

Corporate Responsibility and Sustainability Report 2018/19

This report reflects our nine sustainability themes and tells more of the story behind our operational performance for the year ending 31 March 2019. Our second [Environment, Social and Governance \(ESG\) statement](#) brings together four years of key ESG measures in an accessible and transparent format.



Welcome

Read introductions from our Interim Chairman and Sustainability Director and find out how we're becoming a more sustainable business.

[Find out more](#) ➔



Water, a precious resource

Discover how we're actively managing our current water resources and what we're doing to plan for the future.

[Find out more](#) ➔



Sustainable drainage and wastewater management

Read about how we're working hard to make sure our sewerage network and treatment works are as resilient as possible.

[Find out more](#) ➔



Addressing climate change

Learn about our response to climate change including self-generation of renewable electricity and our 2030 net zero carbon emissions commitment.

[Find out more](#) ➔



Ensuring responsible operations

Read about how we're being a good neighbour and our positive contribution towards the Sustainable Development Goals.

[Find out more](#) ➔



Putting our customers first

Find out about the various support services we provide for our more vulnerable customers and what we're doing to improve customer service.

[Find out more](#) ➔



Delivering efficient operations

Find out how we're building a diverse supply community and how we're reducing reliance on natural resources by contributing to the circular economy.

[Find out more](#) ➔



Sustainable and safe workforce

Discover more on our industry leading health, safety and wellbeing approaches and how we strive to recruit and develop the best people.

[Find out more](#) ➔



Long-term sustainable financing

Read about how we're increasing resilience and diversity in our funding portfolio and making our financing more sustainable.

[Find out more](#) ➔

Welcome

We provide the essential service that's at the heart of daily life, health and enjoyment to 15 million customers in London and the Thames Valley area. We aim to offer our service in the most sustainable way possible. For us, that means we think about what's right for our customers and employees, how to make our business as efficient as possible and how we can best protect the environment.



Chairman's introduction

Providing the essential services of high-quality water and safe water treatment to our customers, every day, is our fundamental purpose. We are committed to being socially responsible in the communities we operate in and to the employees we rely on to deliver our services. We're also committed to protecting the environment we all rely on and enjoy. Sustainability is crucial to the delivery of these essential services over the long term.

This Corporate Responsibility and Sustainability (CR&S) report will tell you more of the story behind our operational performance for the year ending 31 March 2019 in line with our nine sustainability themes and includes a wide range of detailed case studies showcasing what we do. More details of how we've done against our operational targets can be found in our Annual report and performance report, Building a better future.

We have submitted our business plan for 2020 to 2025, an important step forward in the delivery of our purpose, to build a better future for our customers, our region and our planet. As well as being based on insight from over one million customers, it comes with resounding customer and stakeholder support. There are some challenging targets in our submitted business plan around pollution incidents, leakage and customer bills.

As a responsible company with long-term shareholders, operating in a monopoly sector, we recognise we have a special duty to our customers and the environment. We're working with Ofwat on our business plan to secure the right outcome for our 15 million customers and to build a better future.

We've been building on our strong performance in health, safety and wellbeing, reduced pollutions and sewer flooding. We contribute positively to the circular economy by self-

generating renewable energy, recycling treated sewage biosolids to land as a fertiliser for crops and creating synthetic aggregate from a by-product of the waste treatment process.

We also signed an innovative £1.4 billion 5-year Revolving Credit Facility (RCF), which links our interest rate to annual performance against Environment, Social and Governance (ESG) metrics and became the first UK corporate to tie the interest rate on the RCF to our Infrastructure Global Real Estate Sustainability Benchmark (GRESB) score.

We have identified five strategic priorities which underpin the delivery of our vision for our customers:

- Brilliant customer engagement
- Data to insight to action
- Resilient systems and assets
- Environmental protection and enhancement
- A collaborative and capable team

2019/20 is set to be another busy year, with our key operational focus being to drive cost efficiency, reduce complaints, successfully transition all our customers to our new customer relationship management and billing platform and secure a larger reduction in leakage as we head towards the start of the next regulatory period and the delivery of our plan for 2020 to 2025.

I hope you will see in this report that we're fully committed to driving changes that will really improve the service we provide for our customers and help protect and enhance the environment.

Ian Marchant

Interim Executive Chairman

Sustainability Director's introduction

Becoming more sustainable is a long-term journey of discovery, not a target. There will always be more to learn and more to do as we seek to deliver better outcomes for our customers and for the environment on which all our activities depend. As this report shows, we have made progress in many areas and have ambitious plans to do more in the next investment cycle from 2020 to 2025. But the challenges facing not just water companies but the whole of humanity are so urgent that we need to step up the pace.

Climate change is without doubt the biggest long-term challenge we face. That is why we have joined other companies in our sector in setting a goal of achieving net zero carbon emissions from our operations by 2030. This is twenty years ahead of the current national target, and will require sustained effort and focus to achieve. But it is essential that we play a full part in the collective effort to reduce carbon emissions as fast as possible. At the same time, we have to adapt and prepare for the further changes in our climate that we know are inevitable, ensuring that we can provide services to our customers that are as resilient as possible under all circumstances. This is all the more important since we are custodians of the country's oldest network and serve the UK's capital city, home to the engine room of the economy and a rapidly growing population.

Alongside tackling climate impacts we need to adapt to working in what is becoming known as the 'circular economy'. At one level, this means doing more of what we have always done – striving to be efficient in our use of resources, avoiding waste and recycling wherever

possible. But the next level of ambition is to eliminate waste, regarding the end of every process as the starting point for the next. This includes our existing generation of renewable energy from sewage biosolids and then using what is left as a fertiliser for crops. In situations where we still need to incinerate sewage sludge we are now creating synthetic aggregate from the ash, rather than sending it to landfill.

It is encouraging that we have been able to self-generate 22% of our own electricity needs from renewable sources including sludge, wind and solar power. This helps us reduce our greenhouse gas emissions and energy costs, improves resilience by reducing our reliance on grid electricity and makes better use of valuable resources. But there is potential to do more in all these areas and further options are being explored, including a world-first trial of pyrolysis for sewage sludge, a technique with the potential to support a step-change in our ability to generate renewable energy and minimise waste.

When assessing our environmental impacts, and in seeking improvements, the starting point always needs to be our region's rivers. The water we abstract for our customers comes from them, either directly or as a reduction in the groundwater that feeds them, and we return treated effluent to them from our sewage works. Ensuring that both these processes are carried out to the highest standards is an essential part of our role in society. Every time we fall short represents a significant failure, which is why we now have a goal to cease abstractions from vulnerable chalk streams and to reduce the number of pollution incidents to zero. We are making progress but recognize that we have much more to do in both of these areas.

Looking at rivers more widely, our Smarter Water Catchment approach is fundamentally changing the way we look at environmental protection and enhancement. Through working in partnership with NGOs, farmers, Local Authorities, the Government and other companies in our region, we want to do more to make a positive difference for the rivers we rely on and the communities who enjoy them. For example, reducing chemicals leaching from farmland into rivers improves river quality, benefits local ecosystems and means there are less contaminants to remove during treatment for drinking water.

As the owners of almost 7,000 hectares of land, we are responsible for a wide range of natural habitats and associated wildlife. Having assessed each of our sites, we have identified the 253 of greatest biodiversity value, covering a total area two and half times the size of Heathrow airport, and established their current and potential biodiversity interest. We have committed to achieving a 5% net gain against this baseline, over the next five years, through activities such as planting trees and hedgerows, changing mowing regimes to encourage wildflowers and digging new ponds.

In all these ways we are becoming more sustainable. But we will always face the challenge of spending our customers' money as wisely as possible. This means we must be efficient in everything we do and guided by evidence of genuine need when assessing priorities. We will always strive to do our job as responsibly as possible, in line with the long-term interests of our customers and the environment. But we know that being responsible is not sufficient. We also need to be responsive and to deliver public value in everything we do. I hope you will find this report of interest. And if we are missing something, or falling short, [do let us know](#).

Richard Aylard CVO
Sustainability Director

Becoming more sustainable

We're on a journey of becoming a more sustainable business. Sustainability is an increasingly important consideration as we seek to strike a balance between the level of service we provide to our customers, our impact on the environment and communities, the cost of customer bills and future investment in the business. We're proud of the progress we've made in the last year and continue to work hard to deliver the desired results for our customers and the environment.

Our commitment to becoming more sustainable is visible in our [sustainability policy](#), with all our business activities underpinned by our nine sustainability themes:

- Water, a precious resource
- Providing sustainable drainage
- Climate change adaptation
- Mitigating climate change
- Ensuring responsible operations
- Enhancing customer inclusion
- Delivering efficient operations
- Sustainable and safe workforce
- Long-term sustainable investment

This Corporate Responsibility and Sustainability (CR&S) Report provides an update on our progress across these themes and emerging sustainability and corporate responsibility response. Our Sustainability Director, Richard Aylard, and the Executive team have responsibility for the creation and delivery of our sustainability policy, with oversight from our Board.

We monitor our business and operational performance carefully against our 2015-20 business plan outcomes, using performance commitments. Our performance is monitored by our board of directors and senior management on a monthly basis to help us make effective decisions. Take a look at our performance in our [Annual Report and Annual Performance Report 2018/19](#).

External sustainability benchmarking

As well as our regulatory and financial submissions, our Environment, Social and Governance (ESG) performance is independently benchmarked to provide insights into our sustainability performance. We have again been recognised for our commitment to sustainability by the influential Global Real Estate Sustainability Benchmark for Infrastructure (GRESB) survey. [GRESB](#) is an independent external ESG benchmark which assesses the sustainability performance of real estate and infrastructure portfolios and assets worldwide.

In the latest GRESB report, we retained our top five-star status. We came first out of seven participating water and sewerage companies in the world, and sixth out of 236 companies in Europe. Overall, we were ranked 13th out of 393 world infrastructure firms. We scored 86 out of 100, the same as last year, which puts us in the top three per cent.

Customer and stakeholder engagement

Our activities have significant impacts on our customers, stakeholders and the environment. We recognise that the stakeholders who represent these interests have a wide range of views and expectations and we aim to engage with them, understand the needs and expectations and respond to their feedback. We're constantly engaging with customers, political representatives, Non-Governmental Organisations (NGOs), community groups and other key stakeholders through a variety of channels:

- Meeting with them both formally and informally to understand their concerns
- Carrying out public consultations on our key projects and plans
- Communicating and explaining our plans for both large and small engineering projects
- Working in partnership with stakeholders to explore issues and deliver projects

Our work includes one-to-one briefings, round-table discussions, undertaking surveys, facilitating focus groups, online consultations, and site visits. Discussions cover strategic issues, such as market reform in the water industry and water resource management, as well as topics of local interest. Our long-term engagement programme can be found on pages 75 – 77 in our [Annual Report and Annual Performance Report 2018/19](#).

Annual stakeholder review 2018

Each year we host a stakeholder review to provide an opportunity for our stakeholders to raise issues of interest and concerns about any aspect of our business. Around 100 stakeholders attended our 2018 event and had the opportunity to hear first-hand how the business has performed over the past 12 months and to feed back to our senior management teams, the Board and executive team. Anne Heal, chair of Thames Water's Customer Challenge Group, spoke directly about her team's work in holding the business to account and praised the company for listening to customers and, crucially, acting upon much of what it has heard. At the question and answer session, the executive team were joined by non-executive director Alistair Buchanan who gave his initial impressions of the business. Attendees also attended more detailed sessions on helping customers who need it, the company's role as a custodian of the environment, and building water and wastewater resilience.

Shaping our long-term plans

What our customers want defines what we do and it's important that we build and develop our long-term plans around customer feedback. In September 2018, we submitted our business plan for 2020 to 2025 – otherwise known as Price Review 19 – which was based on insight from one million customers. The plan is set to deliver a comprehensive package for our customers, based on what they have asked for. A revised plan was resubmitted in April 2019, balancing feedback from Ofwat, customers and other stakeholders. Through engagement and review, we work to ensure that all material issues to the successful delivery of water and wastewater services are captured and considered. We received support for our revised plan from a wide range of organisations, including environment NGOs, developers, business lobby groups, local authorities and organisations representing customers in vulnerable circumstances.

We've also submitted our statutory Water Resources Management Plan which sets out how we will provide a secure and sustainable supply of water for our customers 80 years into the future and support economic growth. More information about our [Water Resource Management Planning](#).

Engaging with public debate

It's been another busy year in UK politics and at a national level we've been working hard to actively contribute to the debate around key issues for us including the government's 25 Year Environment Plan, the UK's decision to exit the European Union (EU) and the debate on the future ownership of the industry.

Given the uncertainty around Brexit, making sure we're ready to protect our customers and the environment, whatever the outcome, has been a priority throughout the year. We've been preparing in two main ways:

1. We have been working to minimise any potential short-term impacts on our operations and support functions following our exit of the EU. We have taken a leading role in governmental, regulatory and cross-industry discussions, and carried out a full review of our systems to ensure any potential impacts are mitigated.
2. We have been playing an active role in policy discussions and replied to several government consultations this year, most notably the Environment Bill. EU environmental legislation has helped improve the state of the environment in the UK, in particular its rivers, and we want to see the same if not better standards implemented in law as and when we leave the EU.

We're committed to reducing our reliance on single-use plastic in the business, reducing its impact on the environment as well as helping the UK achieve its target of eliminating all avoidable plastic waste no later than 2042. [Read about how](#) we're making a start on the plastics challenge. Playing our part in the plastic revolution, we're working with our customers to promote the benefits of consuming our high-quality tap water instead of using water bottled in single-use plastics. In partnership with the Mayor of London, we are in the process of installing 100 drinking water fountains across the capital allowing Londoners and visitors to refill their own re-usable bottles with free top-quality tap water while reducing plastic waste. Find out more about the [drinking water fountains](#).



Following years of raising awareness of the problems associated with flushing the wrong things down toilets and drains, we're delighted to see the launch of the "fine to flush" standard and the first product from Natracare that meets the standard, with others being tested. The new standard gives clear guidance to manufacturers and consumers about which products are and are not safe to flush. In conjunction with our Bin it, don't block it campaign we believe the standard will drive a reduction in the use of plastic-based wet wipes, which not only clog our sewers, but pollute rivers and oceans.

Water, a precious resource

Every day we supply an average of 2.7 billion litres of safe high-quality drinking water to nearly ten million people across London and the Thames Valley. It's our statutory duty to provide this precious resource to everyone who needs it. We aim to do this in a way that has minimal impact on the environment – while keeping our customers' bills affordable and meeting the needs of an ever-growing population.



Managing leakage

Reducing leakage is one of our highest priorities. It's a massive task given the size, age, location and complexity of our network, and we must balance leakage reduction against its impact on customers' bills. We publish [monthly leakage reports](#) to ensure transparency of our performance.

Although leakage is 27% lower than 15 years ago, we were still significantly above the leakage target we set ourselves for the end of 2018/19. The year has thrown us some challenges including the impact of the "freeze thaw" and the exceptionally hot summer in 2018 causing a spike in leakage. Despite this, we managed to achieve a small reduction in leakage since last year. We recognise that our performance needs to improve further and that we've not met expectations, finishing the year at 690 MI/d (compared to 695 MI/d in 2017/18).

We need to accelerate recent improvements as we strive to achieve our 2019/20 target of 606 MI/d. We have completely overhauled our approach to leakage, including investing £376 million this year on leakage prevention and network maintenance activities and £1.7 billion for the current regulatory period. We've changed the management structure, increased the number of crews dedicated to fixing leaks by 21%, amended supply chain arrangements and introduced new processes allowing us to fix over 71,000 leaks this year. While the extreme weather events had an impact on our ability to reduce leakage, we saw a promising end to the year, with a 13% reduction between the last week of March 2018 and the same week in 2019.

We've learned important lessons from the freeze thaw incident in March 2018 and 96% of the commitments we outlined in our written response, submitted to Ofwat in September

2018, are either completed or on track. We've also seen a 60% reduction in large bursts causing property flooding since committing to invest c.£100 million extra in our largest trunk water pipes during this regulatory period. There's still plenty to do and although we're not yet where we want to be, we have made significant improvements.

See our [full infographic](#).

Leakage in numbers

The issue



By 2045 there will be a water shortfall of 360 MI/d (million litres per day)

Our performance



690 MI/d
2018/19

Our leakage reduction targets

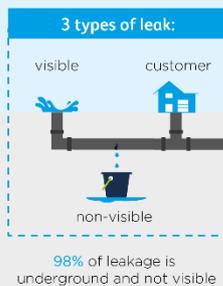


606 MI/d
2019/20



15% by 2025
50% by 2050

The challenge



31,550 km of water pipes

62% of our pipes are over 60 years old

Our progress in 2018/19

21% increase in dedicated crews fixing leaks

20% increase in detection gangs

£200 million 8-year leak detection contract

23% increase in find and fix leakage repair

Over 71,000 leaks repaired

Metering

We're fitting water meters through a range of different programmes to help manage the projected shortfall in supply in our area which has been classified as seriously water stressed; which means demand for water is higher than the amount available. Metering is the fairest way for customers to pay, and our industry leading smart metering programme is also helping to reduce leakage and per capita consumption.

Smart metering data allows us to engage with our customers to help them understand how much water they're using, lets customers track their water saving activities and take control of their bills. Hourly smart meter data allows us to quickly and accurately identify customer side leakage. We can identify where water is continuously flowing through a meter for a sustained period of time which indicates there may be a leak, either on the customer supply pipe or within the home.

We're fitting smart water meters at all customers' homes in our region, starting in London. In 2018/19 we installed 92,394 new smart enabled meters bringing to total to 326,768 and providing a leakage reduction of 12.13 MI/d in 2018/19.

We've also installed 27,183 acoustic loggers, which help pinpoint leaks in our water infrastructure and this new technology detected 45.68 MI/d during 2018/19.

Reducing demand with water efficiency

Alongside metering and leakage management, encouraging water efficiency and delivering water savings programmes are essential parts of our long-term plans to manage water more sustainably. Our established programme promotes responsible use of water among our customers and highlights the benefits of saving water at home and in the workplace. We're delivering water efficiency initiatives for households, businesses, schools, local authorities and housing associations. It is important we continue to engage with industry leaders that influence national projects and local legislation, and support and drive positive change with development of the Water Efficiency Strategy and Per Capita Consumption (PCC) consultation for the UK alongside Water Efficiency Leadership and Network steering groups.

Smarter visits

We can help save water and reduce our customers' water and energy bills with our free Smarter Home Visits. They are designed to help customers understand how and where they can reduce water usage in their homes, including installing water saving devices and understanding how to detect a 'leaky loo'. The programme has led to a 19.6MI/d reduction in the amount of water customers are using since it was launched in 2015. We completed our 250,000th visit just after the close of the 2018/19 financial year.

Our free Smarter Business Visit programme involves qualified plumbers visiting organisations to review kitchen and bathroom facilities. They find and fix internal leaks, most commonly 'leaky loos', and recommend best solutions for the business and fit suitable water saving devices such as dual flushing systems and tap inserts. The programme has been extremely successful with over 6.7 million litres of water per day saved. It has also avoided the need to bring a water production site back into use at a cost of £9 million which would produce five million litres per day.

Online water calculator and water saving devices

We're improving our website and making it easier to access online tools and find advice on how to save water. Our world leading [online water and energy calculator](#) helps households identify their water consumption, gives household specific advice, tips and recommendations on water saving devices. This is linked to water and energy costs and savings associated with hot water use in the home. This is also the first calculator to identify personal water use away from the home (e.g. at the gym). We continue to offer all household customers [free water saving devices](#), which can be ordered online, over the phone and by post and sent directly to customers homes for self-installation.

Local Authority and Housing Associations

We continue to work with housing providers to deliver in-home visits for customers who need help saving energy, water and money. The collaborative nature of these partnerships means we can incorporate water efficiency into existing home-visit programmes and we have visited 5,255 households resulting in water savings of 393,600 litres/day in 2018/19.

Water efficiency schools programme

We have continued to deliver our school education programme for water efficiency, running across 50-80 schools each year. Each school that takes part in the programme gets practical and educational benefits, including a multi-visit programme of interactive workshops and a free Smarter Business Visit to reduce the schools water use. Over 5,000 students took part in our schools programme during 2018/19.

Partnership with Action for the River Kennet (ARK)

Since 2011, we've been working with ARK to show people how valuable water is. As part of an area-wide campaign, ARK has been running free 'Water Matters' activities and projects for schools and community groups in the Kennet catchment. It's a hands-on education programme including raising trout and eels in special tanks in classrooms which are then released into local rivers. Over 90 schools have benefitted from ARK's visits and over 1000 children have learnt about the challenges we face when sourcing drinking water from rivers, and the steps they can take to protect wildlife around local watercourses.

Incentives Scheme

In partnership with Greenredeem, we've developed a pioneering and innovative online incentive scheme to reward customers when they save water. This scheme establishes baseline water use for participating households and they are rewarded with points if their use reduces. These points can then be spent on rewards, a monthly prize draw or donate money to charity.

Water efficiency communications

Water efficiency is part of our day to day communications to our customers through social media and other channels. During summer 2018, we ran an innovative campaign using influencers on social media. Targeted water efficiency messages were shared on Twitter and Instagram by influencers on various subjects like cooking, fitness, gardening and parenting.

Drinking water quality

We're committed to ensuring the 2.7 billion litres of fresh drinking water delivered direct to the homes of nearly 10 million customers across London and the Thames Valley every day is always of the highest quality. We conduct over 400,000 tests each year from reservoirs, treatment works and randomly selected homes and businesses. Samples collected from customer properties have been consistently achieving 99.96% compliance with our water regulator, the Drinking Water Inspectorate's (DWI) tests. The samples that fail the very stringent requirements are well below anything that would cause any harm to public health.

We're working hard to move closer to 100% compliance with water quality regulations. We're working with the DWI to improve hazard reviews and increase investment to eliminate the risk of cryptosporidium; ensure the highest levels of monitoring and control; and make sure our employees have the right capability to maintain exceptional water quality.

To maintain our high standards of drinking water quality, we've continued to focus on identifying areas of our water network where there's a higher risk from lead pipes. Lead pipes may have been used before the 1970s to connect individual properties to our network of mains. In total, 12,500 lead communication pipes – the largest in a single year – were identified and replaced across London and the Thames Valley in 2018/19. We've been working hard over many years to mitigate the potential risk to public health from the presence of lead pipes, and we've introduced specific initiatives and programmes, agreed with our customers and approved by our regulators, which have been highly successful. We have included a lead pipe replacement programme in our business plan for 2020-25.

Catchment management

During 2018/19 we've continued to explore more sustainable ways to reduce the amount of pollutants like pesticides and nitrates which get into the rivers and groundwater sources in the catchments where we abstract water. This 'catchment management' approach aims to tackle the problem of pollution at source, avoiding the need for additional water treatment which would affect the environment and our customers' bills.

We're launching our Smarter Water Catchments initiative as a way of looking at and protecting the environment in each river catchment to deliver multiple benefits such as enhancing biodiversity, creating new opportunities for partnership working and drive efficiency in the way we deliver our water and wastewater services. Learn more about our [Smarter Water Catchments initiative](#).

We hosted a catchment management summit, with 100 companies committing to work together to improve river quality. Recognising catchment solutions are multi sector and highly interconnected, in May 2018, along with 50 organisations such as Coca-Cola and Asda, we made a pledge to improve catchment management to address increasing pressures to UK water.

The Smarter Water Catchments initiative is rooted in collaboration with farmers, businesses, Government and NGOs. In part, projects are designed to reduce contamination from farmland, forestry activities, roads and industrial areas. While delivery starts in earnest in 2020, during the year we have built relationships with catchment partnerships and worked on agreed catchment plans.

In partnership with farmers, we trialled a mutually beneficial initiative where soil is inverted rather than ploughed to avoid nutrients being washed into water sources. We've worked with local communities to improve data collection about the health of our rivers, for example, working with Earthwatch on the River Evenlode and River Chess to measure phosphorus and nitrates, and to count species.

Developing resilient water resources

Water is essential for everything we do - from having a drink, to cooking, washing our clothes and flushing the toilet. It's also essential for a healthy environment and a prosperous economy. Many people think there's plenty of water in the UK, but the South East of England is one of the driest parts of this country, and London gets less rain than Rome, Dallas and even Sydney. Our water supplies are being stretched as the number of people living in our area increases, at the same time as the amount of water that we can take from rivers and underground sources is reducing due to changes in the climate and the need to protect the environment.

Managing current water resources

First and foremost, it's essential that we manage our current water resources efficiently and effectively. We'll do this by:

- **Managing leakage:** Reduce leakage to the challenging targets that are published in our submitted business plan for 2020-2025.
- **Metering:** Continue to roll out of smart meters across our region to help customers understand and reduce the amount of water they use and provide us with vital

information to understand and manage our network efficiently, including pinpointing and tackling leakage.

- Promoting water efficiency: Help our customers to use water efficiently, for example, by offering all customers a Smarter Home Visit which provides a personalised water use audit and free installation of water saving devices. We'll also work with local authorities and housing developers to encourage greater water efficiency in buildings, and with government to set the right framework and incentives to encourage water-efficient behaviour.

Water resources management planning

In combination with managing available resources effectively, we will also need to develop new sources of water. We forecast a significant water resources challenge in our area and the wider south east so it's critically important for us to plan for the long term because the decisions and investments we make now will determine the level of service that we can provide to our customers into the future.

During the year we submitted our draft Water Resources Management Plan, outlining how we will ensure the sustainable delivery of water to our customers over the next 80 years, from 2020 to 2100, in the face of population growth and climate change. We ran a public consultation on the draft plan in spring 2018 and received over 540 representations, as well as other feedback from customers. In October 2018 we published a report explaining our consideration of the feedback and the changes we had made to our draft plan and ran a further consultation providing an opportunity for comment on the changes we had made to our draft plan.

We've reviewed all feedback and produced a document which sets out the comments received and explains how we have taken these into account, alongside new information – [a summary document is available](#). Defra will review our revised draft plan and updated documents, and in consultation with the Environment Agency and other regulators, will decide whether to approve our plan, request further changes to our plan or recommend further scrutiny either through a public hearing or a public inquiry. Read more information about our [Water Resource Management Planning](#).

Security of supply

We're responsible for ensuring we have sufficient water to meet our customers' demands. The security of supply index (SoSI) measures our ability to provide water in a dry year. It takes into account water resources, leakage, demand management and transfers of water that we make to other water companies, to assess our ability to supply water in a dry year.

We saw an improvement in performance during 2018/19, now at 98%, reflecting reductions in dry year distribution input and target headroom in the London water resource zone. Our region is split into six "water resource zones" and the result is attributable to the London water resource zone (WRZ) which was affected by the extreme weather causing higher than expected leakage. The risk remains low and does not affect the other five WRZs in our region.

Abstractions and low flows

About 70% of our water comes from rivers, and the remaining 30% from groundwater sources. Removing this water, a process known as abstraction, is regulated by the Environment Agency (EA) through its abstraction licensing process. During 2018/19, we achieved 99.95 per cent compliance with our daily abstraction licences. The table below

shows our record of compliance with daily licences for public water supply over the last five years:

	2014/15	2015/16	2016/17	2017/18	2018/19
Daily abstraction compliance (%)	99.98	99.85	99.93	99.97	99.95

In 2018/19, we installed eel protection screens at our intakes where we abstract water at Hampton, Surbiton, Hythe End & Farmoor. These screens will help to protect eels from being drawn into our reservoirs and help the recovery of the endangered eel population. We also conducted investigations into the impact of groundwater abstractions at Hawridge for the River Chess and Bexley for the River Cray and undertook river restoration works on the Amwell Magna Fishery.

The Abstraction Incentive Mechanism (AIM) is an Ofwat scheme to reduce abstraction from sources that are considered to be environmentally sensitive. It is triggered when local rivers fall below an agreed flow. We have implemented AIM since April 2016 and have agreed 5 AIM sites with Ofwat and the Environment Agency, which are:

- New Gauge - River Lee
- Pann Mill - River Wye
- Axford - River Kennet
- North Orpington - River Cray
- Pangbourne - River Pang

Last year we complied with AIM at all of these sites despite a dry year in which water resources were a challenge and one of our AIM sites was triggered for significant durations of the year.

Sustainable drainage and wastewater management

We collect and treat 4.4 billion litres of sewage from our 15 million customers and use our sewer network to transport it to one of our 349 sewage treatment works. Wherever possible the solid element of sewage (what we call sludge) is used to produce renewable energy, while the accompanying water is treated to a high standard and recycled safely to rivers and streams. We will work to ensure our sewerage network is as resilient as possible and will take advantage of opportunities to deliver more sustainable drainage solutions.



Sewer flooding and pollution

Sewer flooding can occur when the sewer network becomes overwhelmed during intensive rainfall, or because of a blockage or collapse. Although our sewer networks are largely in good condition, the combined effects of urbanisation, climate change, population growth, modern lifestyles and an ageing infrastructure mean many networks handle much larger volumes of wastewater than they were originally built for. In addition, sewer abuse - when the wrong things are put down the drain - also poses a challenge for our network. Sewer flooding can have a catastrophic effect on customers' homes and livelihoods, as well as posing an environmental risk.

Our performance for Sewer Flooding Other Causes (SFOC), the number of internal flooding incidents excluding those due to overloaded sewers, has improved for the third year running with a 26% reduction since the start of the regulatory period (2015/16). In 2018/19, 1,032 properties suffered sewer flooding – less than the previous year. In 2017/18, 1,062 properties experienced incidents of internal sewer flooding due to other causes.

We've improved in our overall performance for 2018 (calendar year) with a 2 per cent reduction in the number of pollution incidents compared with 2017. During 2018, we had zero of the most serious pollution incidents for the first time in ten years. We continue to improve in our self-reporting of pollutions, which increased from 73 per cent in 2017 to 76 per cent in 2018, above the target set by the Environment Agency. Our compliance with numeric discharge permits saw a slight deterioration in 2018, registering 98.9 per cent (four failures) compared with 99.4 per cent (two failures) in 2017.

Our priorities in the future, as stated in our submitted business plan, include reducing pollution incidents by 30% during 2020 to 2025 and aspiring to reduce the number of incidents to zero in the long term. We're also planning to reduce internal sewer flooding by 20% during 2020 to 2025 to 995 incidents per year.

	2015	2016	2017	2018
Serious pollutions (Cat 1 and 2)*	12	10	10	9
Total pollutions (Cat 1- 3)*	265	357	303	297
Self-reported pollutions (%)**	61	67	73	76

The figures included in the Annual Report (SC2 - total pollutions including consented) are pollution numbers according to our methodology agreed with OFWAT and do not include pollution from surface water outfalls. This accounts for the differences between the figures in the Annual Report and the table above.

** The Environment Agency categorises pollution incidents on a scale of one to four: Cat 1 - major environmental impact, Cat 2 - significant, Cat 3 - minor, Cat 4 - no impact.*

*** Figure represents the percentage of the total pollutions (Cat 1-3) that were self-reported by Thames Water to the Environment Agency.*

Preventing sewer flooding and pollutions

We undertake a range of programmes and activities to maintain and enhance our sewer network to reduce the risk of sewer flooding and pollutions:

Intelligent network

As well as undertaking 602km of planned sewer maintenance, we're increasingly using digital technology to create a more intelligent network and enable more proactive maintenance and repair to help drive a step change in reductions. We've now installed almost 1,000 sewer depth monitors to help us better understand how our waste network is flowing and help reduce pollution incidents. Although in their infancy, we're already seeing positive results with 179 blockages detected by the monitors in 2018/19.

Training

As well as being in the early stages of creating a more intelligent network, we've improved training for customer call agents to help them identify early pollutions. They are being given the tools and 'know-how' to use information provided by the caller, combined with the risk profile of the area as categorised on our pollution risk register, to prioritise the most urgent work. During the year, we surveyed 232 and renovated 27 sewers near railways, to ensure resilience of this critical infrastructure.

Sewer abuse

Following the discovery of the 'Whitechapel fatberg' in September 2017, we worked with the media, stakeholders and customers to raise awareness of the impact of flushing wet wipes down the toilet and pouring fats, oils and grease (FOG) down sinks. We're proactively

engaging customers to change flushing behaviours with our 'Bin it, don't block it' campaign which highlights the dangers of flushing anything other than the three P's – pee, poo and (toilet) paper – down the drains. We've also worked with over 4,300 commercial kitchens including fast food establishments, hospitals and schools to reduce fat disposal down drains and sewers, however, there's still a way to go to eliminate fatbergs. The emergence of the 'concreteberg' in Islington, London, has also helped raise awareness of the cost to customers of this kind of sewer abuse.

Misconnections

Our customers sometimes unknowingly pollute local watercourses by misconnecting toilets, kitchen and bathroom appliances to surface water drains instead of the foul (wastewater) sewer. We estimate that as many as 60,000 properties across our region are misconnected. Property owners could face the risk of being prosecuted and fined up to £50,000 if they don't put it right. In 2018/19, we helped our customers fix faulty plumbing at approximately 797 properties across 44 catchment areas – a total area covering more than 32,000 properties. In these areas we identified 2,324 misconnected appliances. We're continuing to investigate misconnections across other catchments.

London Tideway Improvements

We're working to improve the water and sewer networks across London to make sure they can cope with current and future demands. One of the biggest projects to improve and future-proof our network is the Thames Tideway Tunnel (also known as the "super sewer"). We're working with Tideway (Bazalgette Tunnel Limited) to deliver the Thames Tideway Tunnel. When it's complete, together with the Lee Tunnel, it will prevent millions of tonnes of sewage from overflowing into the tidal River Thames every year from the capital's overloaded Victorian sewer system. The new tunnel will transport sewage to our Beckton treatment works where we'll return treated and safe water to the environment and use the solid sewage waste (sludge) to generate more renewable energy. Learn more about [the tunnel and its progress](#).

Surface water management

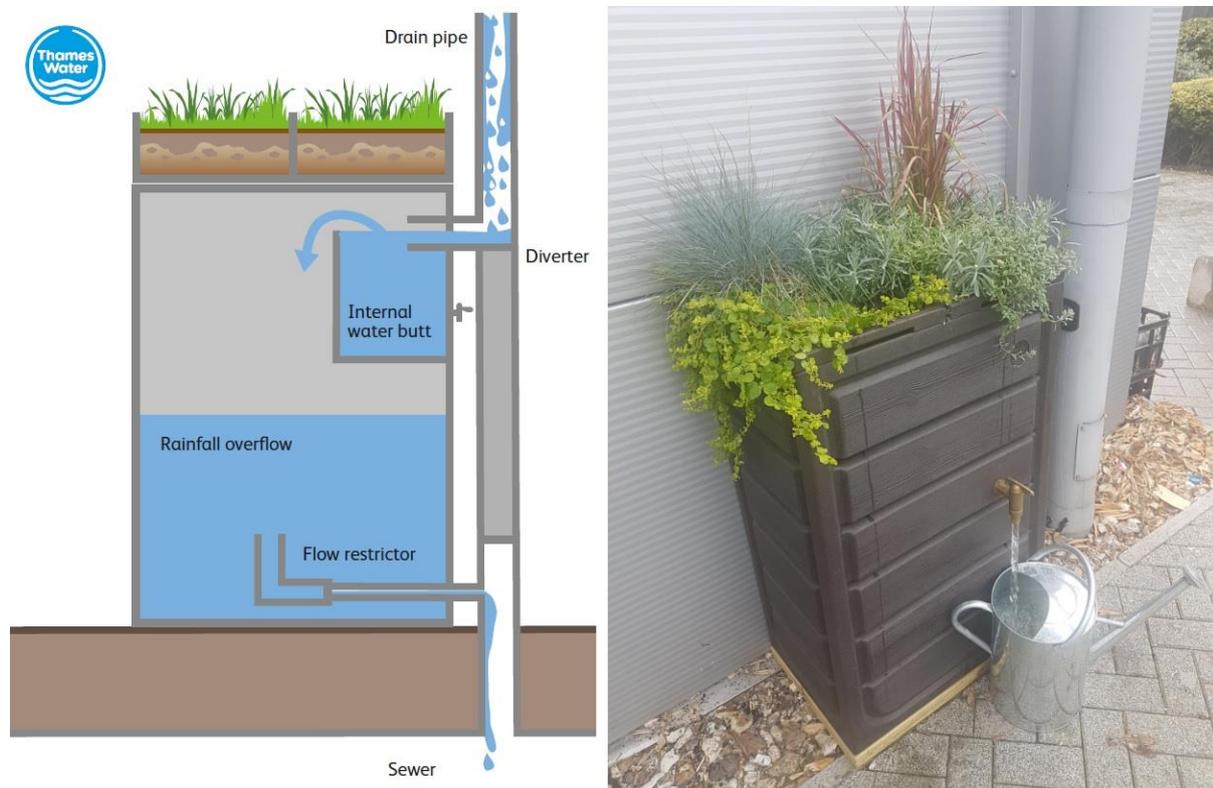
We're working in one of the most densely populated and urbanised regions in the UK, which places a lot of pressure on drainage. Without action, population growth, urban creep and climate change would increase the likelihood of sewer flooding and pollution. We're shifting our emphasis on reducing the volume of surface water entering our sewers with sustainable drainage systems (SuDS), creating capacity to manage future challenges in a more cost-effective way.

Managing surface water at source through sustainable drainage systems allows us to not only tackle flood risk, but also increase resilience against climate change. In 2015, we launched a SuDS programme to disconnect 20 hectares of impermeable land from the combined sewer network - one hectare is roughly the size of an international rugby pitch – and we're on track to deliver this target. Between 2020 and 2025 we're looking to more than triple our target to 65 hectares, providing a wide range of benefits to our customers and the environment beyond that of improving asset resilience.

We're working with government, local authorities, organisations, charities and customers to raise awareness and make sure water is managed more sustainably. We share our data and expertise with local authorities and organisations and contribute to the development of local plans on surface water management plans. We continue to work with Defra, WaterUK and developers on the challenges facing SuDS, helping to raise awareness of sustainable water

use, and managing the impact of new developments on our sewer network. “Blueprint for Water”, a partnership with eight other water companies and 19 environmental organisations, enables us to share principles to tackle issues such as sustainable drainage as well as pollution through joint working. We also use innovative software to explore SuDS opportunities across our region and contribute to the installation of SuDS schemes.

We’ve developed an innovative multi-purpose planter which collects rainfall from the drain pipe before slowly releasing it back into the sewers to help implement sustainable drainage measures for households. The planter, which helps free up capacity in the network during high rainfall, has been designed to be used in residential gardens, with excess water also captured for future uses such as watering the garden. We exhibited the planter at the BITC Waste to Wealth summit held at Veolia Southwark’s waste management facility in London in November 2018, attracting the interest of both HRH The Prince of Wales, and the then environment secretary Michael Gove. We have already installed a planter at Reading Sewage Treatment Works (see picture below) and will be offering them to customers from April 2020.



Sustainable sewage treatment

We’re continuing to work hard to make sure our sewerage network and treatment sites are as sustainable as possible. Once wastewater has been safely treated at our 349 sewage treatment works, the water is discharged from the sites into local watercourse so it’s really important for us to get our treatment processes right, to make sure the watercourses stay healthy. Water quality standards for discharges are set by the Environment Agency and we must pass every discharge quality test to meet our sewage treatment works compliance commitment of 100%.

We did not meet our target of 100% compliance, with four failures at our 349 sewage treatment works with a discharge permit, and as a result we will return £0.12 million to customers at the end of the regulatory period. The failures were at Deephams, Cholsey,

Chertsey and Wolverton Townsend during the first six months of the year – there were no failures during the second six months.

We are continuing to focus on day-to-day performance management of our sites. We completed investigations into the cause of each failure so we could apply the learnings to reduce the likelihood of reoccurrence.

We've reached the closing stages of some critical resilience projects, including a major £267 million upgrade at Deephams sewage treatment works in North London to prepare for predicted population growth and reduce odour for customers living nearby. The project will allow the site to serve an increase in population equivalent of 104,000 to accommodate the predicted population growth until 2031.

Since its original construction at the end of the 19th century, housing developments have moved closer to the works, through population growth and urbanisation, making odour management important for local customers. The new site will drive a 99% reduction in odour emissions. During the project, which saw three sludge 'streams' combined into two more efficient facilities with higher capacity, the safe treatment of the waste of Deephams' current 885,000 population equivalent was critical. In a seamless operation, we refurbished the old plant to maximise capacity before directing flows to one half of the site to allow construction of half of the new works. Once this was completed, flow was transferred into the newly built section to enable construction of the other. Recognised for delivering an innovative, sustainable and creative contribution to London, the project won the coveted 'Greatest Contribution to London' award at the ICE London Civil Engineering awards in May 2019.

Future wastewater planning

We need to tackle a range of challenges including population growth, climate change, land locking of our sites, ageing assets and striving to meet tighter environmental standards. The scale of these challenges means we need to think differently about the future and look far beyond the conventional five-year price review cycles of the water sector. London's wastewater system is immense and complex, and significant changes will take time to achieve.

A longer-term approach is needed to manage risks and embrace opportunities for innovation, which is why we're considering time horizons of 25 and 80 years in a way that reflects water resource planning. The water industry, through WaterUK, has developed an approach for strategic long-term drainage and wastewater management planning (DWMP) and we are applying this methodology to London.

Addressing climate change

The projected impacts of climate change across London and the Thames Valley will compound a difficult situation in which our water resources are already stressed and the population is increasing. We believe that a twin track approach of reducing our greenhouse gas emissions ('mitigation') combined with managing the unavoidable impacts of climate change on our business ('adaptation') is essential if we are to manage the challenges that climate change represents to delivering water and wastewater services.



Reducing our greenhouse gas emissions

One way we're managing the unavoidable impacts of climate change on our business is to reduce our greenhouse gas (GHG) emissions in support of the Climate Change Act 2009. We are working hard to manage our operational GHG emissions by improving our understanding about where they come from and reducing them through becoming more energy efficient and generating our own renewable electricity.

Compared to 1990 levels of 845.8 kTCO₂e, we've achieved a 35.6% reduction in our gross emissions*. We're not able to generate all our electricity needs by ourselves so we source the remainder as renewable grid electricity#. When the purchase of renewable grid electricity is taken into account, the net reduction in our greenhouse gas emissions emission was 67 per cent compared to 1990 levels*#. This means we reduced our GHG emissions by more than our 2020 target of 34% against a backdrop of serving around 3 million more customers. 2018/19 was the second full year of using 100% renewable grid electricity.

Emissions	2016/17	2017/18	2018/19
Gross emissions*	705.9kt CO ₂ e	617.3kt CO ₂ e	544.4kt CO ₂ e
Net emissions**	498.0kt CO ₂ e	277.9kt CO ₂ e	275.7kt CO ₂ e
Operational GHG emissions per MI of treated water	141.2kg CO ₂ e	24.6kg CO ₂ e	20.6kg CO ₂ e
Operational GHG emissions per MI of wastewater treated	225.4kg CO ₂ e	135.3kg CO ₂ e	127.0kg CO ₂ e

* *Scope 1 emissions refer to greenhouse gas emissions associated with the operation of our assets. Scope 2 emissions are emissions associated with the use of grid electricity.*

The grid electricity we import is 100% Renewable Energy Guarantee of Origin (REGO) accredited. We use the government's REGO accreditation scheme to demonstrate that the electricity we consume is from a renewable source.

Renewable electricity generation

Generating our own renewable electricity helps us reduce our greenhouse gas emissions, avoids the equivalent of around £32 million a year in energy costs, improves resilience by reducing our reliance on grid electricity and makes even better use of valuable resources.

In 2018/19, we generated 22 per cent of our own electricity needs from renewable sources including sludge (281GWh), wind (5GWh) and solar power (12GWh). We have two wind turbines at sites in east London and Solar Panels at 43 sites, including Europe's largest floating solar panel array at our Queen Elizabeth II Reservoir. The low carbon and renewable energy produced by the floating solar array is used to help power the nearby Hampton water treatment works.

Most of the renewable electricity we self-generate comes from the treatment of sludge as it is an energy rich resource with a high calorific content. We've been producing renewable energy at our larger sewage works since the 1930s, mainly with Anaerobic Digestion (AD). By investing in our infrastructure and using a combination of methods and new technologies such as Thermal Hydrolysis Process (THP), we're able to increase the amount of renewable energy produced from sludge.

Over the past five years we've delivered a 15 per cent reduction in grid electricity consumption, and we're planning to increase this to 23 per cent by 2020. We are continuing to find ways to use less energy by being more efficient, making more of our own renewable electricity, and continuing to invest in low carbon operational processes and assets to achieve our challenging goal to become zero net carbon by 2030 and help mitigate the impacts of climate change.

Net zero carbon

We believe it is important to set our sights high to help keep global warming below 1.5°C. In April 2019, we set ourselves a very challenging goal to become zero net carbon by 2030 for our operational activities, underlining our commitment to mitigate climate change twenty years ahead of the recently announced Government target. We will be developing our plan over the next few years of how we will achieve this goal.

Managing the impacts of climate change

The impacts of climate change are already being felt by our business. In simple terms climate change is a long-term shift in the frequency and intensity of extreme weather. Over the past few years alone, climate change is likely to have contributed to several extreme weather events which have all significantly affected our ability to deliver our service to our customers, including:

- Hottest summer on record for England in 2018
- Late February and early March 2018 – 'The Beast from the East'
- October 2016 to March 2017 - the driest period since 1995/96

- In 2014 - the wettest English winter since 1766
- The floods of 2013/14
- In 2012 - the wettest summer for 100 years
- Drought in 2010/12

It's widely accepted that climate change is a serious issue and a major challenge to society, however, it is almost impossible to predict the full extent and precise timing of its impacts. This makes planning for issues extremely challenging to ensure we continue to provide the essential water and wastewater services to 15 million customers from nearly 7000 operating sites.

We have management and business continuity plans to deal with severe weather events that can damage the integrity of our infrastructure, and these were implemented in response to the 2018 "freeze-thaw". We monitor short- and long-term weather conditions so we can manage and respond to conditions for the benefit of customers including:

- Preparing for how extreme weather, such as low or excess rainfall, could impact the resilience of our water and wastewater assets that our customers rely on;
- Predicting how forecast temperatures might affect infrastructure, and whether fluctuations in temperature require a response;
- Forecasting the temperature to inform how water demand is affected, thereby improving performance; and,
- Assessing how rainfall patterns could impact our water and wastewater network resilience.

Through a review of the potential impacts of climate change on the business, we identified that our key issues are still broadly associated with either too much, too little or the wrong sort of water. This challenge is reflected in the performance commitments below which are agreed with our regulator, Ofwat, and included in our current business planning period which ends in 2020.

Performance commitment	Units description	2018/19 performance level	2020 target
WB8: Megalitres per day of water service made resilient to future extreme rainfall events	Megalitres per day (cumulative)	747	1,015
WC2: Leakage	Megalitres per day (annual average)	690	606
SB7: Population equivalent of sites made resilient to future extreme rainfall events – wastewater	Population equivalent (cumulative)	962,842	1,700,000
SB5: Contributing area disconnected from combined sewers by retrofitting sustainable drainage	No. of hectares (cumulative)	0.24	20

To provide resilience to future extreme rainfall events at water and wastewater sites for our performance commitments WB8 and SB7, we have delivered protection at the following water treatment works: Waltham Abbey; Coppermills; Hornsey and Lee Bridge; and have delivered improvements at the following sewage treatment works: East Hyde and Rye Meads. Managing surface water at source through sustainable drainage systems allows us to not only tackle flood risk, but also increase resilience against climate change. We are on

track to deliver our SB5 target in the current regulatory period and between 2020 and 2025 we are looking to increase our target more than three-fold, providing a wide range of benefits to our customers beyond that of improving asset resilience. Read more detailed [information on leakage](#).

In 2016, we produced a [short report and a number of illustrative case studies](#) which describe our progress in responding to climate change between 2010 and 2015. We'll update on our progress in 2020.

Working with others

Our employees and alliance partners play an essential role in our journey to becoming more sustainable. We've challenged our alliance partners to help us become more resilient and minimise both the operational and embodied carbon impacts of all their programmes. We want to make it easy for our teams to make more sustainable choices in how we respond to the challenges of tackling climate change.

An important part of this is the need to work with other organisations to develop resilient responses to the unavoidable impacts of climate change, and to reduce our net operational greenhouse gas emissions to zero by 2030. We know we can't do this alone, so we're continuing to work collaboratively with our customers, employees, partners, suppliers and regulators to better understand what we can do and create opportunities to deliver timely solutions.

During 2018/19 we've carried on working closely with a range of other organisations to tackle the issue of climate change and lead debate. Some of these partners have been:

- The Aldersgate Group
- The Prince of Wales Corporate Leaders Group on Climate Change
- Business in the Community
- The Thames Water Customer Challenge Group
- Defra
- London Climate Change Partnership
- The Climate Change Committee's adaptation sub-committee
- Action for the River Kennet (ARK)
- BEIS
- WaterUK
- UKWIR
- A range of academic institutions including the University of Oxford and Imperial College

Ensuring responsible operations

For us, operating responsibly means engaging positively with our customers and communities and being good neighbours. It also includes supporting the United Nations Sustainable Development Goals and contributing to making the world a more sustainable place by 2030.



Sustainable Development Goals (SDGs)

The United Nations Sustainable Development Goals (SDGs) have been developed to make the world more sustainable by 2030 by addressing challenges such as poverty, inequality, climate, environmental degradation, prosperity, peace and justice. The SDGs can only be achieved if governments, businesses, civil society and citizens work together. The United Nations has produced 17 SDGs and 169 targets that describe the road map of ambitions to build a more sustainable future by 2030. The challenge for us at Thames Water is: how can we help to achieve these goals?

Although we fully support the aspiration of all 17 Sustainable Development Goals, we have decided to focus on the four goals where we think we can make a real contribution through what we do every day. We've reported on our contribution to the SDGs over the past two years in our CR&S Report and [Annual Report](#) (2018/19 page 79).

The four SDGs that we can positively contribute towards are:



Clean Water and Sanitation - We provide safe water and sanitation to 15 million customers 24/7/365, the equivalent of almost 25% of the UK population. Every day we supply 2.7 billion litres of safe clean drinking water and treat around 4.4 billion litres of sewage. Outside the UK, we're working with WaterAid to help deliver its vision of a world where everyone, everywhere, has access to safe water and sanitation. In 2018/19, our employees raised £269,000 for WaterAid, a charity we've supported for 37 years, with a further £24,000 of income pledged. This money will be used as part of our four year 'Thames loves Malawi' campaign which aims to build partnerships, share knowledge and empower people in Malawi, particularly local council officers and water board employees, to make a sustainable change in two towns. Through fundraising and capacity development support,

we have helped make clean water, decent toilets and good hygiene normal for more people living in Kasungu and Mponela. Read [our case study](#).



Affordable and Clean Energy - We're working to increase the amount of renewable energy we generate, helping to increasing the share of renewable energy in the UK and global mix. In 2018/19, we generated 22 per cent of our own electricity needs from renewable sources including sludge (281GWh), wind (5GWh) and solar power (12GWh). We have two wind turbines at sites in east London and Solar Panels at 43 sites, including Europe's largest floating solar panel array at our Queen Elizabeth II Reservoir. Self-generating our own renewable energy reduces our greenhouse gas emissions and avoids the equivalent of around £32 million a year in energy costs.



Responsible Consumption and Production - We're working to become more efficient, reduce waste and increase how much we recycle and re-use. Last year, 100 per cent of sewage sludge was put to beneficial use, with treated sludge being applied to agricultural land as fertiliser or used in land restoration/reclamation and incinerator ash being used to create aggregate. We also generated 22% of our own electricity needs from renewable sources. We're also committed to reducing our reliance on single-use plastic in the business, reducing its impact on the environment as well as helping the UK achieve its target of eliminating all avoidable plastic waste no later than 2042. We've been promoting the benefits of consuming our high-quality tap water instead of using water bottled in single-use plastics and will be installing 100 drinking water fountains across the capital in partnership with the Mayor of London.



Climate Action - We're working to increase our capacity to respond to the impacts of climate change and mitigate our contribution to its causes. We've assessed the potential impact on our ability to provide our customers with water and wastewater services and published a report of our findings and our plans to respond. We've reduced our greenhouse gas emissions by 0.8% from 277.9 ktCO₂e to 275.7 ktCO₂e and use 100% renewable electricity. We've also set ourselves a very challenging goal to become zero net carbon by 2030 for our operational activities, underlining our commitment to mitigate climate change twenty years ahead of the recently announced Government target. Whilst we haven't yet identified how we will get to net zero, we will be developing our plan over the next few years to achieve this goal. We believe it is important to set our sights high to help keep global warming below 1.5°C.

Respecting our neighbours

We're committed to doing everything we can to make things easier for our customers while we carry out our essential repair and maintenance programme. With 50% of the pipes laid under roads and verges, our work inevitably causes traffic disruption, particularly in densely populated areas.

In 2018/19 we piloted a scheme with other utility companies to better coordinate our work, and identify opportunities where working together may be possible. Building on our culture of innovation, in October 2018 we introduced a new micro vacuum excavator which reduces the space needed to dig, so work can be done on pavements, rather than in roads.

We've also used innovative engineering techniques when we upgraded a Victorian sewer above Baker Street tube station, Kings Scholar Pond sewer. The innovative £20 million-pound project was completed with no disruption to the roads or railways nearby, saving

customers from weeks of potential disruption in one of the capital's busiest areas. To avoid disruption, a stainless-steel bridge and liner were constructed off site, before being dismantled, lowered underground, a single piece at a time, through a narrow manhole and rebuilt inside the sewer. The operational life of the 1850s-built sewer has been extended by 120 years and it remained in full wastewater operation throughout the upgrade.

Many of our sites were originally built well away from residential areas, however population growth has led to housing developments now being much closer to our sewage treatment works. Odour from the wastewater treatment process can understandably be an issue for our customers living nearby. We're committed to reducing odour for these neighbouring communities and in 2018/19 we delivered odour reduction work at Deephams, Camberley, Bicester and Beddington sewage treatment works. We monitor odour levels from these sites to make sure the investment we've made continues to benefit our customers.

Our education programme

We're passionate about our future customers and are committed to engaging with every school age child in our region to encourage them to consider their role in the water cycle. We provide a range of activities for schools throughout our catchment area, working with young people on key topics such as saving water and helping to avoid sewer abuse by reducing the amount of wet wipes, fat, oil and grease that people put down the drain. We help students to understand our business through visits to our education centres, workshops, talks and hands-on challenges.

Last year, we visited over 120 schools to deliver talks and activities to enhance learning about our business. This year, our long-running education programme saw us engaging with another 24,897 young people. The network challenge, our award-winning engineering exercise, allows children to design, build and test a water network. Last year over 1800 children took part in this challenge.

Our education centres

We host school and community groups at our four education centres at Didcot, Hogsmill, Maple Lodge and Slough sewage treatment works, and at the Angling Academy at our reservoir complex in Walthamstow to provide a fun and informative education experience for school children. We have opened our sixth education centre at Longreach to allow children to see first-hand the sewage treatment process. During their visits, they have the opportunity to carry out water and energy related experiments in our on-site classrooms and take a tour of the operational works. We will be opening another centre at our newly upgraded Deephams sewage treatment works during 2019/20.

At our Walthamstow Angling Academy, we use angling to promote well-being and social inclusion, and teach young people about the environment and sustainable water usage. Our Walthamstow site is a popular fishery, providing an opportunity for experiential learning and engagement with nature in an urban environment. During 2018/19, nearly 1,000 members of the community, including 866 young people between the ages of 4 and 18, took part in school or community group events and family fishing sessions.

Our educational partnerships

Partnership is a key aspect of our Corporate Responsibility Programme, and in particular our education programmes across London and the Thames Valley.

Our charity partners range from environmental to engineering organisations and all help to support our objectives of reaching young people whether it's by learning outside the school

grounds or through an outreach activity within a school. This enhances the next generation's learning about water and the environment, and inspires them to take more interest in science, technology, engineering and maths (STEM).

We're sponsoring the [London Design and Engineering University Technical College](#), continuing to work closely with both Reading and Swindon University Technical Colleges and developing new partnerships with The Leigh University Technical College and University Technical College Oxfordshire. The growth in STEM skills is crucial to the future of our industry, and we're also working in primary schools to engage pupils in these core skills.

Our award-winning 'Give Someone a Start' programme offers work experience to people who are out of work, and those with mental and physical disabilities who may need extra support in finding a role. We are expanding the programme, running our first successful work experience placement with Lanes, one of our alliance partners in November with more to follow and are working on a placement with another partner, Morrisons, for next year.

Working with communities

We actively seek to understand what our community and stakeholders expect of us and look for opportunities to work in partnership with them. We work collaboratively on community projects that deliver both community and business benefits.

As part of our industry-leading community investment programme we supported eight community projects with an investment of £376,000 in 2018/19. The initiative sees us invest in opportunities to encourage public access to our sites, improve water-related visitor attractions, deliver essential environmental and wildlife improvements and protect cultural heritage.

Walthamstow Wetlands, one of our operational sites and home to Europe's largest urban wetlands, has seen 544,829 visitors since opening in October 2017, and this year also saw us support the opening of a new wetlands nature reserve at Enfield Lock. During 2018/19 we were proud to be involved in the introduction of a social prescribing initiative, through which local GPs prescribe patients to spend time at our wetlands to improve their wellbeing.

Looking after biodiversity

We have an innovative programme of conservation activities and enhancements designed to engage our employees, customers and stakeholders on key environmental issues. Our emphasis is on conserving and improving biodiversity and access to nature for our customers and local communities. We work to protect and enhance wildlife habitats on and around our operational sites and to share them with communities where possible.

We manage 12 Sites of Special Scientific Interest (SSSI) which are legally protected wildlife areas. We work hard to look after these special places and the wildlife that flourishes there. Around 99% of our SSSI land area is classified as 'favourable' (50.89%) or 'unfavourable recovering' by Natural England. We're working with Natural England and other specialists to understand how we can make further improvements to the condition of the 'unfavourable recovering' areas which can be a result of wider population trends rather than specific conditions on site.

In 2018/19 we increased biodiversity at five of our sites, spending £56,500 on five projects including the creation of a wildflower meadow at Hogsmill nature reserve. In our business plan submitted in September 2018, we've committed to quantify and report the natural

capital stocks of our land holdings during the next regulatory period and increase biodiversity by 5% at 253 of our sites by 2025. The area of land to be improved by this biodiversity programme is c 4,000 hectares (twenty-five times the size of Hyde Park).

With 47 of the UK's 224 chalk streams in our region we're committed to protecting these rare and biodiverse sites. One of these streams is Letcombe Brook in Oxfordshire where we're constructing a £14.5 million, 6km pipe to supply customers from groundwater boreholes rather than the stream to protect some of the most 'at-risk' plants and wildlife living in the stream, including brown trout. In advance of the work, our archaeological contractors discovered an Iron Age settlement containing an array of well-preserved artefacts, including 26 human skeletons.

Our sites are home to a wide variety of species of plants, some of which are critically endangered and require protection. Tower Mustard is a tall plant which now only grows at 25 locations in the UK, including Stain Hill Reservoir in Richmond. It is facing high risk of extinction in the wild and is listed as a Priority Species under the UK Biodiversity Action Plan. To protect this rare plant, we have installed special fences and enforced specific mowing regimes to prevent it from being smothered. Our work at the site has maintained the population of this valuable species.

Enjoying our sites

We have more than 100 sites across London and the Thames Valley where we provide access for the community. As part of our ongoing commitment to open up as many of our sites of interest as we can to the public, each year we run London Open House which enables members of the public to catch a rare glimpse inside some of the iconic Thames Water buildings that help to deliver essential water and waste services to millions of people across London and are normally closed to the public. This includes the King George V pumping station in Enfield, Deephams sewage works, the historic Oak Room in Islington, Old Ford water recycling plant in Stratford and our iconic 150 year old pumping station, Abbey Mills. The open days are always very popular and bookable events are sold out extremely quickly, which is why we're looking to increase opportunities for visitors to see how we work over the next five years.

There are a number of sites that are open to the public throughout the year with a range of activities, including fishing at Farmoor reservoir and Walthamstow reservoirs (Europe's largest urban wetland), enjoying nature in the heart of London at Woodberry Wetlands, bird watching at Kempton Nature Reserve, sailing on the Queen Mary reservoir, and learning about heritage with our partners at the Victorian-era Crossness pumping station.

Our charitable giving

We offer support to charitable organisations in four main ways:

- Donations to charitable organisations for projects approved by our Charities Committee
- Encouraging and supporting our employees' own charitable giving by matching fundraising efforts and offering a payroll giving scheme
- Our Time to Give employee volunteering scheme
- A long standing strategic partnership with WaterAid, our principal charity.

Thames Water supports the local community through volunteering events and contributions to community investment funds. We raised £45,266 for other local and national charities

through internal fundraising activities and match funded employee fundraising efforts with £31,820.

Our 'Time to Give' programme encourages employees to connect with their local communities. In 2018/19, 1,159 of our colleagues spent 7,658 hours taking part in voluntary activities including river restoration projects, painting schools and helping in hospices. It also provides opportunities for personal and professional development, including serving as a school governor.

In 2018/19 we raised £269,000 for WaterAid, a charity we've supported for 37 years, with a further £24,000 of income pledged. Our signature campaign, 'Thames loves Malawi', uses these funds to work with local communities and share the knowledge and means to make tangible and sustainable improvements in two towns in Malawi. Through fundraising and capacity development support, we have helped make clean water, decent toilets and good hygiene normal for more people living in Kasungu and Mponela. Read [our case study](#).

Over the last year, we've helped 2,548 people living in these towns to get access to clean water that they can use every day. Our fundraising has helped with the completion a new water kiosk at Chiteyeye and deliver further Central Region Water Board (CRWB) network extension with new household and institutional network connections. The CRWB visited Thames Water sites and employees who shared their experience and skills to maximise the opportunity for learning.

We also helped 12,341 people gain access to improved sanitation services. Thames loves Malawi has helped provide new toilets for students and teachers at Kasungu Local Education Authority Primary School and rehabilitate the broken sewer systems at the Kasungu District Hospital and Chayamba Secondary School. These projects will improve sanitation for the local community, benefitting the health of teachers, students, staff and patients and reduce ground water contamination.

Putting our customers first

We provide water, the essential service, for nine million customers and sewerage services for 15 million customers across London and the Thames Valley. Our customers are at the heart of all we do and we're committed to delivering excellent service by making the complex simple, building trust through clarity, providing a service with clear benefits that sets us apart and delivers effective results.



Improving customer service

We have millions of interactions with our customers every year, from households to retailers and developers. To improve our ability to serve our customers, we've launched a major customer relationship management and billing system with most of our customers to be using the new system by March 2020. Our new billing engine and customer relationship management system launched in December 2018 – a cornerstone for the transformation of our customer contact and billing experience. One of the biggest innovative solutions of its kind in the utility sector in Europe, it will replace an aged, inflexible, system, revolutionising our capability to manage customer metering, billing and collections activities, providing a more effective, efficient and resilient service to our customers.

The new solution provides our frontline customer service advisors with greater ability to assist customers through improved data, insight and processes, enabling them to resolve more queries on first contact and, in turn, improve customer satisfaction and reduce complaints. Our pilot office is demonstrating strong performance to date and the solution design and operation means we will continue to invest to continuously improve the platform to meet our customers' evolving needs.

We're also working on the development of a new website to better meet the needs of all our customers and stakeholders and make it easier for them to self-serve. Combined with investment in our operational assets, these projects are critical to improving our customer service and complaints performance.

Our customers have been clear they expect us to be proactive during incidents to protect their water supply and, if there is a supply interruption, that we provide brilliant service, in terms of speed of resolution and communication. Improving customer service during

incidents remains a key focus for us - whilst progress has been made, we recognise we have more to do. Having engaged with more than one million customers to create our business plan, we're continuing with this collaborative approach to improve customer outcomes.

Keeping things affordable

We exist to serve our customers and we're committed to making our services affordable for everyone. It's important to us that we're supporting our customers in times of need - and this includes times when our customers are struggling to pay their bills. Affordability continues to be just as high a priority for us as it is for our customers.

During 2018/19, we helped 82,365 customers with our social tariffs – [Water Sure and Water Sure Plus](#). We increased the number of customers on social tariffs by over 25,000 in 2018/19 achieving our 2020 target of 82,000 head of time. In particular, we saw a 41% increase in participants of our Water Sure Plus tariff. By insourcing our Local Authority and Housing Association customer relationships during 2018/19, we're now able to have direct contact with these customers, helping ensure we're meeting their individual needs. We've also simplified our social tariffs. Although they're now based purely on income, we're maintaining historical social tariff rates for those who are already on our tariff and would see an increase under the revised calculation.

We're collaborating with utility and 'third sector' partners, to deliver our ambition to help 200,000 families in financially vulnerable circumstances by 2025. Our 'customer assistance fund' supports customers who genuinely cannot pay their bills and helped 6,742 customers with a total of £4.5 million during the year. We also donated £645,000 to the independent 'Thames Water Trust Fund', which funds organisations providing debt advice to our customers, and gave grants for over 1,400 customers to receive life-changing, essential items, such as fridges and washing machines.

Driving significant increases in the number of customers we're helping with our social tariffs and priority services register is a cornerstone of our submitted business plan for 2020 to 2025, and we've been making headway in recent months as we prepare to deliver our plan.

Providing priority services

We're committed to, and are passionate about, making a step change in our support for customers in vulnerable circumstances. Making sure we're able to reach customers most in need of support during a supply interruption or when paying their bill is not always straightforward and so we're engaging with customers in new ways, working in partnership with charities like Age UK.

Our Priority Services Register provides additional support for customers in vulnerable circumstances who need assistance, whether it's for a bill enquiry or during a supply interruption. In 2018/19, the number of customers on our register grew to 69,130 with 9,110 customers joining in the year, our biggest growth year.

Our goal is to increase numbers on the register to 410,000 by 2025 and to achieve this, we are working with a range of partners including Thames Valley Police and the British Red Cross to proactively identify customers who could benefit from this extra support. In January, we hosted a conference at Age UK's London headquarters, bringing together over 30 organisations representing older customers, with the aim of increasing awareness amongst their members of the support services we offer. Find out more about [our priority services](#).

Measuring our service

Our Service Incentive Mechanism (SIM) score of 75 out of 100 for 2018/19 is made up of our customer satisfaction score (75%) and quantitative measures (25%). The quantitative measure includes performance in “unwanted calls”, written complaints and second stage written complaints, with our complaints performance during the year being severely affected by the extreme weather events. We needed to divert all resources to dealing with the weather events of 2018, which had an impact on our day-to-day handling of calls, and ability to carry out day-to-day maintenance and repair.

SIM performance	2016/17	2017/18	2018/19
Total written complaints	17,809	17,039	21,108
Second stage written complaints only	1,007	818	2,719
Complaints accepted by the Consumer Council for Water	1	0	3
Unwanted telephone contacts	511,792	509,964	561,844
Customer satisfaction score	4.12	4.17	4.11
Total SIM points	77.26	78.43	75.03

We're committed to improving our service to customers with complaints reduction being one of our key priorities for 2019/20. We've started to transition customers to our major new customer relationship management and billing platform, which will help drive a step change in customer segmentation, giving us a single view of customers, so we can provide a better, and more tailored approach suited to individual needs. We're also doing a major upgrade of our website to improve customer experience, as well as continuing our extensive customer engagement programme to ensure we're focusing on what matters most.

Delivering efficient operations

We aim to run our business as efficiently as possible so we're always trying to reduce our use of natural resources, minimise waste and deliver efficient and effective operations for both today and in the future.



Sludge as a resource

Sewage sludge is a solid by-product of the wastewater treatment process, and it's an energy rich resource with a relatively high calorific content which we use to generate renewable energy. We transport and treat 4.4 billion litres of sewage every day, and last year we produced around 373,800 dry tonnes of sludge.

Our sludge strategy continues to provide the framework for our sludge investment proposals, which include:

- Ensuring safe and sustainable recycling to give confidence to farmers and food producers but also to reduce our reliance on agricultural land by using other forms of treatment and energy generation
- Adopting treatment processes that will maximise the generation of renewable energy and minimise the volume of sludge produced.

Renewable energy from sludge

In 2018/19, we generated 281 GWh of our own electricity needs from sludge, the equivalent of over £32 million a year in energy savings. This has helped to make even better use of a valuable resource, reduce our carbon emissions and improve resilience by reducing our reliance on grid electricity.

We've been producing renewable energy at our larger sewage works since the 1930s using anaerobic digestion (AD) which helps offset the need to import electricity and natural gas from the grid and reduces carbon emissions. Biogas is produced which can be used as a fuel in our combined heat and power (CHP) engines to generate renewable electricity.

By investing in our infrastructure and using a combination of treatment methods and new technologies, we've been able to increase the amount of renewable energy produced from sludge. A key change in the way we manage our sludge during the current AMP has been to move towards advanced digestion using the Thermal Hydrolysis Process (THP). Using THP before anaerobic digestion helps break down the organic matter in the sludge into more

accessible (digestible) compounds for the microbes in the anaerobic digesters to utilise. The microbes use these compounds more efficiently, which results in more biogas production. THP also reduces the amount of treated sludge which needs to be recycled to land. As well as expanding our use of advanced digestion, we are currently building a full-scale pilot plant to manage sludge by pyrolysis. In addition to fuel gas, char is produced which is a carbon-based and mineral-rich material.

Beneficial disposal of sludge

We're committed to the beneficial use of sludge wherever possible. In 2018/19, we recycled 98.7 per cent of our treated sludge (biosolids) to agricultural land as a natural fertiliser. This provides essential nutrients and organic matter to the soil and avoids the use of man-made fertiliser to grow food crops. The remainder was used in land restoration projects as a bulk soil improver to help restore industrial land for future regeneration. [ThamesGrow](#) is a leading range of biosolid products produced by Thames Water for use in agriculture. This provides a more sustainable, cost effective and environmentally sensitive solution for farmers throughout the south east.

Our sludge disposal is 100% compliant with stringent requirements to assure the quality and safety of our biosolids and their safe use in agriculture. This includes the 'Safe Sludge Matrix', an agreement between water companies and the British Retail Consortium, which sets out guidance for the application of biosolids to crops and strict controls on the quality of sludge. We've achieved certification of our treated sludge under the Biosolids Assurance Scheme, a standard which all sewerage companies in the UK have adopted to ensure all biosolids meet a minimum standard quality.

The residual ash from our incineration treatment process is also put to beneficial use. Ash is used to create synthetic aggregate, which helps to avoid landfill; the extraction of natural resources and its associated carbon emissions. [Read the case study](#) to find out more information. In the future, by using Pyrolysis technology effectively, the volume of residual product (char) would be 84 per cent less than the volume of sludge entering the process. We hope to be able to recover even more nutrients, precious metals and carbon from this Char to contribute further to the circular economy.

Our supply community

How we buy products and who we buy them from can have a significant impact, not only on the efficiency of our operations, but on the environment and the communities we work within. We're committed to more sustainable procurement and introduced a revised Supply Chain Sustainability Policy in 2018/19. It outlines our vision, values and a shared set of goals, to deliver real benefits to our customers and help us become a more sustainable business.

To be successful we must work in partnership with our supply partners who are encouraged to identify low carbon and waste reduction alternatives. For instance, during the procurement for waste tankering, we worked closely with our supply partners to introduce more efficient vehicle utilisation, as well as optimising journeys through computerised route planning. This comprehensive planning and increased efficiencies will reduce our carbon footprint. Specifically, we've been working with our on-site catering suppliers to reduce single-use plastic food packaging and have produced a diagram to help other companies make a start on tackling the plastics challenge. Take a look at [our case study](#) to find out more.

During 2018/19, we worked with c.3000 companies of varying size, spending c.£1.76 billion. Of these suppliers, we paid 90.5 per cent of all our invoices, totalling more than 160,000, in line with our agreed payment terms. On average we take 56 days to pay a supplier on

receipt of a correct invoice. When setting up payment terms, we take into consideration the size and situation of our suppliers, particularly our small to medium sized suppliers. Where possible, we try to remain flexible and consider each supplier on a case-by case basis.

Our code of conduct covers our approach to business activities and how we work, providing a clear, ethical and legal framework for our employees, customers and stakeholders. All elements of our code of conduct apply to both our permanent and temporary employees, and our contractors and alliance partners have committed to follow the provisions of this code. Underpinning the code of conduct and in line with human rights principles, we have [a range of policies](#) covering health and safety, equality, diversity and inclusion, anti-corruption and bribery, human rights and modern slavery and honest and ethical behaviour. We also have a 24-hour Employee Assistance Helpline available and a robust whistle-blowing mechanism in place.

Innovation, research and development

Our research and development programme is designed to address technical needs across the range of water cycle activities, delivering innovative technical solutions aligned with business needs to address challenges and also provide specialist technical support to the business.

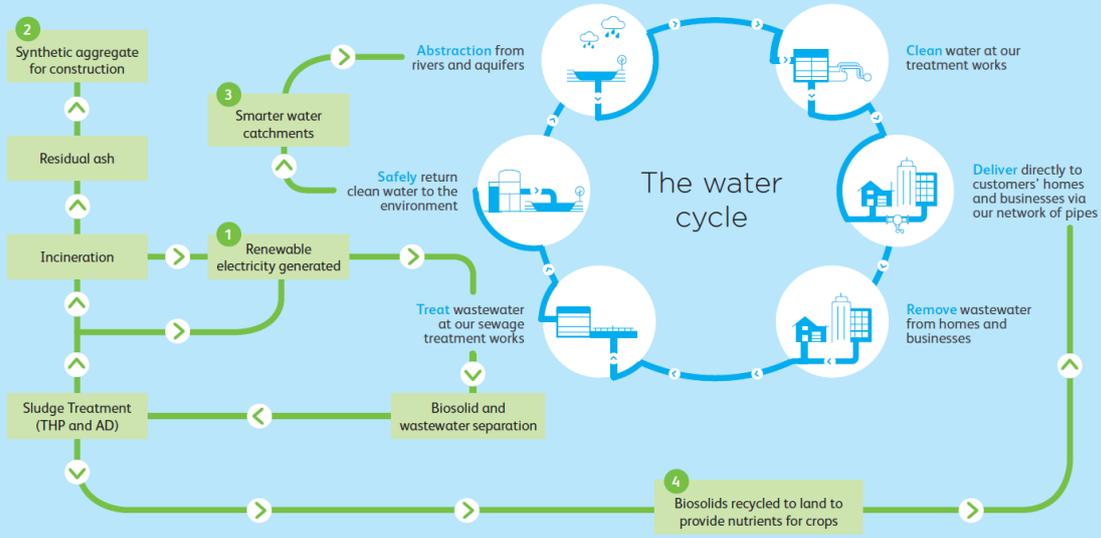
The development and application of new techniques and technology is an important part of our activities. We are a member of UK Water Industry Research (UKWIR) and participate and benefit from its research programme. The UKWIR research programme covers water, wastewater, sustainability, regulation, customers and asset management.

In addition, we carry out research and development in-house, including algae removal from raw water for increased resilience of supplies, deterioration of critical cast iron assets and low energy wastewater treatment processes. We increased our expenditure on research and development in 2018/19 which totalled £5 million (2017/18: £3.9 million).

Circular economy

The water and wastewater treatment cycle is an example of the circular economy in action. We're committed to become more efficient, reduce waste, increase how much we recycle and re-use and make wider contributions to the circular economy. For example, we put 100% of the sewage sludge we treat to beneficial use either by producing bio-gas to generate renewable electricity or applying it to farmland as natural fertiliser. The ash that is produced following the incineration process is now being used to create aggregate instead of going to landfill at a high environmental and financial cost. [Read the case study](#) to find out more.

Contributing to the circular economy



- | | |
|--|--|
| <p>1. Renewable electricity generation
Reduces grid electricity consumption and carbon emissions and costs.</p> | <p>2. Synthetic aggregate
Used for construction displacing virgin aggregate and reducing carbon emissions.</p> |
| <p>3. Smarter water catchments
Helping improve river water quality in the environment, avoiding the need for additional treatment which could impact on the environment and customer bills.</p> | <p>4. Biosolid recycling
Displaces artificial fertilisers, reduces resource use and carbon emissions in the production of food and improves soil quality.</p> |

View the [full infographic](#).

Sustainable and safe workforce

The health, safety and wellbeing of our people is our number one priority. We couldn't do the work we do without our people so it's important we maintain a talented workforce who feel motivated to give their best and who return home safe and well each day. That's why we're committed to our Zero incidents, Zero harm and Zero Compromise vision.



Our people's experience

One of our strategic priorities – to build a collaborative and capable team dedicated to serving customers – requires us to have the right people, with the right mindset, skills and tools, to support our customers at the right time.

Underpinning this strategic priority are our 'people priorities', which identify how we build a working environment and high-performance culture which inspires us to live our values, grow personally and professionally and focus on exceeding our customers' expectations every day.

We are focused on recruiting and retaining the best people and providing them with support and opportunities to maximise their potential. By providing an employee experience which develops, challenges and supports our dedicated workforce, we can create teams of true customer advocates. We take great pride in celebrating individual and team successes and shining a spotlight on colleagues from across the business that have gone the extra mile for customers. In 2018 there were 843 nominations for our 'Spotlight' employee awards.

We want our talented people to be proud, engaged and passionate about our business – after all, they're at the heart of serving our customers well. We offer fair and flexible reward packages which support our strategic priorities and motivate our teams. Our 'Share in Your Success 2020' is a non-contributory incentive scheme open to all employees in non-managerial grades, offering a potential payment of up to 5% of salary in 2020. Targets for this scheme are based on what is important to our customers, such as providing excellent service, reducing leakage and pollutions and continuing our large investment programme and are fully aligned with our senior management incentive plans, ensuring we are all pulling in the same direction.

Working with trade unions

We are committed to delivering an industry leading employee relations environment, to support all of our people as they reach higher to deliver excellent service for our customers.

We regularly meet trade unions, and where appropriate non-union representatives, at senior and working levels, to discuss issues affecting employees. In 2019 we are also launching a programme to actively engage our Board members with the workforce, including our trade unions. The Thames Water Partnership supported by other engagement approaches ensures that our peoples' voices are heard on the issues that matter most to them.

Health and safety

The safety and wellbeing of our employees and customers is our first priority. There is nothing more important and we are determined to lead our industry in health, safety and wellbeing best practice. We're committed to achieving our vision of "zero incidents, zero harm, zero compromise, every day we are at work" and every employee, without exception, has the authority to stop any activity that can't be done safely. We ensure that our partner agencies share our 'zero compromise' view on health and safety. Sharing the same high standards, we were granted the Health and Safety award at the 2018 Utility Week Awards alongside our partner organisation, Lanes.

We use a range of metrics to assess our performance, including those in the table below. In 2018/19, we recorded the longest period in our history, over 40 days, without a single injury that led to someone not being able to return to work the next day. During this period, 15,000 of our colleagues and supply chain partners worked for a combined total of 3.7 million work hours. Like all major safety critical organisations, we measure lost time injury performance using frequency rates. In 2018/19 we maintained the number of incidents per 100,000 hours worked at 0.16. We saw a decrease in the number of lost time injury incidents during the period, the nil change in the frequency rate was due to changes in actual hours worked. We maintained the number of work-related illness cases resulting in absence from work, with 16 cases during 2018/19.

Under Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR), we're required to report to the Health & Safety Executive all specified injuries, lost time injuries involving more than seven days lost time, work-related diseases and certain types of incidents not involving injury known as dangerous occurrences. In 2018/19 we saw an increase in reported notifiable injuries raising the frequency rate to 0.08 from 0.06 in 2017/18. We've seen an encouraging 73% increase in the number of hazards being reported by our employees - preventing incidents before they occur – and 33,065 senior management inspections carried out. Through reporting safety observations we're able to put things right before they can cause incidents.

Indicator	Actual 2016/17	Actual 2017/18	Actual 2018/19
Reportable injury frequency rate – based on reportable injuries under RIDDOR per 100,000 working hours	0.08	0.06*	0.08
Lost time injury frequency rate – based on lost time injuries over 1 day per 100,000 working hours	0.21	0.16*	0.16
Reported work related illness resulting in lost time over 1 day	29	16	16
Hazards (unsafe acts/conditions) reported and investigated	37,742	44,759	61,171
Management Health and Safety inspections	24,213	25,644	33,065
Health and wellbeing surveillance	4,909	5,719	5,749
Health and safety training days	13,529	14,248	20,111
Number of fatal employee accidents	0	0	0
Number of customer/community accidents	0	0	0
Number of fatal customer/community accidents	0	0	0

**Value restated to reflect reclassification of some injuries.*

We are committed to maximising our learning from all incidents and are already implementing the necessary measures to preventative measures to ensure we continue to achieve our vision of sending everyone home safe and well every day. We continue to place great importance on proactive risk prevention, while creating a culture of care through which all our people can improve their own health and wellbeing by making informed choices.

Future plans will see us continue our drive towards achieving excellence in health and safety, using the power of technology and developing our immersive and virtual reality platforms for a full range of health and safety courses. Since 2014, we have been using Unmanned Aerial Vehicles (UAVs) (also known as drones) to avoid the significant safety risk of working at height. During 2018/19, we added a remotely operated underwater vehicle (ROV) to enhance our capability to inspect valves, pipes and other submerged assets within service reservoirs, while reducing safety risks for our employees working around cold, large and deep bodies of water.



Wellbeing and mental health

Our mental health strategy, 'Time to Talk', covers initiatives such as mental health awareness training, open engagement forums and MIND's Time to Change pledge. Within the year, 468 employees have taken part in the Mind Fit mental health awareness programme and we have trained 268 mental health first aiders. We aim to have one in ten people, in every team across the company, trained in mental health by March 2020.

Showing our commitment to our customer-driven value of being positive and visible, our industry leading activities in this area have been widely featured in the media. We were also featured in the independent review 'Thriving at Work' white paper commissioned by the Government and the Shaw Trust mental health report. As part of our continued commitment, we've launched a new confidential wellbeing self-assessment tool which will help employees quickly and easily identify any pressure points in their lives, and if needed, be directed to support and guidance.

Everyone at Thames Water is entitled to a free annual Personal Medical Assessment, with 2,825 employees signing up last year. We also offer free flu jabs, a 'cycle to work' scheme as well as gym memberships and wellbeing discounts. We have a 24-hour help line to assist in resolving personal or work-related problems which may affect their health, well-being or work performance.

Our wellbeing plans for this year include a focus on fatigue management and sleep education for our workforce who work night shifts. We are also launching an in-house occupational health training course for managers and a clinical advice line for support and guidance. We are continuing enabling our people to easily access opportunities for improving their personal physical activity.

Our future talent

During 2018/19, we held over 22,000 people training days and set up a new central Learning and Development Centre of Excellence with the aim of ensuring that all employees receive the key knowledge, skills and competencies required to perform their role and deliver on key business needs. In that time, our new Knowledge Management 'My Guide' has seen 1.4 million separate hits; we have commenced building a 'Licence to Operate' process for all critical water/ waste/Network/ H&S personnel; supported the launch of business critical projects such as our new customer relationship management and billing platform and vulnerability; and developed a more effective process for managing mandatory training (GDPR etc).

The Skills Accord is an Energy and Utilities initiative promoting sustained investment in the skills our sector needs most. As lead signatories on the Skills Accord, we have committed to address sector-wide skills gaps and shortages and to promote relevant skills development across the supply chain through procurement.

We run traineeships, apprenticeships and graduate programmes to develop technical and leadership skills and nurture the talent we'll need for the future. Our successful apprenticeship programme serves to futureproof the supply of skilled people we will need in our more technical roles. In 2018/19 29 apprentices joined our company. They are hired on a permanent contract from the start and complete an extensive programme of on and off the job learning during their two or four year apprenticeship. Our graduate scheme focuses on creating future leaders. Last year we recruited 18 graduates onto this programme and they

will be given opportunities to develop their leadership skills and study toward professional technical qualifications.

Diversity and inclusion

At Thames Water our customers and colleagues have a diverse range of backgrounds, beliefs and customs. We can serve our customers, support colleagues and work better together if we have a diverse and inclusive workforce. We've worked hard to build a culture of inclusion and belonging in which people feel safe, heard and respected and where everyone has an equal opportunity to contribute and progress their career.

Diversity and inclusion

Our Black, Asian and Minority Ethnic (BAME) Mentoring Circle events offer face-to-face support, advice and guidance to help job seekers from BAME backgrounds. Senior managers have joined the circle sessions to pass on their knowledge and advice. We also run several employee support networks, including the BAME diversity and inclusion champions, which meet regularly, and a working group supporting the company to deliver our culture, inclusion and engagement strategy.

We are proud to be a Stonewall LGBT+ diversity champion, working to create a more inclusive, gender equal, empathetic environment. Our position in the Stonewall Equality Index rose 25 places in the year due to our wide-ranging inclusion programme. Our LGBT+ network, sponsored by one of our Executive Leadership Group, has worked hard to expand the knowledge and understanding about LGBT+ issues and promote the role of all our employees as supportive allies. We recently launched our Transgender and Non-Binary guidelines as a resource to support everyone across the business, providing definitions of key terms and an idea of the journey that someone who is transitioning experiences. Over the past year our Women's Network for women and champions of women, has helped create 'Balance for Better' by facilitating a number of confidence building, personal skills and career development workshops for hundreds of employees across numerous sites. Each year we also celebrate events such as International Women's Day and International Women in Engineering Day with members of our senior leadership team and partner organisations, inspiring people with their stories and providing networking opportunities.

We launched inclusion cards during National Inclusion Week, which aim to start conversations in team meetings to encourage everyone to consider how we can collectively build a more inclusive working environment. This approach has now been shared with many other businesses who had heard of the good work we are doing to challenge our own thinking and aspire to do better.

Gender pay gap

We are pleased to be able to report that, as with previous years, our mean gender pay gap has continued to reduce. As at 5 April 2019 our mean gender pay gap is now 10.4% which has reduced from 10.8% at 5 April 2018. We are additionally pleased to report that our median pay gap has also reduced, down from 12.5% as at 5 April 2018 to 12.2% as at 5 April 2019. This is as a result of an increase in the number of women within Thames Water in our upper pay quartiles. As is common across our sector, the main reasons for our gender pay gap is that there are more men than women in senior roles as well as more men in roles that attract shift pay and other working pattern allowances. Take a further look at our [gender pay gap report](#).

Honest and ethical behaviour

We acknowledge the United Nation's Guiding Principles on Business and Human Rights, so we have policies and procedures in place which ensure we're compliant with these requirements, and that they're enforced throughout our business. We seek to promote a culture of honesty and integrity in all our dealings, and we will not tolerate acts of fraud, dishonesty, bribery, corruption or theft of assets or data from the business.

Our Code of Conduct, together with our Honest and Ethical Behaviour policies, expresses our approach to business activities and how we work. These provide a clear, ethical and legal framework for our employees, customers and stakeholders, and clearly set out the minimum behaviours we expect. Our code covers a wide range of human rights issues, including discrimination, working conditions and equal opportunities. We have a confidential 24-hour Employee Assistance Helpline available and a robust whistle-blowing process in place for any of our people to ask questions or raise concerns. Our contractors and alliance partners have also agreed to follow the provisions of this code.

View our latest [Modern Slavery Act statement alongside our Honest and Ethical Behaviour policy](#).

Long-term sustainable financing

Sustainable financing is crucial as we invest to ensure the future provision of our essential water and wastewater services, while keeping bills affordable and protecting the environment around us. Our average annual combined household bill for 2019/20 is £398, which is the third lowest in England and Wales. Our 15 million customers rely on us to spend their money wisely – something we take seriously – and with some of the UK's poorest areas in our region, we recognise the need to provide extra support for customers who are in financially vulnerable circumstances. We take a longer-term view of managing the financeability of our business ensuring we remain attractive to investors of both equity and debt. To help understand how the business is financed, take a look at '[Our finances explained](#)' which explains our finances in a simple way as part of our commitment to increase transparency.



Investing in the business

Over the last 15 years we've invested over £15 billion in our assets, including £1.2 billion in 2018/19, which is three times the annual investment compared to the five years before privatisation in 1989. To ensure our investment programme is affordable for customers, we borrow money to bridge the gap between bills and spend. For every £1 from customers we need an extra 17p to fund our spending (2018/19). By spreading the cost of our investment and managing our debt over a number of years, we also ensure the generations that will benefit from the improvements are those who will be helping to pay for it – this makes our bills fairer and more sustainable.

Environment, Social and Governance (ESG)

To support our strategic priorities and our approach to sustainability, the past 12 months have seen our continued efforts to put the Environment, Social and Governance (ESG) agenda at the heart of our financial decision making. We publish ESG data and information in other documents, however, to improve the accessibility and transparency of this information, we draw it together in a separate ESG Statement. [This year's ESG statement](#), our second, contains four years of data. It includes references to the sources for a range of

key performance measures, to give balance and context for our latest performance information.

Following our inaugural green bond, in November 2018 we signed an innovative £1.4 billion 5-year Revolving Credit Facility (RCF), which links our interest rate to annual performance against ESG metrics. We increased the size of this facility in January 2019 to a total of £1.65 billion. For a progress update on our Green Bond Framework, click on the documents below:

- [Our Green Bond Framework](#)
- [Green Bond Impact Report 2017/18](#)
- [Green Bond Impact Report - Assurance Statement](#)

The agreement saw us become the first UK corporate to tie the interest rate we pay on the RCF to our Infrastructure [Global Real Estate Sustainability Benchmark](#) (GRESB) score. Outperformance on the ESG benchmark will result in a lower interest rate, with any financial gains donated to our charitable fund.

Financial resilience and gearing

Resilience and diversity in our funding portfolio are important drivers in ensuring our financial stability over the long term. We are financed by a combination of debt from our lenders and shareholder equity retained in the company. We borrow through external public and private debt capital markets and through financial institutions across a diverse range of currencies, geographies and sources.

Our gearing (the amount of net debt relative to the regulatory capital value (RCV)) at 31 March 2019 was 82.2% (2018: 81.3%) before considering the de-gearing impact of a cash injection of £250 million in April 2019, equivalent to 1.8% of our 31 March 2019 RCV.

We retain credit ratings that allow us to access efficiently priced debt to fund our investment programme, whilst keeping bills affordable for our customers. At 31 March 2019, Class A debt was rated A3/BBB+ by Moody's and S&P respectively (both on negative outlook), and Class B debt was rated Baa3/BBB- (both on negative outlook).

Remuneration

Our executive remuneration policy aligns reward with the delivery of our critical customer and environmental commitments and is mirrored in remuneration across the business. Thames Water's principles on remuneration for Executive and Non-Executive Directors are designed to attract, retain and motivate our leaders and senior management and ensure they are focused on delivering business priorities within a framework designed to promote the long-term success of the Company.

The Remuneration Committee monitors the remuneration arrangements to ensure there is an appropriate balance between risk and reward and that the long-term performance of the business is not compromised by the pursuit of short-term value. There is a strong direct link between incentives and the Company's strategic priorities which are focused on delivering excellent performance for customers and other stakeholders. Where performance targets are met senior management will be rewarded through the annual bonus and a long-term incentive. This means that approximately two thirds of an Executive's total remuneration is at risk if targets are not delivered.

Remuneration for other employees is determined by level and is broadly aligned to the Executive Directors', resulting in all employees working towards achieving outstanding outcomes for our customers and stakeholders. Although employees are not consulted directly on the Executive Directors' remuneration policy, employee engagement surveys are carried out annually which include metrics and encourage feedback on pay and benefits. In addition, regular discussions take place with trade union and employee representatives on the pay and benefits not only for employees covered by collective bargaining but on the wider employee population.

Dividends

We announced last year that there would be no dividends paid to external shareholders for the three years to 2020 – a key decision that was supported by our external shareholders in order to focus on investment to drive improvements.

During 2018/19, we paid dividends of £60 million (2018: £55 million) to our immediate parent company, Thames Water Utilities Holdings Limited (TWUHL). The dividends paid in 2018/19 were utilised solely to service the debt obligations and working capital requirements of other companies in the Group.

Taxation

In 2018/19, we paid over £211 million in business rates, national insurance contributions, PAYE and other taxes. We incurred £147 million directly, mainly through business rates, and collected £64 million on behalf of our employees. As in prior years, we have not paid any corporation tax to HMRC primarily because of interest costs and tax relief for our capital investment programme.

The 2018/19 corporation tax charge of £8.9 million consists of a deferred tax charge of £4.6 million and a current tax charge of £4.3 million. The latter charge arises because Thames Water Utilities Limited pays for tax losses from other Group companies which should ultimately benefit customers through lower tax funding in future regulatory settlements. The overall tax charge is lower than the prior year due to the decrease in accounting profits.