Scottish Water

Always serving Scotland

Sustainability Report 2012

Doing the right thing for Scotland

Our vital role

Scottish Water is always serving Scotland, providing vital services which are essential to daily life. We continue to deliver excellent value for our customers.

We provide clean, safe and high quality drinking water to 2.4 million households and 152,000 business premises across Scotland. Every day we provide 1.3 billion litres of clear, fresh drinking water and take away 839 million litres of waste water, which we treat before returning to the environment.

We are delivering one of the largest investment programmes in the UK water industry during 2010-15. This is at a time when our average household charge is the lowest in Great Britain. In 2012/13 the average household charge in Scotland is £52 lower per annum than the average household charge in England and Wales.

The quality of our drinking water is at an all-time high and our investment is delivering the benefits Scotland needs and supporting thousands of construction jobs.

Your charges go to maintaining and improving:

29,762
miles of water pipes

31,477
miles of sewer pipes

1,863
waste water treatment works

266
water treatment works

1.3 billion
litres of high quality drinking water every day

Contents

Icon key

We have developed the 3 icons shown below to represent the environment, society and the economy. We have used the dark blue icons throughout this report to help you quickly identify the areas where our activities, detailed in the content, are having a positive impact.

Foreword

"We are committed to acting responsibly in how we deliver our services across Scotland, we believe this is the right thing to do for our customers, the environment and the economy."

Ronnie Mercer
Chair

Scottish Water is committed to building a sustainable business, providing affordable services vital to public health and daily life.

In this report we demonstrate how water and waste water services form the cornerstone of Scotland's sustainable society.

Providing wholesome water and safe sanitation for public health, protecting and enhancing the environment, and providing affordable services to support economic growth are the key purposes of Scottish Water. We support a sustainable society.

Our ambition is to become even more sustainable in the way we deliver our services. Over the last 10 years we have invested £5.5 billion to improve services, protect the environment and support the economy of Scotland. Our customers now enjoy the lowest average charge for water services in Great Britain.

We are stewards of many of Scotland's water resources which we use to supply high quality drinking water to our customers. We collect and treat society's waste water before returning it safely back to the environment.

Since 2002, we have made excellent progress to deliver clean, safe, high quality drinking water to 2.4 million households and more than 150,000 businesses in Scotland. Drinking water quality in Scotland is now the best ever.

We have significantly improved waste water services with substantial reductions in pollution. Waste water is no longer the main cause of reductions in the water quality of Scotland's bathing waters and aquatic environment.

We are now working with others, in partnership, to find more sustainable ways to protect the environment such as preventing pollutants entering our systems and watercourses. This reduces environmental risk without energy-intense treatment.

Investment in improved treatment and services often requires more electricity. About 6% of our electricity demand is met through our own renewables. We will expand this and have the potential to generate more electricity than we require. We are pleased to report that over the past 5 years we have reduced our operational carbon emissions by about 10%.This is despite continued investment to enhance services which can impact on our carbon emissions.

A comprehensive replacement, repair and improvement programme at 23 water treatment works, which included work on 550 miles of water pipes, has supported a 44% reduction in leakage. This is helping to conserve Scotland's water resources, reduce power use, carbon emissions and the cost being passed onto customers.

Our Volunteering Programme is helping to develop skills and teamwork among our employees, while strengthening and sustaining the important relationships between Scottish Water and the communities we serve.

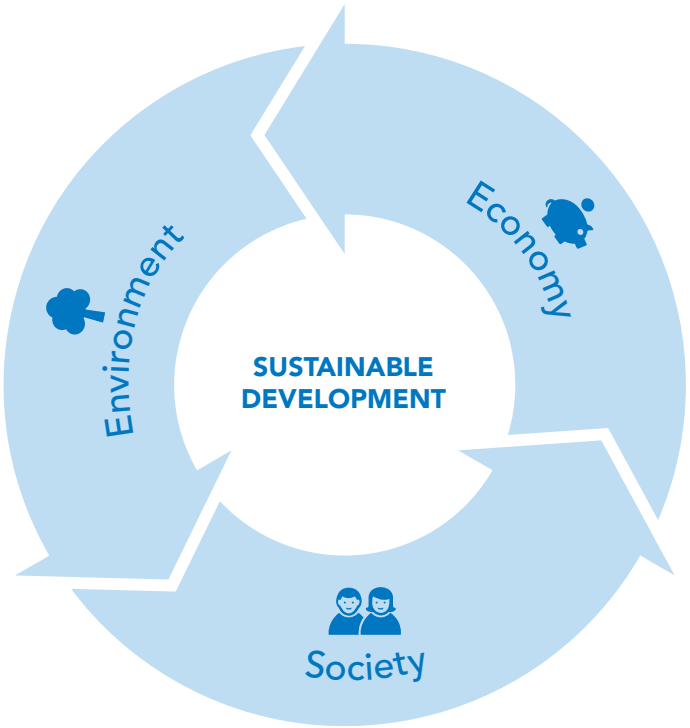
This is the right thing for our customers, the economy and Scotland's environment.

Supporting a sustainable society

Our services form the cornerstone of a sustainable Scotland – supporting the three pillars of sustainable development:

- Society – we provide vital public health protection through affordable access to safe, wholesome drinking water and safe sanitation.
- Environment – we steward the sustainable use of many of Scotland's water resources and catchments, and safely treat and return society's waste water to the environment.
- Economy – we provide efficient, effective services and capacity for growth, while keeping charges as low as possible and affordable for our customers.

Principles of Sustainable Development



We have duties to provide wholesome water to our customers and to treat and safely return the waste water from household and business premises along with surface water (rainwater run-off from hard surfaces such as roads and roofs) to the natural environment without causing pollution, and to ensure our assets can accommodate the need for future growth.

The key challenge is to ensure that the way in which we deliver these services is sustainable. Being more sustainable requires new thinking and approaches, balancing the demands of society, the environment and the economy.

Our clear, fresh drinking water is among the best in the world. Coupled with a waste water service that has delivered massive and sustained improvements to the environment over the past 10 years, this demonstrates our continued efforts to support a sustainable society.

Scotland's water environment is a valuable resource. In delivering our water and waste water services we aim to be effective and efficient on behalf of customers. This is evident through responsible stewardship of water resources – driving leakage reduction and promoting sustainable catchment management. We aim to be resource efficient – minimising reliance on chemicals and energy – and to recover value from waste.

We continue to explore innovative ways to help deliver our services in a sustainable way, while delivering best value for money for our customers. In 2012/13 our customers can enjoy the lowest average household charges for water and waste water services in Great Britain.

As we continue to drive efficiencies through the business, our customers can be reassured that we are delivering more for less as we fulfil our Vision of becoming Scotland's most valued and trusted business, one that we can all be proud of.

We continue to explore innovative ways to help deliver our services in a sustainable way, while delivering best value for money for our customers.

We are pursuing a number of key themes to provide your services in a way that balances public health, life in the community, environmental protection and cost, including:

- championing prevention rather than cure – stopping pollution at source.
- delivering a 'low carbon' service resilient to climate change.
- developing renewable power and efficient use of energy.
- investing in education, community involvement and volunteering.
- making the right choices for the future.

Assets we deliver today will operate for decades. We have built sustainability criteria, such as carbon, into investment planning to help us make sustainable choices for future generations. Our challenge over the next 25 years is to continue our progress towards being increasingly sustainable in the way we deliver your water and waste water services.

Loch Tummel, Perthshire

Our challenge over the next 25 years is to continue our progress towards being increasingly sustainable in the way we deliver your water and waste water services.

Delivering investment sustainably

We are focused on investing in ways that support a sustainable water industry.

We outline elsewhere in this report how we take carbon into account, but there is more we can do to underpin our commitment to sustainability.

In Glasgow we have a long-term strategic plan to deliver sustained improvements to the drainage and water environment to benefit the people and environment of Glasgow.

The Metropolitan Glasgow Strategic Drainage Partnership brings together local authorities, the ports authority, Scottish Government, Scottish Enterprise, Scottish Environment Protection Agency (SEPA) and Scottish Water to deliver integrated improvements to the city's water environment. Full details can be found at www.mgsdp.org

Our role in this partnership is to focus on the waste water and surface water drainage. We will invest about £250 million in the next few years to reduce the risk of flooding and pollution to our customers and substantially improve urban watercourses – improving the quality of life for people in Glasgow and allowing the city to grow and prosper.

River Clyde, Glasgow

Such major infrastructure work would typically generate substantial quantities of waste material, require significant resources and cause disruption to the lives of our customers.

The Glasgow waste water improvements will be delivered in a different and more sustainable way across the 5 drainage catchments that serve the city. Extensive strategic studies have identified the most effective and efficient means to deliver service and environmental improvements.

We are using lean construction methods including a rolling programme across sites to enable more sustainable delivery. This will:

- Reduce the machinery and equipment required – cutting cost and carbon.
- Adopt innovative excavation – a vacuum excavator uses compressed air to carve out trenches, improving health and safety by keeping operators out of trenches; reduces risk of striking other utilities infrastructure (gas, electricity); and increases the speed of delivery to reduce disruption.
- Reduce waste by re-using excavated spoil – in a rolling programme we can excavate spoil at one site and re-use it as backfill at another site, reducing vehicle journeys and landfilled waste.
- Use pre-cast sewer chambers – installing ready-built structures reduces journeys, waste arising and disruption.

These strategic measures will mean a win for Glasgow's water environment, a win for customers through reduced flooding and disruption, and a win for sustainability. This approach is being adopted elsewhere in our investment programme.

Natural heritage

We contribute to biodiversity on land through protection of drinking water sources and within streams, rivers and seas by striving to meet environmental objectives – working with regulators, advisory bodies and others to invest for the best benefit.

We work with Scottish National Heritage, both locally and strategically, to protect biodiversity and will continue to build partnerships with organisations such as The Royal Society for the Protection of Birds (RSPB), the Marine Conservation Society, Scottish Wildlife Trust and others.

Much of our investment in water resources and waste water has direct biodiversity benefit, for example in meeting the required standards in Special Areas of Conservation and other protected sites.

Just as important is ensuring that the way we work also protects biodiversity. We have developed guidance and management procedures with Scottish Natural Heritage to protect and, where possible, enhance the environment.

At a local level we carefully screen and manage projects for new developments to ensure that local biodiversity and designated sites are taken into account at an early stage and throughout the projects.

Enhancing our environment

An example of our action on natural heritage is the award-winning Glencorse Water Treatment Works, near Edinburgh, the largest grass-roofed building in Scotland. The grass roof was created using a variety of native grasses and flowers to provide excellent biodiversity and to fit naturally with the surrounding landscape of the Pentland Hills Regional Park.

Enhancing biodiversity

Scottish Water has been involved for many years in a project to re-introduce vendace (a rare freshwater fish that has been extinct in Scotland since the 1960s). We work with other agencies to select and provide refuge for populations of vendace within our operational reservoirs.

We are committed to building on the environmental improvements we have achieved through the appropriate investment and operational management of our assets. Our actions on biodiversity are focused on both a broad scale and on a local level to the benefit of our customers and Scotland.

Glencorse Water Treatment Works, near Edinburgh

Education

Sustainability depends a great deal on informing and learning – and at Scottish Water we are keen to engage with our customers and our own employees.

Through our education programme and innovative educational partnerships, we are raising awareness of the quality services we provide, the value of water in everyday life to public health, and the measures we take to help to protect the natural environment.

We want to share our knowledge and expertise on many areas of our business with both today's customers and, crucially, with future generations. This includes topics such as water and waste water treatment, engineering, science, water efficiency, renewables, innovation and career opportunities in the water industry.

Our fun and interactive Water Ways exhibit in Glasgow Science Centre has so far brought the messages about water's journey from source to tap to more than 300,000 adults and children.

As a major employer in Scotland, we are committed to developing our employees, achieving record levels of employee engagement.

We have a passion for creating opportunities for young people to learn and build the skills, knowledge, experience and qualifications that will help them become the next generation of water industry experts, enabling them to take the industry forward in Scotland knowledgeably and with confidence.

A total of 53 modern apprentices and 30 graduates have joined us over the past 2 years and we continue to support work experience for secondary school pupils across Scotland and offer internships for higher education students.

Apprentices at TOM, Airdrie

Through work with academic partners and skills bodies, the qualifications, modern apprenticeship frameworks and opportunities within the water industry in Scotland are increasing.

Recognition of the valued work of our educational initiatives came at the Glasgow Business Awards 2011, when Scottish Water won the award for Best Employer of a Student or Graduate.

Water Ways exhibit, Glasgow Science Centre

Volunteering

Scottish Water's Volunteering Programme, introduced in Spring 2011, is proving to be a major success – highly rated by employees and praised by the organisations and locals communities who have benefited from our programme.

Employee volunteering aims to develop employees' skills, increase engagement levels, and encourage greater teamwork whilst strengthening the relationships we have with local communities.

And we are pleased to report that it is working, with our employees already committing about 4,000 working hours to doing the right thing for the benefit of over 80 not-for-profit organisations and charities the length and breadth of Scotland.

We support employee volunteering in the following areas: education, environment, local community volunteering and WaterAid – Scottish Water's charity of choice.

Each employee is entitled to a minimum of 2 days of paid leave per year to volunteer. With a network of charities now formed, we offer a wide choice of opportunities to carry out volunteering in local areas across Scotland.

This has led to an impressive range of activities including:

- meet the expert "Dirt Weekend" at Glasgow's Science Centre with an exhibit showing visitors how the treatment process provides customers with clear, fresh drinking water.
- a number of beach cleans across Scotland.
- garden furniture spruce up in the Ayr Hospice gardens.
- contributing to the WaterAid speaker network – providing speakers on WaterAid's work to a wide range of groups such as schools, universities, Rotary Clubs, church groups etc.

Other volunteers have enthusiastically tackled painting projects, Ranger duties at a country park, caring for rescued greyhounds and delivering leaflets to publicise charity events.

Overwhelming feedback from employees taking part in the programme has been positive, describing their experiences as "humbling," "valuable" and "fantastic".

It is evident that our volunteers enjoy doing something different from their day-to-day duties with Scottish Water in the knowledge that their efforts benefit many people in the community in need of help.

Dirt Weekend, Glasgow Science Centre

Beach clean, Leven

Preventing pollution at source

Scottish Water has a duty to provide wholesome water to customers. Certain activities may affect 'raw' water sources in areas where we abstract for drinking water.

The types of substances that can give rise to drinking water quality problems are:

- pesticides.
- elevated levels of nutrients.
- increased sediment in raw waters.
- elevated concentrations of metals.
- increased loads of bacteria and hydrocarbons.
- increased colour levels.

In the past water companies have tended to respond to pollution events or deteriorating quality through investment in more energy intensive treatment rather than addressing the long term impact at source.

We have now developed a major Sustainable Land Management (SLM) project to try to improve water quality more sustainably, and therefore avoid additional, resource intensive treatments. Helping prevent pollutants being released, rather than trying to clean up the problems they pose, is embedded throughout our activities.

Such an approach will help us comply with drinking water standards where treatment is not technically feasible, or where the cost would place significant burdens on customers. As well as helping improve drinking water quality, there are significant benefits to wider environmental quality.

The project focuses on 2 areas. We have appointed 5 catchment liaison officers to inspect catchments and work with landowners, farmers and regulators across Scotland. Extensive monitoring and catchment surveys enable them to understand the risks to water quality. They then work in partnership with land managers to promote actions to improve and protect drinking water sources.

In addition, we have put in place an SLM Incentive Scheme to finance practical measures in 6 drinking water catchments. These catchments represent a range of concerns for drinking water protection i.e. reducing pesticides in water, reducing nutrient loadings, reducing colour inputs and protection of a groundwater source.

The SLM scheme supports delivery of practical solutions to improve drinking water quality. Importantly, this scheme will only finance measures to protect drinking water sources beyond a landowner's requirements to comply with their regulatory obligations.

Sustainable Land Management Incentive Scheme – drinking water catchments

Farming activity

Working through our Catchment Liaison Officers, this scheme helps landowners deliver a range of measures. These include fencing watercourses, providing livestock watering areas, installing safe areas for pesticide management and even funding pesticide substitutions where more expensive but safer chemicals are available. It will also fund management plans to help farmers and landowners make changes to their land to improve drinking water quality.

Through this, we are investing in more sustainable ways to improve water quality and the environment in a way that will avoid future more expensive treatment options.

For information about Sustainable Land Management:

visit **www.scottishwater.co.uk/protectdwsources**

or email **protectdwsources@scottishwater.co.uk**

River Ugie, Aberdeenshire

Carbon and renewables

Scottish Water has an ambitious carbon agenda and our consistent, transparent, accredited approach to carbon accounting helps us to contribute to Scotland's carbon reduction goals.

Since 2002 we have invested significantly to bring our services in line with what our customers, regulators and Scotland expects. Major investment programmes have overhauled our asset base to bring substantial improvements to water quality, service levels and the environment.

Much of this investment led to an increase in energy and chemical use, leading to an increasing operational carbon footprint (CFP). We are tackling head-on the challenge of reducing our greenhouse gas (GHG) emissions and becoming more resilient overall in our operations.

In Scotland, the GHG emissions associated with providing water and waste water services to a household is less than 200kg per annum. This is the equivalent of:

- ¾ mile per day in an average family car[1], or
- running a fridge freezer for a year[2], or
- less than a pint of milk per household per day[1].

Whilst this may seem small, it is still very important – we have both a duty and an opportunity to reduce carbon, but in ways that balance the quality, service and value expectations of our customers.

Our strategy promotes action on carbon across all areas of our business.

A key opportunity is in finding more sustainable ways of providing water and waste water services to avoid future energy demand. This is evident in our work on sustainable land management and source control of pollutants – finding ways to avoid the need for treatment by preventing substances entering watercourses.

As part of a continued focus on leakage management and energy efficiency, we are trialling more sustainable, passive treatment technologies, working in partnership with SEPA.

Solar (photo voltaic) panel

Our renewable generation capacity is increasing. Scottish Water currently consumes about 450GWh (gigawatt hours) of electricity per annum. We generate about 6% of our annual electricity demand through renewables, predominantly small-scale hydro schemes. In the current regulatory investment programme, 2010-15, we are delivering a further 25GWh of small-scale hydro schemes. This equates to around 11,000 tonnes of carbon in grid electricity use, and we anticipate this to be in place by 2015/16.

With potential energy in our water networks and organic sludges, there are opportunities across a suite of renewable technologies – wind, small scale hydro, solar (photo voltaic) and anaerobic digestion of organic waste, and these are being developed for our next investment plan.

Taken together with private investment (wind farms) on our land, our assets could be used to become the highest provider of renewable energy among UK water utilities.

There remain uncertainties on renewables and opportunities will be scrutinised carefully to ensure they deliver benefit for our customers, and we will update on progress and the impact on carbon in future reports.

[1] Source: How Bad are Bananas? The Carbon Footprint of Everything; Mike Berners-Lee
[2] Source: calculated from data available on www.appliancesonline.co.uk

Energy

	2009/10	2010/11	2011/12
Financial indicators (£k)			
Total energy expenditure	38,702	40,975	37,421
CRC gross expenditure (2011 onwards)	n/a	n/a	2,684
Expenditure on official business travel	7,252	7,636	8,812
Non-financial indicators (kWh)			
Electricity (purchased)	460,763,340	440,735,205	443,243,018
Renewable energy (generated)	4,615,382	8,164,511	9,039,714
Gas	12,239,827	15,301,956	10,604,587
Other	n/a	n/a	n/a

2011/12 financial figure includes Business Stream who were unable to provide comparatives for the previous years.

Carbon Reduction Commitment Energy Efficiency Scheme (CRC) expenditure is an estimate, final figure was unavailable at time of writing.

Non-financial figures exclude Business Stream and Horizons. Renewable energy figures include hydro electricity and CHP power and heat; except 2009/10 which is hydro only.

The high gas consumption in 2010/11 was due to the need for more heating as a result of the particularly long hard winter.

Likewise the low gas consumption in 2011/12 was due to the particularly mild winter.

This is an example of how our energy use, and therefore our carbon footprint, can be affected by weather.

Overview of direct impacts

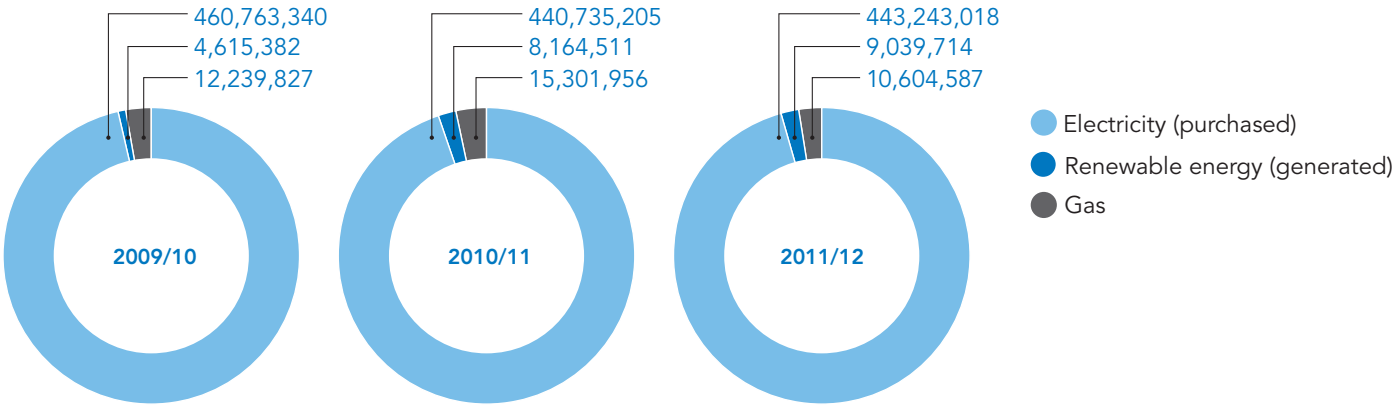
Over the last 10 years the energy intensity of our services increased, particularly between 2002 and 2006 – driven by investment in environmental and drinking water quality.

More recently, energy consumption has been falling slightly by reducing our demand for energy, implementing energy efficiency, reducing leakage and investing in renewable energy generation.

Overview of indirect impacts

We are working with stakeholders such as the Energy Saving Trust, Building Standards and Waterwise to help customers maximise the benefits of water efficiency by understanding the knock-on effects of not wasting heated water. 25% of the average household energy bill is used for heating water (showers, kettles, washing dishes etc) and therefore there is a demonstrable link between reducing this water use and saving money on energy bills.

Figure 5: Energy consumption (kWh)



Waste

		2011/12
Financial indicators (£k)		
Total disposal cost		**9,314**
Hazardous waste	Total	*
Non hazardous waste	Landfill	3,665
	Reused/recycled	5,164
	Incinerated/energy from waste	485
Non-financial indicators (tonnes)		
Total waste		
Hazardous waste	Total	24
Non hazardous waste	Landfill	84,009
	Reused/recycled	200,811
	Incinerated/energy from waste	41

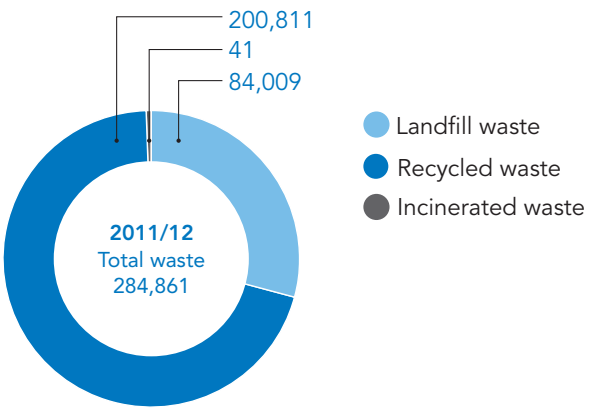
*The costs of disposal of hazardous waste are not recorded separately and as such are included in total waste disposal costs. Construction waste is excluded from financial figures because these cannot be split out from construction costs.

Disposal costs are based on total disposal costs for various categories of waste allocated by the method of disposal by volume. The boundaries for the financial data and the non-financial data are therefore not the same due to data availability.

The non-financial indicator includes data on construction and demolition waste, operational/site waste, process waste and office waste.

The waste tonnages reported (excluding office waste) come from contractors' data returns. Where data is only available as a volume, conversion factors are used to convert the value from volume to weight. Weight of office waste is unavailable; therefore it is estimated from the bin capacity and number of uplifts.

Figure 6: Non hazardous waste volumes and disposal routes (tonnes)



Construction and demolition waste includes waste that comes from capital projects operated by third party contractors.

Previous years' figures are compiled differently and have therefore been omitted as they are not comparable.

Overview of direct impacts

The waste contracts for a number of our offices have been reviewed over the past 18 months, resulting in an increased number of sites where recycling occurs. In order to promote and maximise recycling at the larger offices, individual waste bins at each desk have been replaced by centrally located bins for general waste and recycling (paper, cans, bottles).

Overview of indirect impacts

Our Construction Delivery Partners (CDP) are required to submit monthly waste returns based on the Waste and Resources Action Programme (WRAP) template. Under our Frontier initiative, a target was set from April 2011 for the water infrastructure CDP to divert from landfill 95% of site wastes (e.g. waste from digging trenches). The other CDP have minimal trench waste and the majority are reporting diversion from landfill rates of 90% and over. This target is now being reviewed upwards and rolled out to other CDP.

The waste contracts for a number of our offices have been reviewed over the past 18 months, resulting in an increased number of sites where recycling occurs.

Water

		2009/10	2010/11	2011/12
Financial indicators (£k)				
Water supply costs		4,253	2,666	3,622
Non-financial indicators (m^3)				
Water consumption	Supplied	5,310,750	3,356,612	4,521,487
	Abstracted	–	–	–

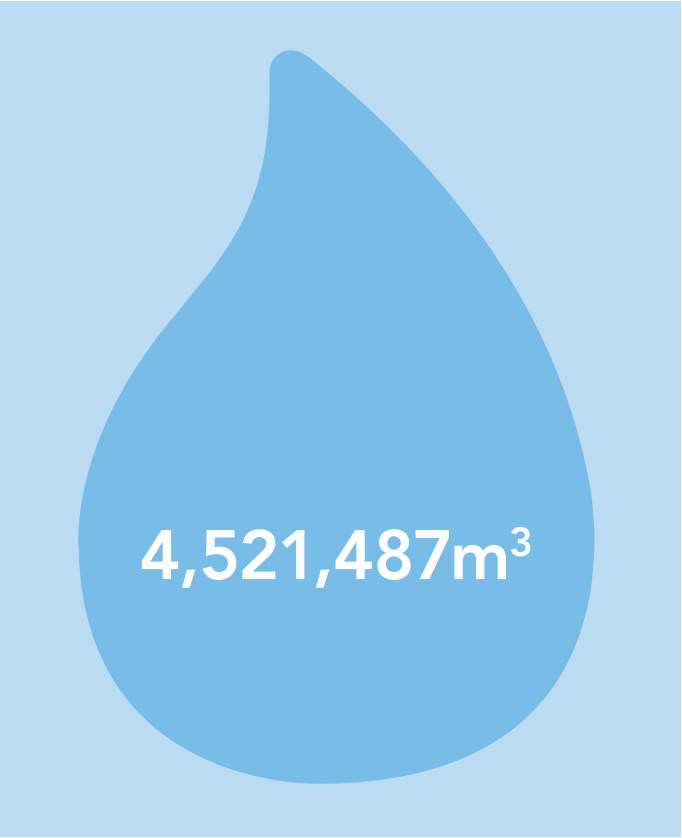
The financial indicator is an indicative estimate of what the costs would be based on the wholesale scheme of charges if Scottish Water sites were to be billed for water usage in the same way as other business premises.

Water figures relate to the water Scottish Water consumes itself, not the water we supply to our customers. The large fluctuations in volumes are more due to changes in methodology of the calculations used in the annual return rather than actual changes in the flows.

Overview of direct impacts

We are currently undertaking audits of our buildings and assets to identify any areas where we can reduce consumption.

Water usage 2011/12



Overview of indirect impacts

We are committed to playing a positive role in the lives and education of our customers now and in future generations.

Our 'water efficient living' campaign continues to encourage our customers to use water wisely in and around their homes. We work on innovative opportunities and partnerships with other water companies and relevant organisations to promote how customers can do this, which will not only help them save water, but will also help them save energy and reduce their carbon footprint.

Our education programme includes a range of online Scottish Water-related activities, including water efficiency, which have been developed for use with primary school age audiences.

We are also committed to working with key stakeholders, developers and policy makers to help them understand the importance of more water efficient practices.

Our 'water efficient living' campaign continues to encourage our customers to use water wisely in and around their homes.

How our industry is run

The Scottish Parliament

Holds Scottish Water and Ministers to account and regularly calls executives to its committees to give progress updates.

Scottish Ministers

Set the objectives for Scottish Water and appoint the Chair and Non-executive Members.

Scottish Water

Responsible for providing water and waste water services to household customers and wholesale Licensed Providers. Delivers the investment priorities of Ministers within the funding allowed by the Water Industry Commission for Scotland.

Water Industry Commission for Scotland (WICS)

Economic regulator. Sets charges and reports on costs and performance.

Drinking Water Quality Regulator (DWQR)

Responsible for protecting public health by ensuring compliance with drinking water quality regulations.

Scottish Environment Protection Agency (SEPA)

Responsible for environmental protection and improvement.

Scottish Public Services Ombudsman (SPSO)

Responsible for investigating complaints about public services in Scotland, including Scottish Water, once the services' complaints procedure has been completed and sharing lessons from complaints to improve the delivery of public services.

Consumer Focus Scotland (CFS)

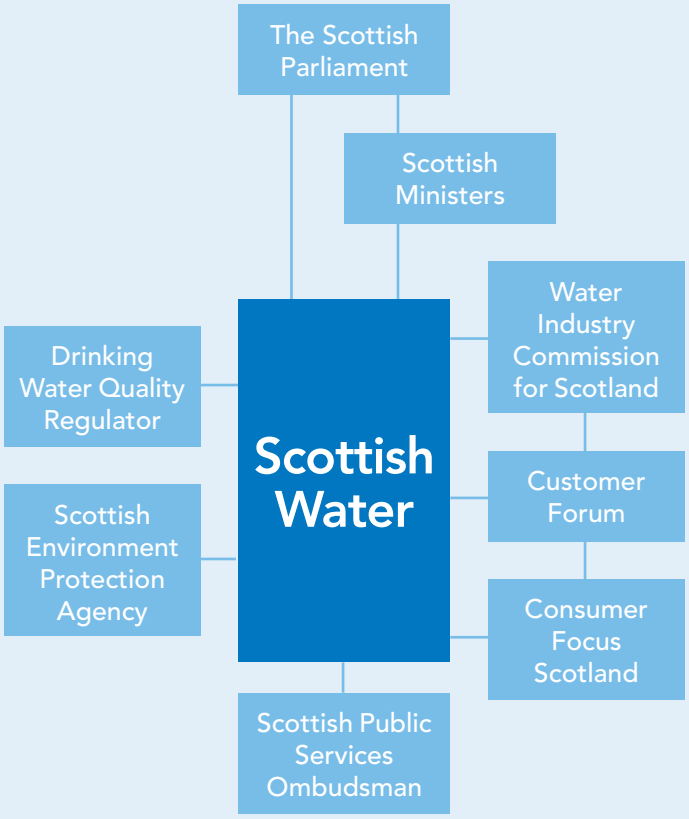
Responsible for representing the views and interests of Scottish Water customers and is a statutory consultee for matters relating to the Scottish water industry. Responsibilities of CFS customer representation function will transfer to Consumer Futures in May 2013.

Customer Forum

Responsible for ensuring that the customer's voice is part of the price setting process and at the heart of key decisions that affect the services Scottish Water customers pay for.

Other Regulators

Like other utilities, Scottish Water is also regulated by the Health and Safety Executive (HSE) and the Scottish Road Works Commissioner.



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