Scottish Water

Trusted to serve Scotland

Sustainability Report 2014

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 all our customers.

We provide clean, safe and high quality drinking water to **2.45 million** households and **154,000** business premises across Scotland. Every day we provide **1.3 billion** litres of clear, fresh drinking water and take away **842 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 remains among the lowest in Great Britain – £54 lower per year than the average household charge in England and Wales.

The quality of our drinking water continues to be at an all-time high and our investment is helping to support jobs and the economy of Scotland, while protecting and enhancing the environment.

Your charges go to maintaining and improving:

256
water treatment works

29,892
miles of water pipes

1,836
waste water treatment works

31,109
miles of sewer pipes

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 are having a positive impact.

Foreword

"We are committed to playing our role in the sustainability of Scotland's natural environment – helping to protect, enhance and support the biodiversity of Scotland's rich natural habitats."

Douglas Millican
Chief Executive

Water and waste water services that are resilient to change are vital to a sustainable society. Our challenge is to find ways to be increasingly sustainable in how we deliver those services.

Our purpose is to support the protection of public health and the environment through providing high quality affordable drinking water and safely managing society's waste water. We do this whilst ensuring our services are affordable and support Scotland's economy. These are integral to a sustainable society.

In striving to meet our vision of being trusted to care for the water on which Scotland depends, it is critical we fully understand what society and our customers expect of us, and that we respond to meet their needs.

We have a vast asset base that requires significant investment to maintain and enhance services to improve our resilience and meet customer, societal and environmental needs. Our assets will last for many decades, serving both current and future generations.

We worked closely with customer groups and with customers over the past 3 years to understand what they want from their service. Their views have directly influenced our strategic projections and our regulatory business plan, to help us to address society's needs over the next 25 years.

This, our third Sustainability Report, highlights a number of examples of our progress in delivering more resilient and sustainable services. It focuses particularly on how we are working with others to minimise the impact of society's waste water on the environment, environmental volunteering, and investing in energy efficiency.

There is a specific focus on biodiversity this year, to explain how we take account of the needs of the natural environment within our day-to-day activities and contribute to Scotland's biodiversity objectives.

We reduced our carbon emissions for the 7th consecutive year, despite continued investment to enhance services.

We continued to improve our services while our household customers continue to enjoy one of the lowest average charges in Great Britain. Our focus remains on doing the right thing for our customers, the economy and Scotland's environment.

Working together for a sustainable society

The water and waste water services we provide play a key role in creating and supporting a sustainable Scotland. Our core purpose supports the 3 principles of sustainable development:

- Society – we provide vital public health protection through affordable access to safe, wholesome drinking water and safe sanitation.
- Environment – we work to ensure the sustainable use of many of Scotland's water resources and catchments, and to safely treat and return society's waste water to the environment.
- Economy – we provide efficient, effective services and help Scotland's communities grow and thrive while delivering value for money to our customers, and we support thousands of construction jobs across Scotland.

We must ensure we deliver these key services in a sustainable way. This requires us to work with our customers and stakeholders to balance the demands of society, the environment and the economy.

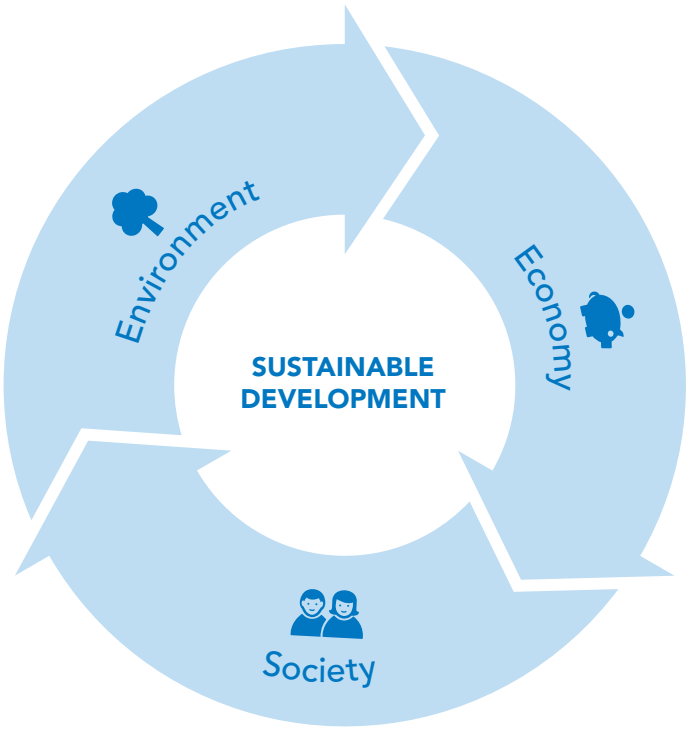
In planning and delivering our services it is important to fully to engage with our employees, customers and stakeholders to help us protect and enhance Scotland's environment. Our Business Plan for 2015-21 informs and shapes our plans for the future by engaging with our customers to deliver on their priorities, helping us to understand and meet society's expectations.

As we continue to improve efficiency throughout the business, our customers can be reassured that we are delivering more for less as we fulfil our vision of being trusted to care for the water on which Scotland depends.

The average Scottish household pays less than £1 a day for water and waste water services – £54 lower per year than the average bill in England and Wales. We continue to invest, when required, in enhancing our assets to deliver benefits for our customers and to support development in Scotland.

We will continue to improve our environmental performance through maintenance, operation and enhancement of our assets. We are investing in water resources and in delivery of sustainable approaches such as sustainable land management to protect Scotland's drinking waters. Reducing internal sewer flooding and flood risk are high priorities for us and our customers; supported through extensive strategic studies that underpin significant investment in Glasgow's waste water infrastructure.

Principles of Sustainable Development



A sustainable and resilient society

Service resilience is a key focus for Scottish Water. Resilience to climate and environmental change will help secure a sustainable Scotland. In this report we consider how some of our activities support Scotland's biodiversity objectives. The chapter on the Surface Water Management project at Red Burn (page 7) provides a good example of multiple benefits. Here, flooding and environmental quality risks are being addressed, habitat space increased and amenity value provided. Further examples of these wider benefits are provided in our Biodiversity report (page 14).

In this report we highlight a number of key themes that illustrate how we are seeking to provide our services in a way that balances public health, life in the community, environmental protection and cost including:

- Service, quality and biodiversity benefits of sustainable urban drainage;
- Reducing our energy consumption;
- Urban diffuse pollution management;
- Engaging customers to prevent flood risk and pollution through responsible use of sewers; and
- Investing in community involvement and volunteering.

We also provide a particular focus on biodiversity within this report, in keeping with the requirement of the Scottish Government for public bodies to report on their activities.

The work we do today and the developments we make will continue to protect communities and environment for years to come. We will continue to work in a more sustainable way to deliver your water and waste water services.

Loch Leven, Fife

Highlights of the year

Customers help us reduce sewer blockages and the associated flooding and pollution risks.

Partnership working helps prevent pollution at source and creates space for nature.

Our focus on finding sustainable ways to deliver our services helps to keep customers' bills down.

Get involved

You too can help create a more sustainable environment and improve biodiversity in Scotland. Throughout this report you will find information on how to get involved.

Keeping the water cycle running

In providing essential services to customers, one of the biggest challenges facing Scottish Water is clearing avoidable blockages in drains and sewers.

The typical waste water drain running from a house to a public sewer is usually only around 4 inches (10cm) wide – less than the diameter of a DVD. Cooking fat, oil and grease along with bathroom waste items such as wipes, cotton buds and sanitary products can build up, resulting in large clumps in the drains and sewers beneath Scotland's streets.

These blockages can lead to waste water backing up, causing flooding problems in homes and businesses as well as polluting local rivers and burns – creating misery for customers and the environment.

We attend around 40,000 blockages a year – 80% of which are the result of inappropriate items being flushed down toilets or poured down sinks. This costs Scottish Water over £7 million a year to remedy.

A key focus is to prevent blockages occurring rather than to deal with the consequences. This is better for our customers in relieving the consequences of flooding, and helps to protect our environment.

We believe the best way to tackle blocked drains and sewer flooding is to work together with our customers to help prevent the blockages that can clog up the cycle in the first place – which in turn will help to continue to keep customer charges low and free up funds for investment.

Still from Keeping the Water Cycle Running campaign

To help address this, Scottish Water launched its "Keeping the Water Cycle Running" campaign, in October 2013. Through national advertising across TV, radio, digital and social media, local advertising and communication activities, the campaign raised awareness of how everyone can play their part in preventing blockages, sewer flooding and, in turn, keep the water cycle running.

A key objective of the campaign was to promote the correct ways of disposing of items that have no place in the sewer. For example, fat, oil and grease should be left to cool before being scraped into a sealable container and then recycled as green kitchen waste, or put in the bin as appropriate. Even soup, stocks, sauces and milk contain fat that can congeal and harden in drains. Similarly, all kinds of wipes should be put in the bin – even if the pack says 'flushable'. The same applies to sanitary items, nappies, cotton wool and buds.

By highlighting some of the more unusual items found in Scotland's sewers – such as a Winnie the Pooh bear – we were able to generate significant media coverage, with the story picked up as far afield as the USA, and significant interest and engagement on our social media platforms such as Twitter.

Local campaigns to increase awareness and visibility of the issue were run in 4 areas identified as having a higher number of blockages. These were Hamilton, Dunfermline, Dumfries, and Stirling.

Here, we worked with local authorities and NHS midwives, helped housing associations promote messages to their tenants, visited supermarkets and colleges, spoke to food and hospitality businesses, and ran talks and poster competitions for school pupils.

Still from Keeping the Water Cycle Running campaign

The second phase of the campaign ran in February/ March 2014. It reinforced these messages as well as highlighting steps that everyone can take to save water in the home – through simple actions such as turning off the tap whilst brushing teeth.

The early indications are that the campaign has been a success with 42% of the population surveyed able to recall seeing or hearing an advert by Scottish Water about their waste disposal behaviours. Furthermore, of those who had seen the advert, 88% were likely to dispose of waste items correctly in the future and 16% stated they had already changed their behaviour.

Between November 2013 and May 2014, we saw a 10% reduction in the number of blockages in our pipes. However, the full impact and reach of the campaign can only be understood in the long term, and we continue to monitor it.

With these encouraging results we will continue to focus on community and customer engagement to raise awareness of this important issue, and hope to see a further reduction in both environmental and service impacts from blockages.

Still from Keeping the Water Cycle Running campaign

Get involved

You can help protect the environment by disposing of waste responsibly, not via toilets and drains.

In the bathroom, remember our **3 P's rule**: **p**ee, toilet **p**aper and **p**oo, the only things you should flush down the loo. Everything else should go in the bin, not down your toilet. Keep a bin in the bathroom to make it easy.

In the kitchen, fat, oil and grease should be left to cool then placed in a sealable container and either recycled in line with local authority guidance or disposed of alongside normal household waste.

For more information visit: www.scottishwater.co.uk/cycle

Red Burn sustainable drainage

Within a project to improve water quality Scottish Water has forged a unique partnership with the Scottish Wildlife Trust to realise wider benefits for the environment.

Within the new town of Cumbernauld in North Lanarkshire, a large catchment area of industrial units, roads and other hard surfaces in Wardpark was drained using underground pipes, taking rainfall run-off and discharging it to the Red Burn. Whilst this prevented flooding, it impacted the watercourse by changing the natural flows in the catchment. The run-off water also contained pollutants, such as oil and petrochemicals from roads, contaminating the watercourse and harming wildlife.

To find a sustainable solution, Scottish Water designed a system to take surface water and rainfall run-off through a series of ponds to mimic a natural catchment. These ponds, known as a Sustainable Urban Drainage System (SUDS), have 2 benefits. Firstly, they reduce the speed of the run-off to prevent flooding. Secondly, by filtering and treating the surface water, pollutants are removed and the quality of water that reaches the Red Burn is much improved.

Given the size of the catchment area, 6 ponds covering 14 hectares were needed to deal with the large volume of surface water. The key challenge was to find suitable sites in an urban area with many constraints. In selecting a location, the best option included a woodland area within a wildlife reserve managed by the Scottish Wildlife Trust.

For the system to be truly sustainable, the design needed to address the risks to the Red Burn whilst also contributing to habitat protection and enhancement within the reserve. Since the reserve was already managed to protect the environment, the expectations were very high. This woodland was potentially home to a wide range of wildlife, including protected species such as bats, badgers and bluebells.

Partnership

A partnership was formed between Scottish Water and the Scottish Wildlife Trust to maximise the benefits of the development. The partnership was in place from early in the design stage through to the final commissioning of the site, and brought multiple benefits. The Scottish Wildlife Trust helped us to design the shape and orientation of the ponds and create more naturally functioning features. In turn, the Trust benefited from the removal of non-native trees from the reserve, whilst expanding the native woodland.

The Trust's expertise in woodland management helped us to limit the extent of felled trees, saving time and money. All parties benefited from site meetings at critical points to help resolve issues quickly.

Benefits

As well as protecting the Red Burn, the construction of 6 ponds and reinstatement of native woodland has created an area that supports protected species such as badgers, otter, bats and a variety of bird life and insects. The surrounding areas will also provide habitats for many other species. 4 additional wildlife ponds have been created which vary in size, shape and depth. These will provide refuges for amphibians in the event of pollution in the main ponds. Natural woodland regeneration is being encouraged along with the planting of nearly 5,000 native trees and shrubs.

Through the Scottish Wildlife Trust, a system of monitoring was set up to ensure that the work was carried out in an environmentally responsible manner, and a series of long-term monitoring sites have been created to look at changes over time. The development of the SUDS will make a real difference, reducing flooding, improving water quality and enhancing the diversity of wildlife in the area.

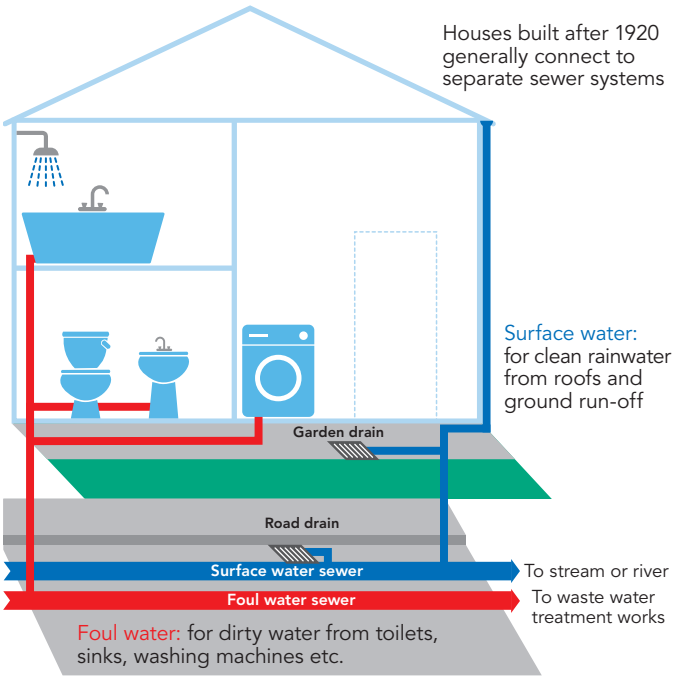
One of the newly built SUDS ponds, Red Burn, Cumbernauld

Improving the environment through surface water action plans

In some areas of Scotland the sewer network is separated into 2 systems, one to deal with waste water from homes and businesses (foul water) and another to deal with water running off roofs, roads and hard surfaces (surface water).

Where the systems are separate, surface water discharges directly to nearby watercourses without treatment. This means any contaminants that get into a surface water sewer are taken directly to a watercourse. It is therefore preferable to prevent this pollution at source – to stop the contaminants getting into the surface water sewer – rather than try to clean it up afterwards. Although Scottish Water is responsible for surface water outfalls, we are unlikely to have contributed to their contents.

Separated sewer system



Typical sources of contaminants from urban areas are residues from our streets, manufacturing and residential areas. They include:

- Petrol-based and oil-based products;
- Traces of metals from vehicle brakes;
- Litter;
- Detergents from washing vehicles on drives and roads.

In our 2010-15 investment plan Scottish Water set out to improve the discharges from 6 surface water outfalls to help improve river quality. It was not possible to build a treatment process (e.g. Sustainable Urban Drainage System) at these sites owing to the lack of land within a built up area. Instead, we worked with the Scottish Environment Protection Agency to develop an alternative approach. This led to the creation of the concept of surface water action plans (SWAPs) as a way to address urban water pollution.

The 6 central belt sites that we have developed SWAPs for are:

A. Righead Industrial Estate, Bellshill

B. Deans Industrial Estate, Livingston

C. Greendykes Industrial Estate, Broxburn

D. Pentland Industrial Estate, Edinburgh

E. Pentland (Straiton) Retail Park, Edinburgh

F. Edgefield Industrial Estate, Edinburgh

Preventing pollution at source is the sustainable first step in addressing urban water pollution and improving river water quality. We will complete work at these first 6 sites in spring 2015 and we are working with SEPA to identify and develop SWAPs for a further 15 sites in our next regulatory period (2015-21). These are currently proposed for the Central Belt, Grampian and Fife. If successful, the development of SWAPs in these proposed locations will help avoid the need for additional treatment on discharges.

Evidence of poor practice at a surface water outfall

In developing SWAPs, we have found that there is not one sole cause of pollution, or one simple remedy, and that many different parties have a role to play in reducing this type of pollution. The aim of the SWAP is to encourage partnership working with all the relevant stakeholders to help improve the local water environment by reducing pollution from the industrial estate via the surface water outfall.

We undertook extensive surveys of the drainage catchments, along with chemical analysis of the surface water and the watercourses into which they discharged. This helped us to identify the risks to the environment and to set out action plans to manage these.

A lot of work has focused on educating the businesses and individuals based at these estates, so they understand the link between surface run-off and the watercourse. We have also been looking in detail at activities that take place at these sites, to understand how they relate to the water quality measurements at the surface water outfall and nearby watercourses. An important aspect is to engage with Local Authorities to understand and inform their planning regimes and maintenance programmes, which will help protect the watercourses in future.

Overall, the aim of the SWAPs is to improve the local environment by improving the water quality. This will allow the more sensitive microorganisms to flourish, which will in turn encourage larger aquatic species that are dependent on them for food. The immediate watercourses are small water bodies and may not directly support larger river life due to low flows in the summer. However, by improving the water quality, these small water bodies will have less of a negative impact on the larger rivers they feed into, where river life can be fully supported.

Oil sheen visible on the water surface at this blocked drain

Get involved

You can help protect the environment by ensuring you minimise pollution to surface water drains.

- Never dispose of oils, fuels or paints down a drain. Put them in a sealed container and take them to one of your local authority recycling centres.
- Never drop litter in the street – put it in a bin to prevent it being washed into drains and sewers.

Volunteering for the environment and conservation

Scottish Water launched our Volunteering Programme in 2011, giving all employees opportunities to participate in activities focused around education, environment and local community volunteering.

The aims of the programme are to help develop the skills of our employees, improve teamwork, and support equality and diversity outcomes whilst strengthening relationships with local communities.

The Volunteering Programme helps us to demonstrate Scottish Water's commitment to making a real difference in and around communities; complementing our investment programme to improve services, protect and enhance the environment and support local economies.

Since the launch of the programme, around 2,000 of our employees – who are each entitled to 2 days paid leave for volunteering each year – have taken part in the programme.

In 2013/14, our employees contributed almost 12,000 working hours for the benefit of charitable, environment or community work across Scotland. This has included presentations at events in schools and education-related activities in communities.

Given Scottish Water's role in protecting and enhancing Scotland's land, rivers, lochs and coastal waters, the environment has been a particular focus of our Volunteering Programme, with initiatives to help wildlife and nature flourish. In keeping with our biodiversity theme, here are some examples:

Dean Castle Country Park

At Dean Castle Country Park in Kilmarnock, 11 volunteers spent a day with countryside rangers who work to educate, interpret, monitor and protect wildlife and the environment in the country park and throughout East Ayrshire.

The volunteers planted several dozen trees which will provide habitat and shelter for wildlife, including birds, squirrels and insects. The trees will also improve the air quality, as well as moderating the effects of sun and wind.

The volunteers also surveyed a wooded area, recording each tree by type, girth, height and condition before attaching a metal tag to the trunk for future identification. This information will assist with a project – backed by Heritage Lottery funding – to capture as much information as possible about the park's wildlife and nature.

Beach Cleans

Beach cleans have been a popular part of our programme. Many beaches are blighted by litter from different sources. As well as being unsightly, litter can be a real threat to the wellbeing of birds and marine wildlife because they are at risk of accidentally eating or becoming entangled in litter, either on the beach or in the sea.

As part of the programme in 2013/14, 47 employees carried out 6 beach cleans, picking up and removing litter from the shoreline. In some cases they also carried out a beach litter survey to help inform the Marine Conservation Society of possible sources of litter.

For example, a team of 11 employees visited Granton foreshore in Edinburgh where, with the aid of litter pickers provided by the Forth Estuary Forum, they removed many bags of litter, making a noticeable difference which was commended by the Forum.

Beach clean at Granton foreshore, Edinburgh

National Park Repair

At the Friends of Loch Lomond & Trossachs national park 'Make a Difference Day', 9 volunteers helped out.

Along with other volunteers, on the south side of Loch Venachar, they dismantled 35 fire pits to discourage people from lighting fires – often people will cut branches from living trees to build a fire as there is limited dead wood available. They also filled 30 bags of litter, removing it out of harm's way, to help restore the scenic beauty of the area and protect wildlife.

They then identified and recorded 40 ancient trees in Glen Gyle – including Alders up to 300 years old – building up a picture of significant ancient native trees in the area. Ancient trees are living relics of previous ages and link our history with our future. Building up a picture of their location and distribution helps land managers formulate plans to protect and conserve them.

They removed Sitka spruce regeneration. Sitka spruce is a non-native tree species, which is faster growing than native species; it therefore hinders regeneration of native species, such as Scots pine, which grow more slowly.

The volunteers also built a wildlife hut at the David Marshall Lodge Forest. This hut will provide shelter for native tree and plant species to regenerate, and will protect a whole host of wildlife, including rodents and birds, providing suitable habitat to lay eggs, rear young or hibernate.

Surveying woodland at Dean Castle Country Park, Kilmarnock

Get involved

There are lots of ways you can help improve biodiversity and the environment, from volunteering for a local environmental charity, to planting trees or setting up mini-habitats in your garden. Here are a few examples to inspire you:

- Take part in a wildlife survey. Several charities organise them. Some take place at a particular location, others you can do in your own garden or local park.
- When choosing plants for your garden or window box, go for native species. They're better for attracting bees and butterflies, and they're more likely to withstand the local weather conditions. You could also consider drought-tolerant varieties to help conserve water.
- Create places for wildlife to take shelter in your garden – a pile of dead wood or a few flat stones are ideal.
- Include a bird bath or small water feature in your garden – it will attract garden birds to drink and bathe, especially in dry weather.

Reducing our energy consumption

We supply customers with 1.3 billion litres of drinking water and treat 842 million litres of waste water every day through over 60,000 miles of pipes and thousands of treatment works. This requires significant power, making Scottish Water one of Scotland's largest purchasers of electricity, using around 450 Gigawatt hours per year.

Meeting demands for new services along with higher standards of treatment, whilst keeping down energy use, emissions and costs, has led us to develop a 4-point energy management and development strategy. This seeks to:

- Reduce consumption by improving the capability of our assets and operations;
- Increase self-generation of renewable electricity where there is a good return for our customers – deploying innovation and technologies that maximise value from our asset base;
- Host private renewable energy investment on our land; and
- Optimise energy purchasing to protect our customers from price volatility.

In last year's Sustainability Report we focussed on our renewables programme. This year, we take a closer look at what we are doing to reduce electricity consumption.

Our Energy Improvement Programme has delivered a number of projects to reduce energy consumption in 2013/14. These projects focus on both technology and our people.

Detailed energy audits were carried out at 70 of our highest consuming treatment works.

Pump operation is a key driver of electricity demand, at both water and waste water treatment works. The audits helped target investment in pump refurbishment and replacement, and in the installation of technologies such as variable speed drives. These enable us to save energy in one of the most energy intense parts of our service, and the benefits of this will be tracked in the coming years.

Treatment of waste water by aeration

Treatment of waste water by aeration is another key driver of electricity demand. The audits also helped target installation of 'real time control' pilots at 2 waste water treatment works, to allow aeration processes to be matched to the pollutant load entering the treatment works. Aeration of waste water typically accounts for over 50% of energy consumption at these sites, so significant energy savings are expected in 2014/15.

As well as investing in efficient technology, it is important our people understand and support our approach. We have worked with our operational teams to promote increased knowledge of energy management and reduction. A significant improvement in data and reporting has been made to enable this. A new energy 'dashboard' is in place for operational team leaders, giving increased ability to monitor energy consumption. A sub-metering pilot is being implemented at 2 sites, to give visibility of energy usage by specific parts of the treatment works. We hope that giving our people the tools to understand and manage the main drivers of consumption whilst operating our assets will enable improved focus on efficient operation.

Society's demand for electricity from the National Grid varies throughout the day and throughout the year.

During the winter months, especially during November to February, demand is higher (due to more lighting and heating), leading to increased costs and pressure on the system. We have developed management plans to reduce our energy demand (providing there is no risk to effluent compliance) if required to do so by National Grid. In 2013/14, 22 of our highest consuming waste water sites took part in this initiative.

On a daily basis, electricity demand is generally highest during the late afternoon and early evening. Our energy management plans take this into account at both water and waste water sites. For example, as noted above, one of the biggest power demands in waste water is treatment by aeration. By tracking performance more closely and introducing active control of the process, we are able to reduce aeration at peak times, whilst still achieving the required effluent standards.

Reducing our electricity demand during these peak times also has financial benefits, so contributes towards the 4th point of our strategy.

Using our 4-point energy management and development strategy, we expect to be enabling more energy generation than we consume by 2018. This approach enables us to make a contribution to developing a cleaner, greener Scotland – maximising the potential of natural water resources to leverage economic and environmental benefit – while helping to reduce our energy consumption and costs for the benefit of customers.

Get involved

The greenhouse gas emissions associated with heating water in the home are 15 times those to treat and distribute it. Therefore, the biggest energy savings are in your hands. The less hot water you use, the less water you'll heat; saving you money on your energy bills and reducing your home's carbon emissions. Try these water efficiency tips at home:

- Fit your shower with an aerating shower head;
- Install inserts to convert your taps to spray taps;
- Only run the washing machine or dishwasher when you have a full load to wash;
- Don't fill the kettle, only use enough water for what you're making.

Biodiversity

This Biodiversity Report has been written to fulfil Scottish Water's public body biodiversity reporting requirement contained in the Wildlife and Natural Environment (Scotland) Act 2011. It describes some of the actions we have taken and how we are integrating the requirement to further the conservation of biodiversity into the operation of our business.

Introduction

Scotland relies on a good quality environment both to supply drinking water and to receive treated waste water. As such, Scottish Water stewards many of Scotland's water resources, and provides the barrier between society's waste water and the environment.

Our statutory duty to further the conservation of biodiversity sits alongside statutory functions for water and waste water services, and our core purpose to:

- Provide high quality affordable drinking water
- Protect and enhance our environment
- Support Scotland's communities and economy

Environmental quality and biodiversity needs are integrated within our regulatory investment programmes, and in recent years our work to manage rural and urban catchments to prevent pollution at source demonstrates how multiple benefits in terms of drinking water quality, service, environment and biodiversity can be delivered. This supports environmental resilience, and our investment plans contribute to Scotland's environmental objectives outlined in the Scottish Biodiversity Strategy (SBS) and River Basin Management Plans.

We work closely with Scottish Natural Heritage (SNH) and share a Guidance and Communication document that directs our teams in managing biodiversity issues. Many of the requirements for biodiversity are integrated within the conditions set in our environmental licences by the Scottish Environment Protection Agency (SEPA) to ensure appropriate protection.

By working with SEPA and SNH through our regulatory investment planning, our investment programme identifies those assets that require enhancement to take account of biodiversity needs. Examples are provided on the following pages for Loch Lonachen and Moray Firth Special Areas of Conservation. We also work closely with delivery partners to ensure biodiversity needs are taken into account in investment delivery, particularly where we are working in Sites of Special Scientific Interest (SSSI), in compliance with biodiversity legislation.

This report highlights how we are contributing to Scotland's biodiversity goals, set out according to the 5 stated objectives of the 2004 SBS: Species & Habitats; People; Landscapes & Ecosystems; Integration & Co-ordination; and Knowledge.

Species & Habitats

Scotland's Biodiversity Strategy Objective: To halt the loss of biodiversity and continue to reverse previous losses through targeted action for species and habitats.

We own and operate assets across Scotland in diverse urban and rural locations. Where our operations may impact on a protected site, we work with our regulators and stakeholders to protect special features. This work contributes to the quality, number, range and connectivity of natural habitats, forming a coherent network of protected places both on land and in the water environment.

To that end we have engaged in several biodiversity initiatives across Scotland since 2005. We supported the development of the SBS Implementation Plans and took part in the Freshwater & Wetland Group.

Asset Management

Within our landholdings there are areas that could potentially contribute to increasing national forestry coverage, consistent with the aspirations contained in the Scottish Forestry Strategy. We are currently assessing the quality and condition of the woodlands on our estates, and have moved away from the traditional blanket of Sitka spruce woodland into more diverse broadleaf woodland, in keeping with biodiversity objectives.

Woodland at Loch Katrine

For example, at Loch Katrine we have approximately 2,500 acres of woodland. Here we have entered into a partnership with Forestry Commission Scotland to develop natural and biologically diverse woodlands that will more closely resemble Scotland's naturally occurring woodland cover.

Additionally, we have taken opportunities within treatment works to provide "space for species". At Tarland Waste Water Treatment Works, we have a thriving wetland habitat that also functions as part of the treatment system, delivered through a European project in partnership with SEPA and SNH.

More widely, we are working in partnership with wildlife experts to address the spread of non-native species, such as the American Signal Crayfish at Buittle Reservoir in the Scottish Borders.

We are a member of Scotland's National Species Reintroduction Forum and have made our reservoirs available for the reintroduction of Vendace, a fish species highlighted in SNH's Species Action Framework. This has already taken place at Daer Reservoir in South Lanarkshire, and we are investigating the suitability of Black Esk Reservoir in Dumfries & Galloway.

Meeting Scotland's Biodiversity Objectives

Scotland has a target to improve the condition of protected nature sites. We work with SNH on our sites that have specific natural heritage designations. This ensures the sites fulfil their operational function whilst maintaining and enhancing the Favourable Conservation Status of their features. Currently, 78.5% of the features on our designated sites are in favourable condition and, taking into account sites where no remedy is possible, this figure rises to over 90%.

Many of our landholdings now provide important habitats for a range of species, both resident and migrant. A recent survey at our reservoir at the Loch of Lintrathen showed 44 species of bird present at this site alone. At another of our land holdings designated a SSSI, Holl Meadow, we work to manage important grassland habitats.

Investment to meet Natural Heritage Designations

Whilst the majority of our environmental investment has biodiversity benefits, particularly with respect to supporting Good Ecological Status under the Water Framework Directive, there are cases where we invest specifically to meet natural heritage designations. The Moray Firth is designated a Special Area of Conservation (SAC), having been identified as an important habitat for bottlenose dolphins. Investment to improve our waste water treatment works within the SAC must also meet guidance from SNH on the required water quality standards for dolphins.

People

Scotland's Biodiversity Strategy Objective: To increase awareness, understanding and enjoyment of biodiversity, and engage many more people in conservation and enhancement.

Under existing Scottish Land Reform legislation there is a right of access to many of our reservoirs and landholdings. People have been enjoying recreational visits to such areas for many years, and we have published a guide based on the Scottish Outdoor Access Code to help the public get the most from their visit. Under the code, visitors are reminded to respect the interests of other people, to care for the environment, and to take responsibility for their own actions. Our guidance is available on our website: https://www.scottishwater.co.uk/you-and-your-home/your-health/safety-around-reservoirs

Tarland wetland, Aberdeenshire

Our reservoirs exist to store and supply safe, clean drinking water. There are hygiene and biosecurity issues that visitors must be aware of: it is possible to transfer bacteria, parasites and invasive species via boats or sporting equipment. All visitors must take care to clean their equipment before entering the water. There are health and safety issues associated with man-made bodies of water that must also be borne in mind, but this should not deter visitors from enjoying the natural environment and wildlife to be encountered at many of our sites.

Our employees are encouraged to take part in volunteering. Many employees take advantage of this opportunity to help at nature reserves or wildlife sanctuaries. More on our Volunteering Programme, and how it supports biodiversity, is included in the Volunteering chapter earlier in this Sustainability Report.

Engaging customers to protect the environment

Through volunteering and wider community engagement, our people frequently visit schools to talk to pupils about the water industry, including how it can impact on the environment and wildlife. There is a range of educational resources on our website, which have been developed to support learning experiences and outcomes in line with the current school curriculum in Scotland.

In addition, we engage in a number of Local Biodiversity Action Plans, which help to promote knowledge of species and habitats in a local context. Importantly, they can enable appropriate community involvement with and ownership of biodiversity, encouraging communities to take responsibility for the wildlife and habitats in their local area.

As highlighted in the 'Keeping the Water Cycle Running' chapter of this Sustainability Report, we have run a number of public campaigns via print, broadcast and social media to raise awareness of the water cycle and of how inappropriate behaviour can damage our operations, causing flooding and harm the natural environment.

Our on-going Cycle campaign reminds the public not to flush cotton buds, wipes, disposable razors etc. We also work to raise awareness of how disposing of fat, oil and grease down the kitchen sink can cause blockages and harm wildlife. Further information is available on our website: www.scottishwater.co.uk/cycle

Landscapes & Ecosystems

Scotland's Biodiversity Strategy Objective: To restore and enhance biodiversity in all our urban, rural and marine environments through better planning, design and practice.

We manage extensive landholdings across Scotland primarily to protect rivers and reservoirs that supply drinking water. The work we undertake with landowners and tenants across water catchments also helps protect healthy ecosystems and maintain landscape value. There are significant crossovers with the actions mentioned above on species and habitats.

The Water Framework Directive (WFD) requires the establishment of River Basin Management Plans. We are a key partner, along with SEPA and a number of other public bodies, in the effective management of Scotland's river catchments. Across Scotland, we contribute to Catchment Management Plans. These set out strategic visions for the sustainable use of water resources and the protection of both water quality and natural heritage. Flood prevention is another important shared function that effective river basin management can help to provide.

Butterfly orchid, Holl Meadow SSSI, Fife

Multiple Benefits – Sustainable Land Management

In recent years, we have carried out a great deal of work to improve the management of raw water catchment areas. Preventing pollution at source rather than investing in treatment offers a much more sustainable approach. We have completed catchment surveys for 34 of our water treatment works. The Sustainable Land Management (SLM) Incentive Scheme is available in 10 catchments challenged by erosion of sediments, pesticides and nutrients.

In partnership with the Scottish Government, SEPA and the Water Industry Commission for Scotland, we have developed the SLM incentive scheme. This supports Drinking Water Protected Areas designated by SEPA under the WFD. As well as protecting our own water catchments, this work can have an important benefit to local species, habitats and ecosystems.

By monitoring catchment quality, working with farmers and landowners to identify best practice and, where necessary, financing sustainable measures (e.g. fencing watercourses, nutrient budgeting, bankside planting and cattle watering) we hope to reduce the level of treatment required at water treatment works that abstract from rural catchments.

This helps provide high quality drinking water at the lowest financial and environmental cost. We also expect wider benefits in terms of improved habitat, reduced erosion and more resilient catchments.

Upland peatland areas have long been recognised as providing natural water storage capacity, as well as helping to protect locally and regionally important ecosystems. We regularly engage with Scotland's Moorland Forum to help protect and maintain these areas.

Another area where there is a direct landscape and ecosystem benefit from our work is in the development of Sustainable Urban Drainage Systems (SUDS). The main function of our SUDS, and those accepted for adoption by us, is the collection, storage, improvement and slow release of surface waters. However the areas set aside for SUDS can also be beneficial for wildlife, particularly in urban areas. This is explored in more detail in the 'Red Burn Sustainable Drainage' chapter of this Sustainability Report.

Integration & Co-ordination

Scotland's Biodiversity Strategy Objective: To develop an effective management framework that ensures biodiversity is taken into account in all decision making.

Scottish Water places a very high value on the importance of partnership working to deliver our core business functions – this includes close liaison with other public bodies, non-governmental organisations and our 3 regulators: Water Industry Commission for Scotland (our economic regulator), the Drinking Water Quality Regulator, and SEPA (our environmental regulator).

We work with SEPA to set appropriate licence conditions for our water abstractions and waste water discharges. These will take into account specific local designations, including those impacting on biodiversity.

We have developed a strong liaison framework with SNH, at both a local and national level. This relationship informs much of our work on biodiversity. During recent years we have participated in a number of SNH "Sharing Good Practice" events, on subjects including Strategic Environmental Assessment, Coastal Adaptation and the Species Action Framework. Events such as these help to build capacity and knowledge on biodiversity issues and help us to ensure our core functions are carried out in accordance with the duty to further the conservation of Scotland's biodiversity.

Our regulatory investment programme involves the delivery of a large number of engineering projects. To ensure that the land, freshwater and marine environments are protected during the delivery of these projects, we consult with statutory public bodies as well as with local biodiversity officers, local wildlife groups and fishery trusts. By consulting with and taking appropriate advice from such organisations, we can help to meet the needs of all interested parties.

Taking Account of Nature – Loch Lonachen

A good example of partnership work with SNH and SEPA is our investment in water services on the Isle of Skye. Loch Lonachen is a key drinking water source; however it is also designated as an SAC under the European Habitats Directive for its important shallow lochside habitat.

During 2013-14 we reached agreement with SNH and SEPA to progress a water resource project that will secure drinking water supplies on Skye. As part of that agreement we will undertake regular ecological surveys and additional climate change monitoring to help SNH and ourselves to understand and respond to any emerging threats to the integrity of the SAC.

We routinely engage with Scottish Government and others to contribute to consultations on the development of legislation, where it affects our core functions. Examples include the Marine Act, Marine Strategy Framework Directive and the Environmental Liability Directive. During 2013-14 we made a significant contribution to the development of Scotland's Marine Litter Strategy and Marine Protected Areas, which has allowed us to agree an approach with SEPA for our 2015-21 investment plan. This will ensure we make an appropriate contribution to the continued improvement of Scotland's environment.

Knowledge

Scotland's Biodiversity Strategy Objective: To ensure that the best new and existing knowledge on biodiversity is available to all policy makers and practitioners.

We work to ensure we make the right decisions for Scotland, using the best available evidence to understand how Scottish Water's core functions interact with the environment and Scotland's biodiversity.

Guidance to investment teams

We have a specialist environmental services team within Scottish Water to guide and support project delivery teams. This proactive approach helps to ensure that all environment and biodiversity related issues are taken into account as early as possible in the planning and design of new projects.

Central to this is the shared communication framework Scottish Water has with SNH. This guides operators and investment teams in managing biodiversity within their work, improving the efficiency of the project delivery process, and ensuring we understand and comply with biodiversity imperatives.

Through this, we identify and agree sites requiring ecological surveys before we embark on detailed project optioneering and design. This helps us to incorporate mitigation measures to help conserve habitats and species and meet our biodiversity duty. The shared guidance with SNH and engagement with delivery teams, helps ensure all our project managers are continually supported to make sure they are aware of the importance of wildlife, biodiversity and protected places.

Developing New Knowledge

In addition to drawing on knowledge from elsewhere, we actively contribute to research in a number of areas, for example:

- At Gladhouse Reservoir in Midlothian we are researching the benefit to migratory geese of reducing the water level by 1.5 metres, providing increased haul out and roosting habitat.
- At Lochaber, we are reviewing the impact of one of our weirs on the lifecycle of freshwater pearl mussels.
- In the Moray Firth SAC, we are participating in research to define areas frequented by dolphins. This study is linked with ongoing modelling work for bathing water standards in the area.
- Ongoing monitoring at Loch Lonachen (mentioned previously) will provide valuable, information on the vulnerability of this habitat to climate change and help us to make the right decisions in the future.

Each of these areas of scientific research will inform our future activities, contributing to our efforts to protect the natural environment and to maintain and enhance Scotland's biodiversity.

Bottlenose dolphins in the Moray Firth

Operational Carbon Footprint 2013/14

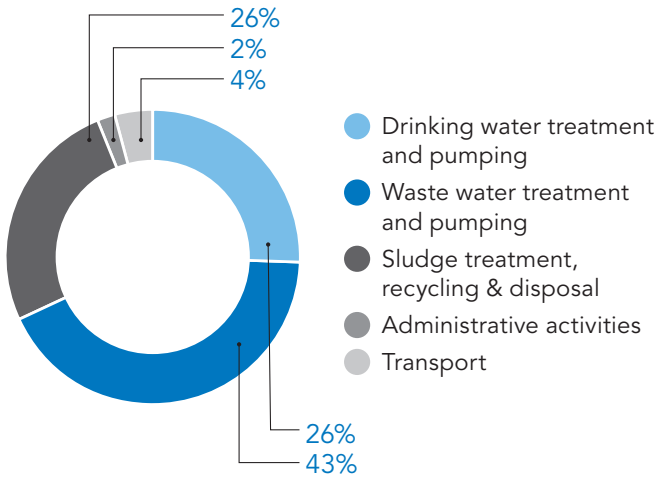
Our operational carbon footprint (CFP) for 2013/14 was 379,000[1] tonnes of carbon dioxide equivalent (tCO_2e); a reduction of over 3% on last year's CFP. This, our 8th annual operational footprint report, covers the greenhouse gas (GHG) emissions associated with the delivery of water and waste water services to customers across Scotland.

The CO_2e figure comprises emissions from the use of grid electricity, emissions of carbon dioxide, methane and nitrous oxide from biological treatment processes, trace emissions from refrigerants, and also waste sent to landfill[2].

The chart below shows our CFP broken down by 'activity type' – the activities that deliver our services. It is seen that our waste water service (the treatment and pumping of waste water and the treatment and recycling of sludge) produces the majority of our CO_2e emissions, accounting for 69% of the total. While we operate a large fleet across a wide geographical area, transport only accounts for 4% of our CFP.

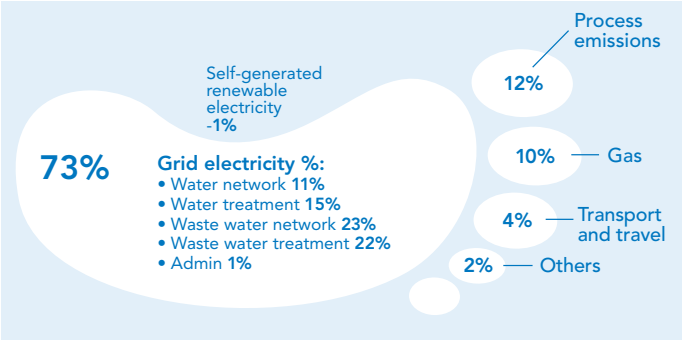
If we break down the CFP another way, to show the sources of emissions such as in the diagram below, we can see that grid electricity is the main contributor at 67% of the total CFP. Process emissions (other GHGs such as methane and nitrous oxide formed from organic matter breakdown), natural gas and chemicals also make significant contributions.

GHG emissions by activity 2013/14



Another way to look at the CFP is to examine the sources of emissions, such as in the diagram below. We can see that electricity is the main contributor at 73%. Process emissions (other GHGs such as methane and nitrous oxide formed from organic matter breakdown), and natural gas use also make significant contributions.

GHG emissions by source 2013/14



In keeping with all other UK water companies, we use the Carbon Accounting Workbook (CAW) developed by UK Water Industry Research. This was developed in partnership with the Carbon Trust and is updated annually to ensure it reflects the latest emission factors, accounting rules and guidance from the Department for Environment, Food & Rural Affairs (Defra) and the Department for Energy and Climate Change (DECC).

Defra advises reporting GHG emissions in terms of 'Scope', which are defined as:

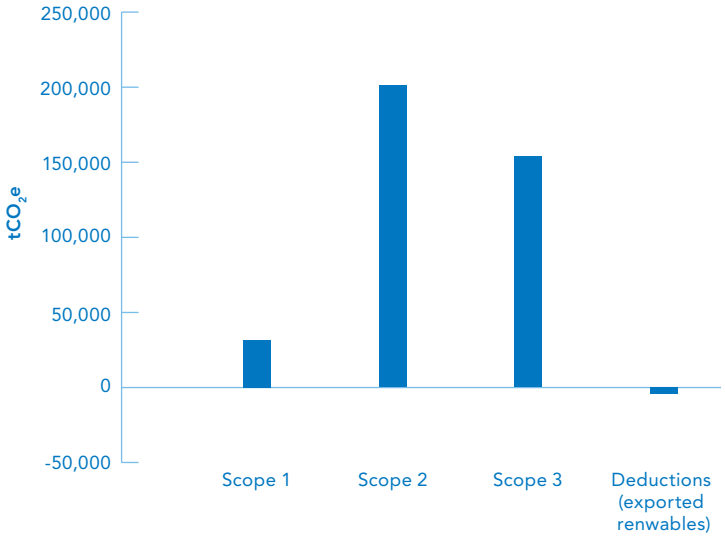
- Scope 1 – Direct emissions: on-site combustion of fossil fuels; process emissions; and emissions from vehicles owned or leased by Scottish Water.
- Scope 2 – Indirect emissions: use of grid electricity.
- Scope 3 – Indirect emissions: public transport and private vehicles used for business travel; outsourced activities (including sites run by PFI[3] companies on our behalf); emissions associated with electricity lost in the electrical transmission and distribution system.

[1] Our CFP figures have been rounded to the nearest 1,000 tonnes to reflect the level of accuracy of the calculations. Reporting to the nearest tonne gives a false sense of accuracy.

[2] Water companies in England & Wales are required to report their CFP to their regulator. Their reported CFPs exclude waste to landfill. Therefore, for comparison purposes, our 'water industry comparable' CFP is 376,000 tCO_2e.

[3] Some of our waste water treatment works are run on our behalf by Private Finance Initiative (PFI) companies. The emissions from these sites are included in our CFP as Scope 3.

Emissions by scope



Carbon intensity of water and waste water

It is useful to understand the carbon intensity of our service – the amount of carbon emitted to supply a litre of drinking water or collect and treat a litre of waste water.

Our water service has the lowest carbon intensity in the UK. This is mainly due to more opportunity to use gravity to supply our customers (rather than pumping).

Our waste water service, however, has higher carbon intensity than the UK average. This is because we have a distributed population requiring many small waste water treatment works, thereby losing economies of scale. In many areas we also need to meet stringent water quality standards for bathing waters, shellfish waters and other designated areas, requiring energy intense processes such as ultraviolet light (UV) disinfection of waste water.

Customers who know how much water they use and waste water they produce (in litres or megalitres) can use the carbon intensity figures in the table below to calculate their water and waste water CFP (CO_2e in grams per litre (g/l) or tonnes per mega litre (t/Ml))[4].

Customer footprinting

Emissions Sources	CO_2e emissions (g/l or t/Ml)[5]
Drinking water service – includes extraction, treatment & pumping of drinking water supply	0.16
Waste water service – includes pumping & treatment of waste water and transport & treatment of sludges	0.80

Changes to our Carbon Footprint

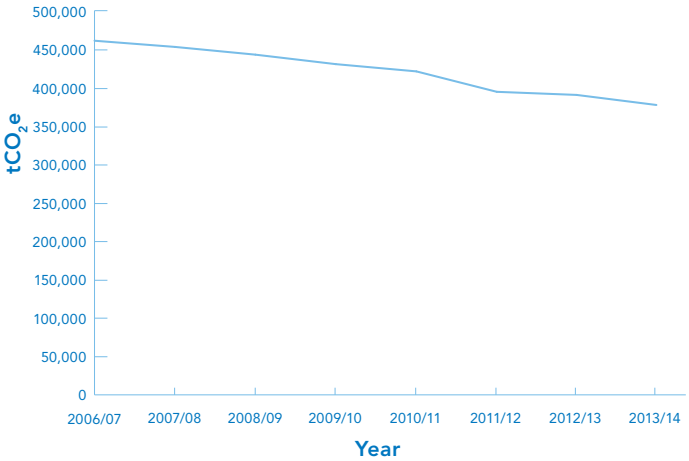
Over the 8 years we have been reporting our CFP, there have been improvements in the data collected but also changes to methodology and carbon emission factors.

In 2013, Defra made a major change to the way it calculated grid electricity emission factors, along with changes to some others such as aviation emission factors. These changes applied not only to the 2013/14 reporting period, but were also to be applied retrospectively to previous years' CFPs. We therefore undertook a major rebaselining exercise in 2014 to take these and other changes into account.

As part of this rebaselining exercise, we decided to exclude the chemicals we purchase to treat water and waste water. This approach brings us more into line with other UK water companies. Unlike other UK water companies, however, we do still include waste to landfill in our CFP. This is because we regard the landfilling of waste as something within our control that provides no third party benefit.

The chart below shows our CFP over the last 8 years, using rebaselined figures.

Carbon footprint trend



[4] The figures supplied include emissions associated with administration, transport and waste sent to landfill; i.e. our whole operational CFP shared between water and waste water. They are indicative and based on the best available information. They will change over time due to operational changes and data improvements. Customers should ensure they are using the latest figures if calculating emissions associated with their consumption of water and waste water services.

[5] Water Industry Comparison: As with overall CFPs, UK water industry carbon intensity ratios exclude waste to landfill. Our 'water industry comparable' carbon intensity figures are: Water = 0.15; Waste water = 0.76.

The rebaselining exercise allows a year-on-year comparison on a like-for-like basis. Since we began reporting in 2006/07, our annual emissions have fallen by over 18%. This reduction compares favourably with the long term downward trend in Scotland's GHG emissions, indicating that we are fulfilling our obligation to contribute to Scotland's ambitious carbon reduction targets. Analysis of these figures indicates the majority of this reduction (almost 15%) is genuine SW changes; the remaining 3% is from changes to the electricity grid emission factors.

This rebaselining exercise supersedes all of Scottish Water's previously published CFPs. It effectively removes changes due to operational boundary differences, changes to carbon accountancy rules and improvements to data collection and allocation. We took the opportunity during the 2014 rebaselining exercise to amend input data from previous years where we were able to identify improvements to our data gathering methodology. A full discussion of Scottish Water's historic carbon emissions and trends can be found on our website at www.scottishwater.co.uk/climatechange

Differences from 2012/13

It is important to understand changes between years and whether they are genuine or caused by a change in the accounting methodology. When we analyse the changes between years we split them into 3 categories. Often more than one category can have an impact on emissions from the same area of the CFP. The 3 categories we use are:

- 'Genuine' – real changes in CO_2e emissions (i.e. from operational changes).
- 'Baseline' – the inclusion of previously unavailable data or the exclusion of previously available data sources. These changes may mask genuine increases and decreases.
- 'Reallocation' – accounting for emissions in a different part of the CFP (affecting the relative size of the divisions in the GHG emissions by activity diagram on page 19).

Our 2013/14 CFP decreased by over 13,000 tCO_2e (over 3%) compared to 2012/13. The 2 main factors main factors in this decrease are:

- natural gas use
- electricity use

Natural Gas

A genuine decrease in emissions of nearly 7,000 tCO_2e can be attributed to a decrease in the amount of natural gas used in combined heat and power plants (CHP). Previously, one of our largest sites operated by a Private Finance Initiative (PFI) contractor used natural gas in a CHP plant, generating power to use on site. Since early in the 2013/14 reporting period, the CHP at this site has not been operational. This has resulted in a large decrease in the natural gas used.

Electricity

Emissions associated with grid electricity use decreased by over 6,000 tCO_2e compared to 2012/13. 2 factors caused this.

The emission factor used to calculate emissions from electricity use was lower in 2013/14 than in 2012/13. This caused emissions to reduce despite a small overall increase in electricity use. This would be classed as a baseline reduction.

The volume of waste water treated in 2013/14 was less than in 2012/13 due to lower rainfall. This led to a genuine reduction in electricity used in waste water pumping and treatment. Elsewhere in this Sustainability Report we highlight some of the energy efficiency initiatives, and we hope to see further reductions in usage in the coming years.

Other changes from 2012/13

In addition to the main changes outlined above, several minor changes were observed in the 2013/14 CFP. These include:

- The lower rainfall mentioned above not only led to lower flows in our sewers, but also lower flows in the environment. This meant less water was available for the production of hydro power. There were also some operational issues that contributed to reduced energy production. As we were unable to produce and export as much renewable electricity, the reduction in emissions from this element was less compared with previous years.
- Sludge process emissions increased by nearly 1,500 tCO_2e. This can be attributed to an increase in the amount of sludge treated by anaerobic digestion, leading to an increase in associated emissions.

- Emissions relating to the use of 'other fuels' (such as gas oil, kerosene, propane, diesel and petrol) increased by over 1,000 tCO_2e. These types of fuel are used in mobile plant on an emergency or ad hoc basis, so amounts used can be quite variable from year to year dependent on circumstances.
- Emissions relating to administration saw a genuine reduction of over 170 tCO_2e. This was due to reduced natural gas and propane use. These fuels are often used for heating. The mild winter of 2013/14 may explain this reduction.

Conclusion

Once completed, our carbon footprint was externally verified[6] by a consultancy experienced in GHG inventories, who stated:

'The data quality of the 2013/14 Scottish Water carbon footprint has improved compared to previous years, especially with regards to:

- Increased understanding of the assumptions behind allocations and calculations within the workbook, leading to more comprehensive data collection; and
- Having an auditable methodology statement provides further assurance as to the correct application of the methodology'

Additionally, the rebaselining exercise provides a better understanding of the overall direction of our CFP; enabling us to better manage our carbon reductions.

The continued downward trend seen in our 2013/14 CFP has been largely attributed to decreases in the amount of natural gas used and in grid electricity emission factors. These factors are dependent to a large degree upon weather conditions and the relative prices of fuels used for electricity generation. Therefore we may see some reversal of these reductions in 2014/15 if we have a longer or colder winter, or if we see an increase in the grid electricity emission factor.

The impact of lower rainfall on our waste water pumping requirements and ability to generate hydro electricity, along with the mild winter reducing our gas use, are excellent examples of how a changing climate can affect our CFP. With more extreme or frequent weather events expected as a result of climate change, we can expect to see more variability in our CFP in future.

[6] In accordance with Part 3 of the British Standard BS EN ISO 14064-3:2012 Specification for guidance for the validation and verification of greenhouse gas assertions

Energy

Overview of direct impacts

Under our 4-point energy management and development strategy described in the Reducing our Energy Consumption chapter, we are taking the following actions:

- We are reducing consumption by ensuring that plant and machinery are well maintained and appropriate for the job. We are also increasing knowledge of energy management within operational teams, to promote sustainable practices.
- We are increasing our renewable energy capacity with the development of new sites for hydro (water) power. We have also installed a number of small and medium sized wind and photovoltaic (solar) schemes.
- Our energy purchasing strategy, whilst not directly reducing consumption, is designed to protect our customers from rising energy costs.

Overview of indirect impacts

Scottish Water hosts third party wind schemes on land we own, and we are working with several developers on other sites. In some cases we will use energy from these sites to offset our grid electricity consumption. Where this is not practicable, the energy will be fed into the national grid and contribute to the reduction of emissions nationally through 'decarbonisation' of the grid.

	2009/10	2010/11	2011/12	2012/13	2013/14
Financial indicators (£k)					
Total energy expenditure	38,702	40,975	37,421	39,617	44,007
CRC gross expenditure (2011 onwards)	n/a	n/a	2,684	2,970	2,940
Expenditure on official business travel	7,252	7,636	8,812	9,115	9,091
Non-financial indicators (kWh)					
Electricity – non-renewable	460,763,340	440,735,205	443,243,018	446,069,836	447,744,042
Electricity – renewable	4,615,382	8,164,511	9,039,714	8,978,611	7,496,190
Gas	12,239,827	15,301,956	10,604,587	12,538,051[7]	12,089,558

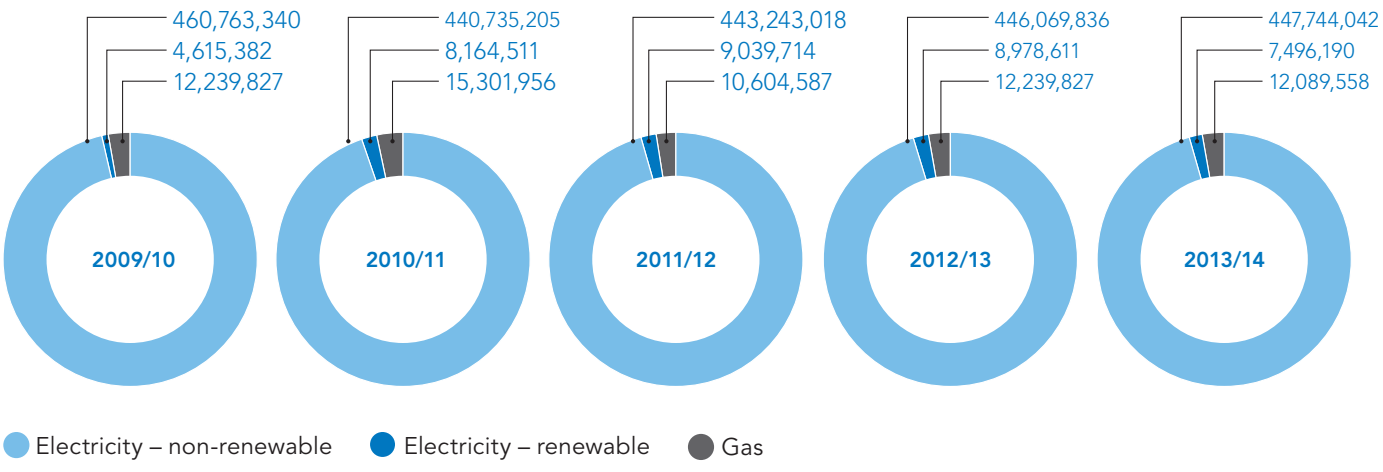
[7] An error in the 2012/13 report led to the wrong gas value being reported. This is the correct value.

Total energy expenditure has increased compared to previous years, this can be attributed to an increase in the cost per kilowatt hours (kWh) paid.

The non-financial figures exclude Business Stream and Horizons. Renewable energy figures include hydroelectricity, CHP (combined heat and power), some wind and some photovoltaic (solar).

The amount of renewable energy decreased due to lower flows for hydro electricity generation and operational reasons. This reduction correlates with the increase in grid electricity used.

Energy consumption (kWh)



Waste

Overview of direct impacts

We have continued our successful waste campaign, which has seen the roll out of new bins to our smaller offices and depots, allowing segregation of paper, plastics and cans in line with our main sites. This has resulted in an increased proportion of our waste being recycled and an overall reduction in waste sent to landfill.

Site specific communications allowed us to engage our people and ensure a better understanding of the new waste regulations. Engaging with our contractors and setting clear expectations has also resulted in increased reporting, leading us towards sustainable waste management.

Overview of indirect impacts

We have continued to work closely with our contractors to recover resources from our waste streams. The emphasis has been on minimising waste, re-using where applicable.

Looking at ways of re-using materials that would otherwise go to landfill allowed us to continue trialling new ways of working, including continuation of the 'structural materials for reinstatement' and 'hydraulically bonded materials' trials, mentioned in the Sustainability Report 2013. As well as the immediate benefit of reducing waste to landfill, our experience shows a reduction in lorry movements, energy use and, consequently, in carbon footprint.

		2011/12	2012/13	2013/14
Financial indicators (£k)				
Total disposal cost		**9,306**	**8,197**	**12,635**
Hazardous waste	Total	n/a	n/a	n/a
Non-hazardous waste	Landfill	3,846	3,885	8,458
	Reused/recycled	5,457	4,310	4,175
	Incinerated/energy from waste	3	2	2
Non-financial indicators (tonnes)				
Total waste		**284,973**	**130,495**	**119,821**
Hazardous waste	Total	24	913	21
Non-hazardous waste	Landfill	84,009	27,330	18,226
	Reused/recycled	200,900	102,228	101,551
	Incinerated/energy from waste	41	25	23

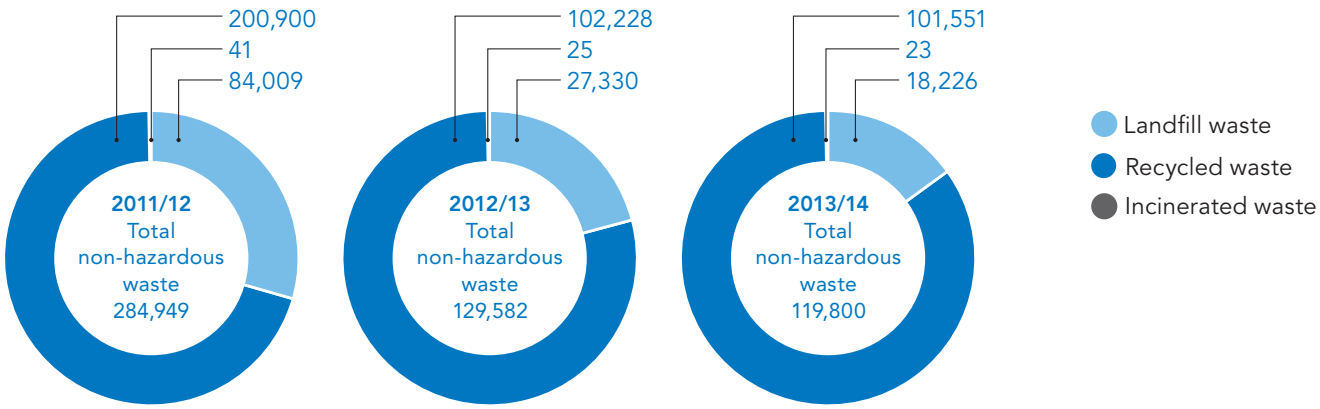
Financial data for past years has been revised using an improved methodology that more accurately reflects costs incurred by the different routes. Construction and demolition (C&D) waste is included in non-financial data, but excluded from financial data because it cannot be extracted from total project costs. Disposal costs of hazardous waste are not recorded separately, so are included in total waste disposal costs.

The sharp increase in costs of waste to landfill in 2013/14 are due to an increase in landfill tax rates.

The reduction in total waste produced is largely due to a decrease in office and C&D wastes, leading to approximately 30% reduction in waste to landfill.

The majority of hazardous waste reported in 2012/13 was from a single project that is now complete. Therefore our assumption in 2012/13 that similar volumes of hazardous waste were produced in previous years is likely to be incorrect.

Non-hazardous waste volumes and disposal routes (tonnes)



Water

Overview of direct impacts

As part of our Water Efficiency Plan we recognised that, not only should we encourage our customers to become more water efficient, we should understand and make improvements in our own water use as well. Water audits were carried out at our larger offices, highlighting a number of opportunities to reduce wasted water. A programme of work was then carried out to regulate flows and reduce toilet flush volumes at 11 of our largest offices.

It is likely further savings can be made at our treatment works and this will be addressed in the future.

Overview of indirect impacts

During summer 2013 we ran a regional water efficiency campaign in Dumfries & Galloway to give customers information on how to use water wisely in and around their homes and businesses. This local campaign included advertising on the South West Sound radio station, where our 'use water wisely this summer' campaign message supported the daily breakfast weather report.

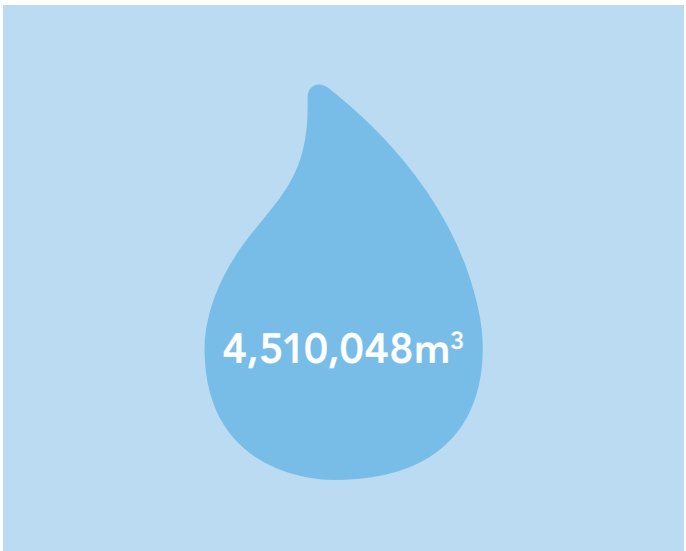
Concurrently, we launched our first 'Play your part, be water smart' water efficiency campaign. This campaign, run both internally with Scottish Water employees and nationally with customers, asked everyone to play their part to be water smart by requesting a shower timer to help them enjoy a short (4 minute) shower. Each person in Scotland uses an average of 150 litres of water every day, nearly a third of which is used for baths and showers. The shower timer not only helps to use water wisely, it can also help to save money on energy bills[8] by heating less water, and to reduce our impact on the environment and water resources.

		2011/12	2012/13	2013/14
Financial indicators (£k)				
Water supply costs		3,622	3,653	3,594
Non-financial indicators (m^3)				
Water consumption	Supplied	4,521,487	4,563,922	4,510,048
	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 businesses.

The water consumption figures relate to the water we use in the operation of our business, not the water we supply to the communities of Scotland.

Water usage 2013/14



[8] Research by the Department for Energy and Climate Change shows around 18% of domestic energy use is for heating water.

How our industry is run

Regulators provide assurance that Scottish Water meets the interests of our customers, protects the quality of drinking water and the environment, and is accountable for our performance.

The water industry in Scotland is regulated as shown in the diagram on this page.

The Scottish Parliament
Holds Scottish Water and Scottish Ministers to account and regularly calls executives to it committees to give progress updates.

The Scottish Government
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 Scottish 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 Futures
Customer representation responsibilities transferred to Consumer Futures in May 2013 from Consumer Focus Scotland. Responsible for representing the views and interests of Scottish Water customers and is a statutory consultee for matters relating to the Scottish water industry. Consumer Futures became part of Citizens Advice Scotland on 1 April 2014 (www.cas.org.uk).

Customer Forum
Responsible for ensuring that customers have a clear voice in the business planning and price setting processes and at the heart of key decisions that affect the services Scottish Water customers pay for.

Other regulators
Like other companies and utilities, Scottish Water is also regulated by a variety of other bodies such as the Health and Safety Executive (HSE), Environmental Health Officers and the Scottish Road Works Commissioner.

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