

Water Industry Commission’s response to RSE’s inquiry: ‘Facing up to Climate Change’

Introduction

The Water Industry Commission for Scotland (the Commission) welcomes the opportunity to contribute to the Royal Society of Edinburgh’s inquiry into how we can best respond to climate change in Scotland.

As the economic regulator of the water industry in Scotland, our main function is to set price limits that allow Scottish Water to fulfil its obligations to customers and the environment at the lowest reasonable overall cost.

We recognise our statutory obligations under the Climate Change (Scotland) Act to contribute to Scotland’s objectives of mitigating and adapting to climate change. In particular, we acknowledge the significant impact that Scottish Water – as the biggest consumer of energy in Scotland – has on emissions of greenhouse gases (GHGs). We are also aware of the impacts that extreme weather events may have on social and economic stability in Scotland and in a global context.

In our recent Final Determination of charges for the 2010-15 period¹ we paid special attention to ensuring Scottish Water is properly financed to address the challenges associated with climate change, including planning for the impact in future regulatory control periods. Going forward, we are committed to providing sufficient financing for Scottish Water to tackle this challenge in the most cost-effective manner. We are also developing our in-house policies to minimise the carbon footprint of our own operations.

The following sections set out more information on our response to our duties under the Climate Change (Scotland) Act.

1. ADDRESSING CLIMATE CHANGE

Investment

In our Strategic Review of Charges 2010-15, we allowed Scottish Water significant resources to reduce the impacts of its operations on climate change, including:

- £20 million for climate change mitigation measures through increased renewable energy generation and for a range of studies to establish more sustainable solutions going forward;
- £2 million to identify sustainable and cost-effective solutions to tackling cryptosporidium;
- £3 million a year to identify and operate sustainable land management solutions in water catchments;
- £2 million of investment and £1 million a year operating costs to pilot metering trials, which will potentially reduce customers’ water consumption;

¹ Our ‘Strategic Review of Charges 2010-15’ was published on 26 November 2009 and is available at our website www.watercommission.co.uk

- £5 million to incentivise developers to adopt water efficiency measures in new and refurbished housing; and
- £8 million of investment and £1 million a year of operating costs to encourage the development of 'Section 29E'² opportunities that will bring more sustainable solutions as well as reducing costs.

We also funded a number of studies, including research into:

- combined heat and power opportunities at Scottish Water's assets;
- opportunities to match levels of treatment to environmental conditions in order to minimise the use of energy and chemicals;
- sustainable treatment options, including wetlands and reed beds; and
- carbon management.

We are aware that there is inevitably a degree of uncertainty around the extent of activities that Scottish Water will need to carry out to address climate change issues. However, if new evidence justifies further investment to tackle climate change we are able to respond through existing regulatory processes such as 'interim determinations'. An interim determination allows adjustments to be made to the agreed level of financing to take account of material changes, out-with management control, in the assumptions made in setting prices.

Tackling leakage

Processing water is a carbon-intensive activity, producing on average 1.1 tonnes of CO₂/Mlitre for treatment and distribution³. In recent years we have worked extensively with Scottish Water to reduce the quantity of water that is processed and then wasted through leakage from the network. In 2005-06, leakage amounted to around 1,100 MI/day, well above the 'economic level of leakage' (ELL) - the point at which the cost of finding and repairing leaks exceeds the value of the water lost. In 2005 we set Scottish Water the target of achieving the ELL by 31 March 2014. We are also working with Scottish Water to better understand the factors that underpin its assessment of the ELL.

Scottish Water has since reduced its leakage significantly to 802 MI/d for 2008-09. It is expected to reduce it even further by 2014, to below 500 MI/d. This reduction also improves the security of supply, thus avoiding the need for new assets (with their implied CO₂ emissions).

Rural land use

Reducing pesticides, chemicals and organic pollution in areas where water is abstracted means that fewer treatment processes are required – with a resulting reduction in GHG emissions. The main impediment to this, however, is the ability of Scottish Water to implement active pollution control on a field by field basis. Work also needs to be done to increase stakeholders' awareness of the issues; it has been difficult in the past for Scottish Water to change local farming practices and community mindsets about practices that have been performed in the

² Section 29E of the Water Industry (Scotland) Act 2002 allows licensed suppliers who identify opportunities to reduce costs on the network (potentially reducing climate change impact) to share in the cost benefits with Scottish Water.

³ Scottish Water Carbon Footprint Report 2007 – 2008

same way for many years. Scottish Water is now resourced to identify specific sustainable solutions within five catchments which focus efforts on reducing treatment requirements by working with local people. We hope to build on the experience of these initial five catchments solutions in future regulatory control periods.

Understanding supply and demand

By looking carefully at activities relating to both the supply and demand of water and sewerage services it should be possible to more readily identify actions that have the potential to mitigate the overall impact on climate change.

For example, on the supply side, the way in which the scheme of water abstraction licences is arranged can help to mitigate environmental depletion and reduce alleviation cost. The location and treatment of raw water abstractions shape the carbon intensity of the water industry. We are currently working with Ofwat and the Environment Agency to identify an agreed measure of the value of water and to consider approaches to an abstraction license trading framework. The aim is to incentivise the use of less stressed catchments and to motivate licence holders to use water more efficiently – as a result cutting GHG emissions.

On the demand side, Consumer behaviour influences water demand, and efforts to improve water efficiency by customers can help reduce emissions. We are currently working with Waterwise to assess the feasibility of large-scale retrofitting of water efficient equipment for household consumers.

Working with other stakeholders

We work closely with other water sector regulators including the Scottish Environment Protection Agency (SEPA) and the Drinking Water Quality Regulator (DWQR). This helps ensure that the various regulators maintain a co-ordinated and informed approach to reducing the climate change impact of Scottish Water. Both SEPA and DWQR were closely involved in the development of Scottish Water's approach to climate change mitigation and adaptation for the 2010-15 regulatory control period. We also liaise with organisations such as Waterwatch, the Energy Saving Trust and Waterwise so that we can ascertain the views of customers and industry experts on approaches to tackling the climate change.

Through forums such as the 'Quality and Standards' process, which sets objectives for the water industry in each regulatory control period, we maintain a close dialogue with the Scottish Government and other stakeholders on issues relating to climate change. We also work closely with Ofwat, which is implementing similar measures to those we are currently progressing.

Incentives

Going forward, we believe that properly designed incentives are needed to change some aspects of the ways in which the water industry operates. In particular, our work in reviewing costs in the industry suggests that more could be done to create innovative and cost-effective solutions to improve environmental performance and mitigate the risks of climate change.

We believe that the existing regulatory framework may incentivise companies to favour higher cost capital investment solutions (with their high carbon implications) over lower cost and lower carbon operational solutions. The challenge is to identify incentives that will promote operating expenditure solutions that provide cost and environmental benefits. We are continuing to

develop our thinking in this area but believe it is possible to have incentives that promote more innovative solutions.

The retail competition framework that exists in Scotland has already brought environmental benefits. Licensed suppliers are incentivised to deliver bespoke solutions for non-household customers as the main way of attracting new customers from the incumbent company. Non-household customers are reducing their carbon footprints and environmental impacts by demanding more tailored services and by working with the retailers to identify where water savings can be made.

Through the promotion of 'Section 29E' opportunities, we are also promoting the development of more sustainable solutions, such as recycling waste water and storing water at customers' premises to ease peak demands on supplies.

2. REVIEWING REGULATION OF THE WATER INDUSTRY

We consider that the main hurdle to achieving a low carbon water industry is challenging the status quo. The industry has worked for many years in a relatively stable regulatory framework that focuses on efficiency of operations to guarantee security of supply at reduced costs. Companies have been able to achieve higher returns or, in the case of Scottish Water, reduce public expenditure through improved efficiency and better customer service.

This has proved successful in improving value for money for customers, increasing levels of service and allowing significant investment in improving the environmental performance of the industry. However, it has also promoted large, capital intensive solutions and reduced innovation. The emphasis on achieving low carbon solutions to meet the challenges of climate change will require changes to be made in the regulatory framework. We have begun the process of identifying the necessary changes and will consult later this year on our initial thinking.

For example, in Scotland, where a considerable amount of the population lives in rural areas, it may be appropriate to adopt small-scale, low energy water and wastewater treatment solutions. This would help to significantly reduce CO₂ emissions associated with current treatment processes in rural areas.

A risk adverse industry

It is important to recognise that Scottish Water faces increasing regulatory pressures relating to drinking water quality and environmental compliance, as well as having to comply with other legislation including the Flood and Water Management Bill and Climate Change Act. Such pressures may force the industry to focus on traditional, more carbon-intensive solutions in order to avoid any financial and regulatory risks attached to more innovative approaches.

As an example our Draft Determination challenged Scottish Water's proposals for investment at Loch Ryan. We were not convinced that there was sufficient evidence either that the project at Loch Ryan would deliver the required environmental benefits or that it was consistent with Scottish Water's duty in relation to sustainable development. Despite our concerns, the Scottish Government directed Scottish Water to proceed with work at Loch Ryan in order to avoid potential legal consequences through failing to meet EU Directives. In moving forward, consideration must be given to how to address potential conflicts between statutory duties on the water industry.

SUMMARY

In setting prices for Scottish Water for the 2010-15 period we have recognised the obligations placed on us to 'face up' to the impact of climate change. Scottish Water is financed to deliver a range of measures that will reduce their current impact on climate change and inform the requirements for future price review periods. This will involve working closely with other stakeholders to develop innovative approaches in areas such as land management, water efficiency and low carbon treatment solutions.

We believe that changes are required to the regulatory framework in Scotland to fully address the impact of climate change and the requirements of a low carbon future. Critically, we believe that incentives must be realigned to remove any bias to capital intensive, high energy, solutions. We are developing our thinking in this area and will begin the consultation process later this year. Our aim is to achieve an incentive framework that will help in the transformation towards a more environmentally sustainable industry.