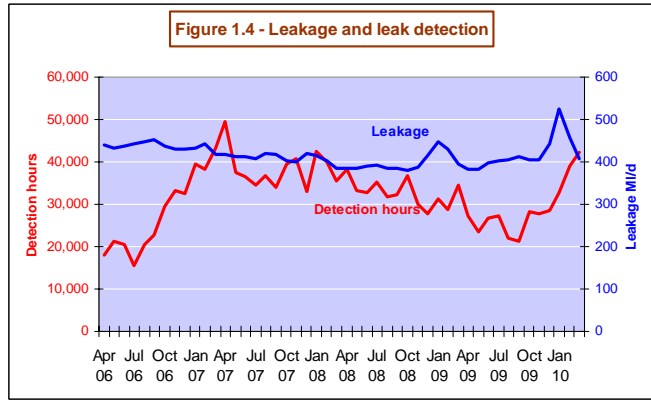
This is likely to have resulted in cooler water temperatures (especially for surface-water fed systems) more severe ground penetration of frost and greater pipe stress leading to more bursts, hence the significant increase in our 2009/10 burst trend.

This is also emphasised in Figure 1.3, where we can see that, excluding typical winter periods, our reported burst trend is flat over the past 5-6 years, the period for which where such data is available.

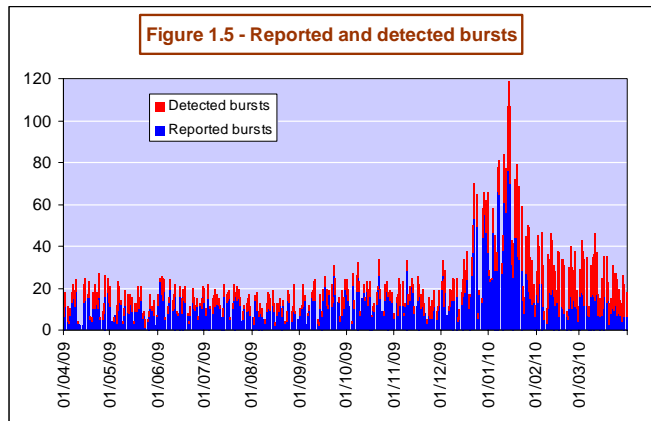
This severe winter also affected leakage performance shown by the DMA leakage representation in Figure



1.4 with a significantly more dramatic rise and fall seen in winter 2009/10 than in recent years. Our leakage efforts were significantly increased in response to this.



Analysis of burst causes over the winter in Figure 1.5 shows that customer reports, more so than leakage detection, were driving the burst trend in December/January which will have been caused by large amount of visible leakage following high numbers of bursts recorded post-frosts in this period. There is then a switch to leak-detected bursts as a result of our efforts to recover our leakage position towards year-end.

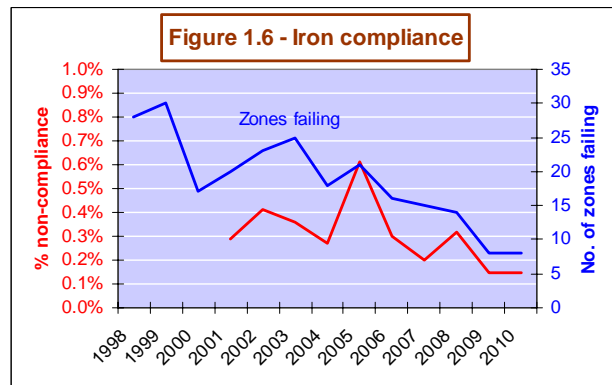


We believe that the above data shows that the burst rate for 2009/10 is driven by an exceptional winter period giving significantly higher than average burst rates but the underlying trend is stable.

**We have assessed this indicator as stable.**

**Zones failing for iron**

Mean Zonal Compliance (MZC) for iron at the tap is stable, with performance for 2009/10 the same as 2008/09.



The measure of number of zones failing iron at the tap has been improving, although this has levelled off in the past two years - see Figure 1.6. The past improvement may be representing the benefits of the AMP4 mains cleaning programme, in addition to previous process improvements at Bamford treatment works. Performance is better than the lower control limit but the low numbers of failures recorded means that sampling variations can lead to random fluctuations from year to year, upwards and downwards.

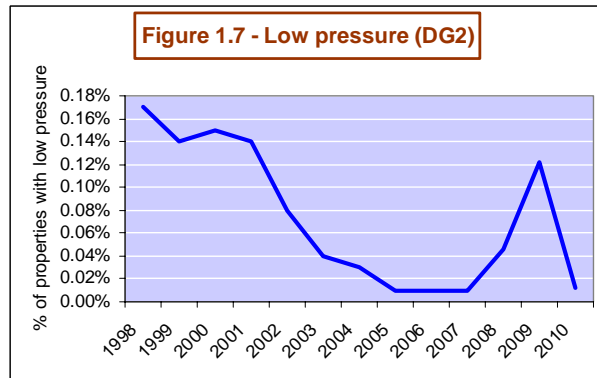
**Serviceability assessment for iron at the tap is stable.**

**DG2 Percentage of properties receiving low pressure**

Performance in 2009/10 has improved, as we have worked successfully to reduce our register to sub monitoring plan levels. The number is below the reference level. We have

removed properties by relatively equal proportions of operational solutions, capital solutions and improving the data that generated previous register additions.

For 2010/11 and the remainder of AMP5, we face the challenge of increasing register numbers due to greater identification through our AMP5 common supplies programme but we plan to maintain numbers within AMP5 control limits.

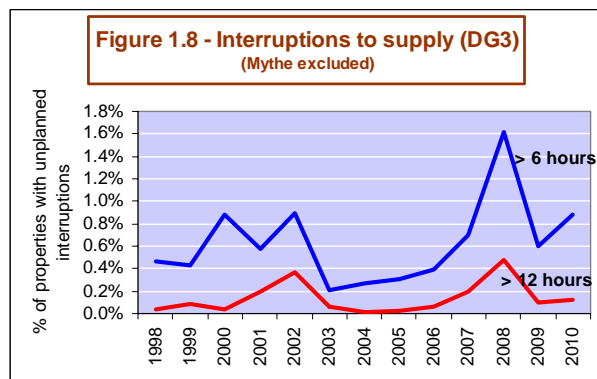


**Percentage of properties receiving low pressure is assessed as stable.**

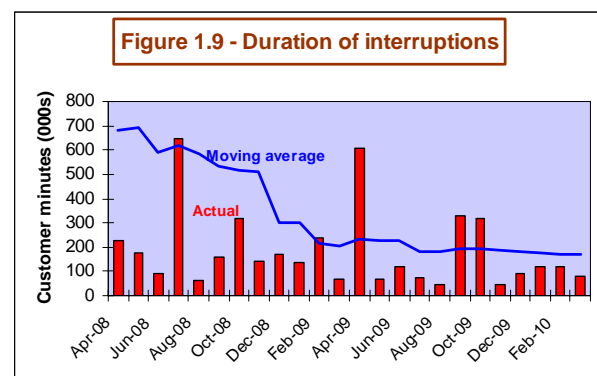
**DG3 Properties affected by unplanned interruptions**

DG3 performance, for >12h interruptions is slightly worse than 2008/09 and thus, moved away from reference level performance after significant improvement in 2008/09. This drop in performance is more significant in >6h interruptions.

We have continued to make operational improvements during 2009/10 including delivering a continuous supplies training programme to managers, operatives and leakage partners, identifying primary/secondary root causes of incidents and continuing to embed the culture of “continuous supplies” across the business e.g. we are developing a secondary DG3 service failure measure which will include the concept of “customer interrupted minutes”. We believe further work in this area will improve DG3 performance in 2010/11.



Although >6h and >12h performance has deteriorated, we have used the “customer interrupted minutes” metric [see Figure 9], which is a calculation of *number of customers\*minutes off supply*, to show that there is a general trend to lower duration of supply interruptions – the number, a moving annual average shows a drop of around 17% from 204,000 to 168,000 “customer interrupted minutes” during the period March 2009-March 2010, even when including our bigger one-off events.



Although performance is above the upper control limit we do not believe that there is any underlying water mains deterioration and we remain confident that our continuous supply programme and AMP5 investment plans (particularly valve maintenance and resilience projects) will deliver improved DG3 performance in AMP5.

This indicator remains classed as deteriorating in the JR10 Serviceability Assessment.

**Conclusions**

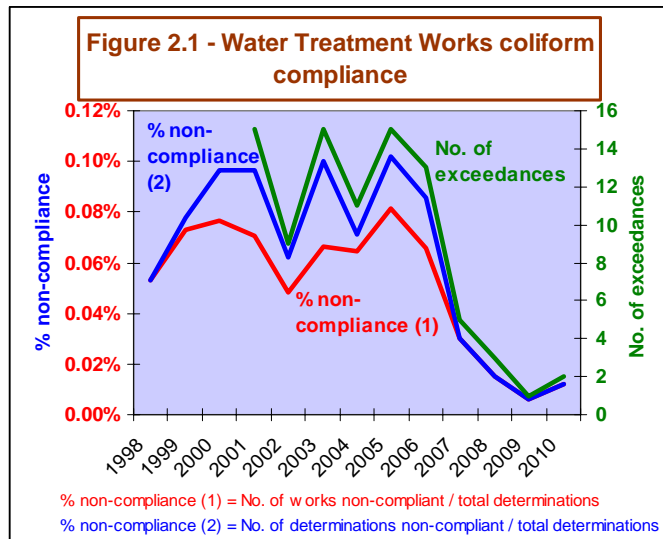
The asset performance indicator, mains bursts, is showing overall stable performance, despite exceptional performance in 2009/10 driven by an extreme (1 in 30) winter and heightened leakage activity. Although still stable, DG2 has improved significantly on JR09 and is now comfortably below monitoring plan targets. Iron non-compliance remains stable with high compliance levels. DG3 performance has slightly deteriorated but we have operational and capital-based plans in place to improve this in AMP5. However, we accept the need to improve our DG3 performance and move towards industry best practice in this area.

**In conclusion, overall water infrastructure serviceability is assessed as stable.**

**2. Water Non-Infrastructure**

**Water Treatment Works Coliform Non-compliance**

As shown in Figure 2.1, this measure has shown stability with JR10 performance very similar to JR09 and below the reference level. Only two exceedances of the coliform standard were recorded at WTW Finals. None of the exceedances were associated with asset maintenance.



**We have assessed this indicator as stable.**

**Possible enforcements due to exceedances of microbiological standards at WTWs**

This measure recorded 0 sites for 2009/10, in line with recent years' performance (0 works in 10 out of 13 years, 1 works in 3 years). This indicator has stabilised at optimised performance.

**We have assessed this indicator as stable.**

**Water Treatment Works Turbidity**

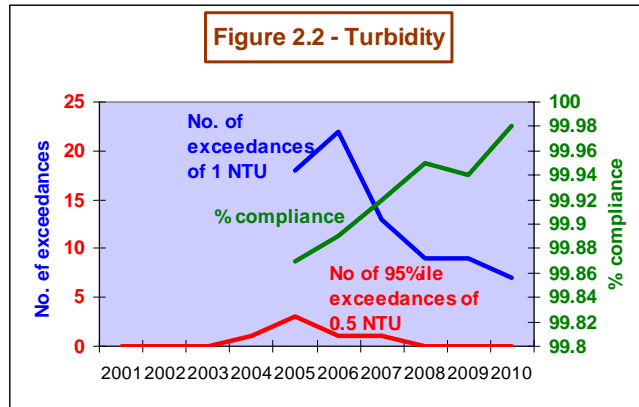
The turbidity measure shows for the same performance for 2008/09 and 2009/10 with no sites having a final turbidity 95%ile greater than 0.5NTU.

Since 2004 calendar year (for JR05), we sample at all our water treatment works for regulatory monitoring purposes. Previous to this, the turbidity samples taken were for operational purposes at monthly frequencies or less, and generally did not satisfy Ofwat

reporting requirements. It is not appropriate to use this data in the formal serviceability assessment.

This indicator has stabilised at optimum performance with no exceedances of 0.5NTU at the 95%ile at any of our sites.

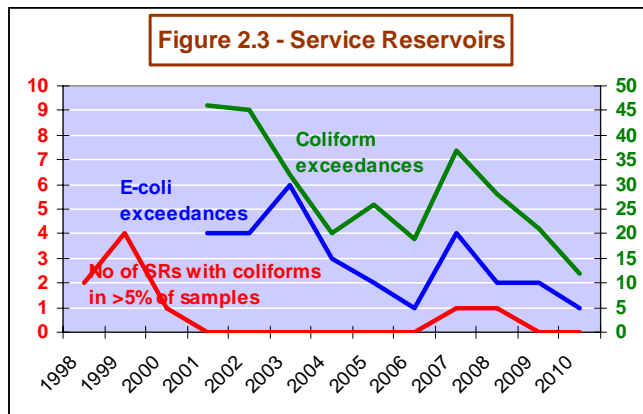
Although recent and current performance is good, Figure 2.2 supplementary data shows that we still experiencing around 6-10 failures of the regulatory 1NTU WTW Final standard per year.



**This indicator is assessed as stable.**

**Service Reservoir Coliform Compliance**

As in 2008/09, there were no contraventions of the coliform standard (coliforms detected in >5% of samples) from our 552 service reservoir **sampling points** during the report year. This indicator is stabilising at optimum levels of performance.



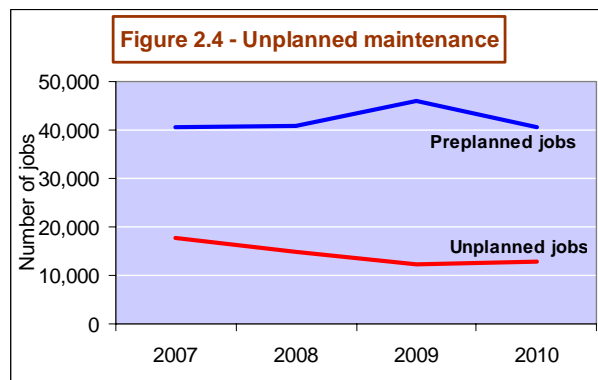
From Figure 16, it can be seen that coliform and *E-coli* non-compliance is broadly stable and generally moving away from higher levels recorded in JR01/JR02. In particular, we feel that *E-coli* non-compliance is probably the best water-quality-based indicator of structural integrity and DSR asset performance – this shows stable high levels of performance.

From Figure 16, it can be seen that coliform and *E-coli* non-compliance is broadly stable and generally moving away from higher levels recorded in JR01/JR02. In particular, we feel that *E-coli* non-compliance is probably the best water-quality-based indicator of structural integrity and DSR asset performance – this shows stable high levels of performance.

**Service reservoir coliform compliance is assessed as stable.**

**Unplanned maintenance**

For JR10 we have assessed overall unplanned and also, additionally, pre-planned maintenance as both measures' performance is linked. Both trends, from the limited data, are broadly stable, with no clear asset serviceability trends evident.



**The unplanned maintenance indicator is assessed as stable.**

**Conclusions**

In summary, the lead indicator, water treatment works coliform compliance, is stabilising at very low levels of non-compliance. There is very little room to improve for this indicator and it is vulnerable to small variations in WTW coliform fails per year due to the high level of non-compliance achieved. WTW Turbidity 95%ile is at highest achievable levels (0 WTW) while we have 0 service reservoirs recording coliforms in greater than 5% of samples and 0 WTWs with possible enforcements due to contraventions of the coliform standard. The unplanned maintenance indicator, now there is a trend over four years, is indicating a stable trend.

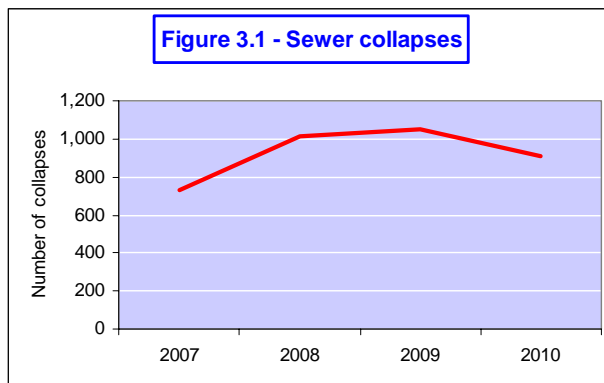
We believe the water quality-based indicators used in the non-infrastructure assessment are now of limited use because of the consistently high levels of compliance achieved. We would question their usage going forwards and seek to work with Ofwat to develop better non-infrastructure indicators.

In conclusion, water non-infrastructure serviceability is assessed as **stable**.

**3. Sewerage infrastructure**

**Collapses**

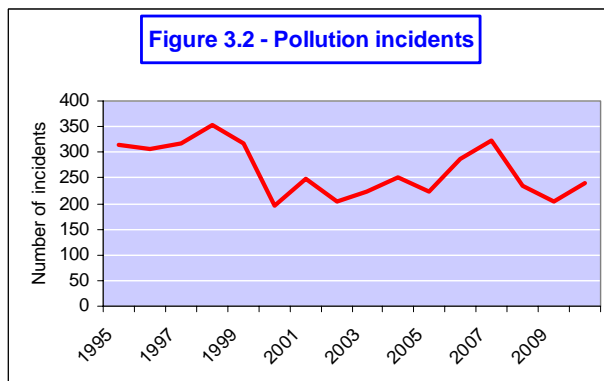
Through 2006/07 and 2007/08 we introduced an improved process for reporting sewer collapses and blockages. This produced data which was not comparable to previously reported sewer collapse data. This means that we have been unable to use sewer collapses alone as a reliable serviceability indicator. We have analysed the total number of repairs to the sewerage system which required excavation. This includes those necessary to repair collapses and to remove blockages which could not be cleared by rodding or jetting. The level of excavations is stable. This year, the number of reported collapses reduced from 1049 to 907.



**We have assessed this indicator as stable.**

**Pollution incidents**

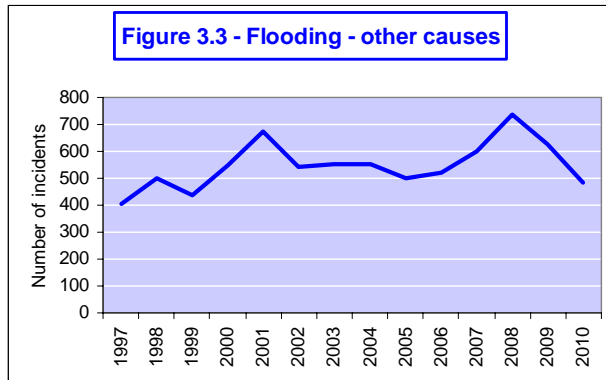
The serviceability measure of pollution incidents at CSOs and foul sewers has increased slightly following two consecutive years of reduction driven by our Pollution Action Plan. This increase is due to standardisation of the classification of events by the Environment Agency, which led to an increase of 38 in the number of recorded incidents. Despite this, the number is close to the AMP5 reference level



**We have assessed this indicator as stable.**

**Flooding – other causes**

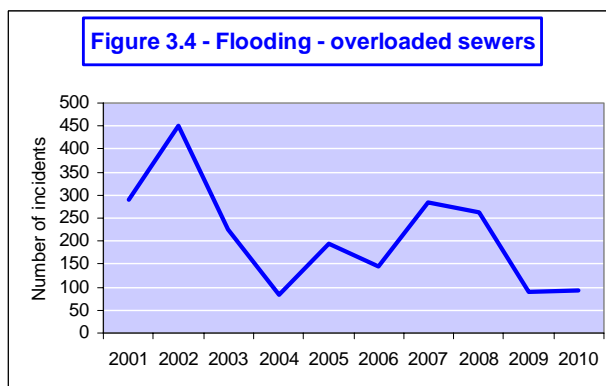
Flooding due to “other causes” is influenced by weather conditions and so is quite variable. This was evident in the JR08 figures which were affected by the July 2007 flooding. This year, floodings due to blockages have reduced. We believe our targeted proactive cleansing and repair work has contributed to this reduction, though the weather may also be a factor.



**We have assessed this indicator as stable.**

**Flooding – overloaded sewers**

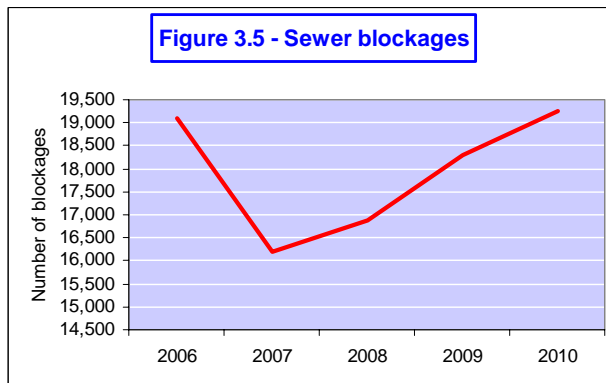
Flooding due to overloaded sewers remained at a low level and close to the AMP5 lower control limit. Although flooding from extreme weather is excluded, this measure is still affected by the weather which has been relatively dry this year.



**We have assessed this indicator as stable.**

**Blockages**

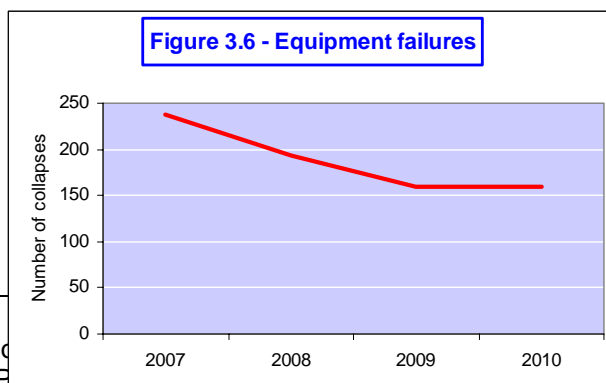
The number of blockages is a relatively new indicator. The level has increased in 2009/10 and is close to the reference level. Misuse of sewers appears to have contributed to the increase. We have responded to blockages more quickly and ensured that we clear the blockage more effectively. This has resulted in a reduction in the number of repeat blockages and reduced the number of internal floodings from blockages.



**We have assessed this indicator as marginal.**

**Equipment failures**

The number of equipment failures is also a relatively new indicator which has remained level in 2009/10.



**We have assessed this indicator as stable.**

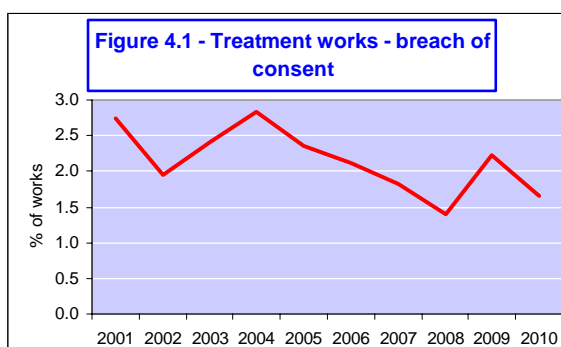
Our overall conclusion is that sewerage infrastructure serviceability is **stable**.

#### 4. Sewerage Non-infrastructure

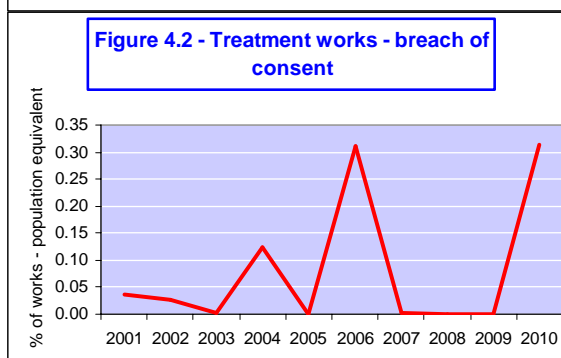
We view our performance against our serviceability measures this year as stable as it has been throughout AMP 4 on all three measures.

We have again maintained 100% compliance with the sludge recycling serviceability measure. We view the position as stable.

The percentage of sewage treatment works failing a numeric consent has fluctuated over the last few years and this year our performance is better than in 2008/09. We view the position as stable.



The percentage of total population equivalent (% p.e.) served by sewage treatment works in breach of WRA consent (LUT) is showing a large increase this year primarily due to the failure of Stratford STW. This works is now operating back within its consent.



There have been extensive investigations into the failures and, in response to this, we have put the plans below in place to ensure that our performance returns to the high levels shown throughout AMP4:

- Increased daily discussion focussed on works performance within our communication cells. Already implemented.
- Capturing action limit breaches centrally and utilising this information to produce a vulnerable site list, aiding our investment process. To be delivered mid 2010.
- Network resilience – Reducing the risk/ impact of toxic discharges on sewage treatment works. To be implemented 2010/ 2011.
- Pollution Prevention Plans. To be implemented 2010.
- Improved competency training of our staff – Delivery is for 2010 to 2011.

In addition we have also seen a slight downward trend in some of our sub-threshold measures. These can be found in table 16b. These have all been assessed as stable. However, the actions mentioned above will also enable us to improve our performance on the sub threshold measures.

Clearly the full benefits of these improvement measures will take time to be fully implemented and we currently have a small number of treatment works which are at

borderline status. The largest of these is Branton STW with a p.e. 21,114. All these works have contingency plans in place to reduce the risk of further sample failures. Plans include the procurement of additional treatment capacity, chemical dosing and increased site visits. Our performance next year may be impacted due to the time taken for the improvement plans to be implemented.

We acknowledge the spike but believe that our actions above will ensure that we continue to meet the highest standards in future years.

We are reviewing our internal reporting processes as part of the Pollution Prevention Plan. The impact of more accurate action limit breach reporting may lead to a short term deterioration in our performance against the percentage of sewage treatment works failing a numeric consent. This data will provide us with improved understanding of our vulnerable sites and hence will allow for more effective capital investment. The investment programme will ensure an improved serviceability score over the long term.

Our overall conclusion is that sewerage non-infrastructure serviceability is **stable**.