



Our journey to net zero carbon and beyond

Introducing our route map



Next stop, net zero 2030



At Thames Water, we're taking pioneering steps to change the way energy is created and used in the UK, making us an important player in energy transition.

We provide life's essential ingredient – clean and fresh drinking water – to millions of customers every day. And we also create reliable, affordable, and sustainable power by processing waste.

Being a force for good is a cornerstone of our strategy

The generation of this renewable energy helps us, and others, achieve carbon reduction targets. We all have a responsibility to take urgent action against climate change, the world's biggest environmental challenge, and to work together to protect our planet and our water cycle for future generations.

For the last 30 years, we've been on a journey to reduce our carbon emissions, and we've beaten our first target by reducing our emissions by 578 ktCO₂e compared to 1990, despite customer numbers increasing by 4.3 million. This reduction roughly matches the amount of methane a quarter of a million cows produce each year!

We're playing our role in the future of UK energy transition

Our commitment to net zero carbon emissions from our operations by 2030, 20 years ahead of the UK Government's target, is the next ambitious step on our journey, and we're pushing ourselves even further to become carbon net negative by 2040. This is a first look at our roadmap to 2030.

However, it's not just about our own targets. We have a much bigger role to play in energy transition in the UK, and it's a really exciting place to be.

We generated 301 GWh of electricity from sewage last year – that's enough to power the London Borough of Bexley for a year – and we've got big plans to turn even more of it into power. As well as creating more renewable energy, so we can treat water in a more sustainable way, we're finding new ways to store and share more of this power. This will also help generate much-needed extra investment for our ageing infrastructure and improve our service to our customers. The opportunity to turn waste into power helps us provide our service in a more sustainable way, enabling our customers, communities, and the environment to thrive.

This year's COP26 gives the world the opportunity to come back together and set the right ambitions for our planet. After the global pandemic, we can rebuild our world in a green and sustainable way, and, working together with the Government, our stakeholders, regulators, and supply chain, we can be an important part of that in the UK.

Sarah Bentley



What's the challenge?

Climate change is one of the biggest challenges we face. More frequent and intense weather events across the globe – including droughts, flooding and changes to rainfall patterns – will impact our business and the service we provide to customers over the coming years.

We must urgently tackle the global challenge and reduce the impact of climate change through our daily operations and activities.

In 2015, we joined the Paris Pledge at the COP21 meeting in Paris. It was here that we committed our support to meeting and exceeding the shared ambition of governments around the globe: to keep the world on a trajectory that limits the global warming temperature rise to less than 2°C.

Since COP21, the need for action has become even more urgent. A fundamental shift is now essential to help stabilise the climate system to a less than 1.5°C increase by the end of the century.

In 2019, we made an important pledge to reduce our operational net carbon emissions to zero by 2030 – a full 20 years ahead of the UK Government's target and the global Paris Pledge. Although it's extremely challenging, we're already making progress to achieve this goal. But we don't want to stop at net zero – we're committed to going beyond this by 2040 and working to become a carbon negative organisation for the future.

Over the past year, we've actively helped the water sector to develop its net zero 2030 route map, which illustrates the potential opportunities and enablers we can use to transition to a lower carbon emissions future.

By working to reduce our emissions to net zero by 2030, we can not only help keep the average global temperature increase below 1.5°C, but also pioneer ground-breaking green initiatives and encourage others to do the same.

While we're part of the solution, we can't do it on our own. Avoiding a 1.5°C rise in temperature also requires urgent action by governments, organisations and citizens.

We're working to reduce operational greenhouse gas emissions to net zero by 2030. Our overall ambition is to go beyond this by 2040.

Where are we now?

We've been working to tackle our carbon emissions for many years, and we've already made significant progress.

Since 1990, our operational emissions have fallen from 846 ktCO₂e to 268 ktCO₂e despite our serving an additional 4.3 million customers.

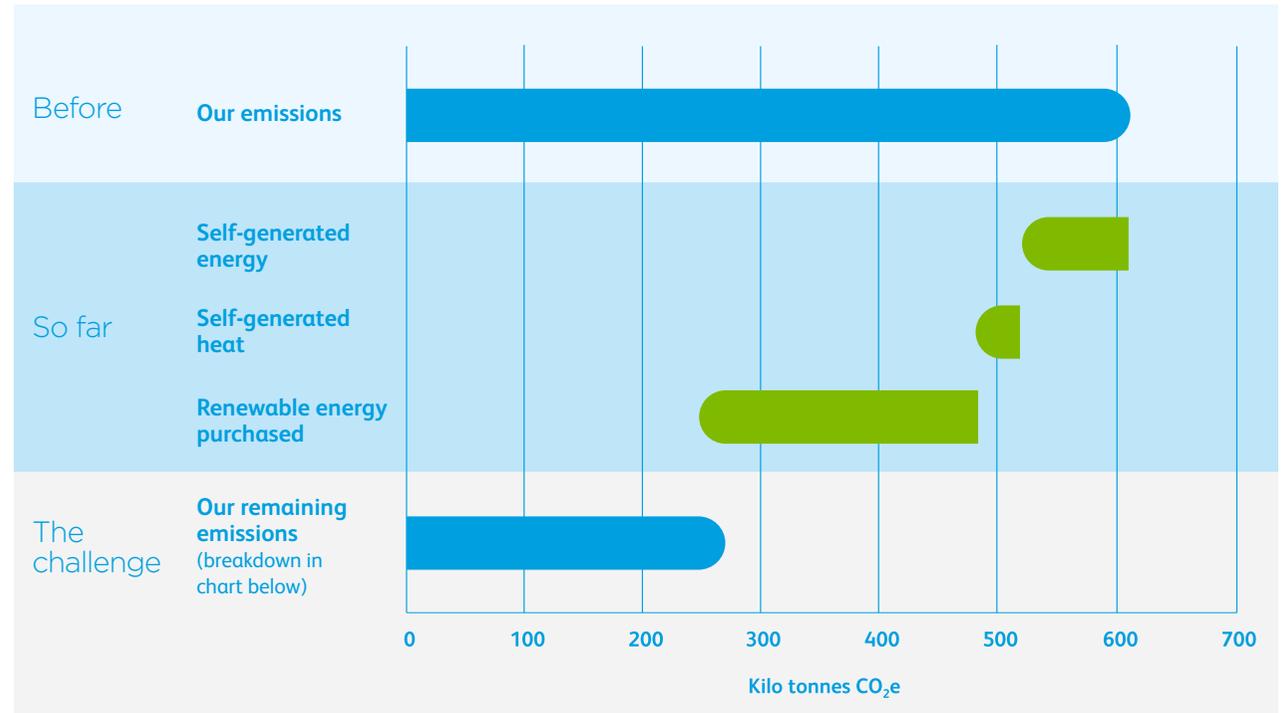
We've achieved this drop by implementing innovative heat recovery and energy efficiency initiatives as well as buying certified renewable energy to power our sites sustainably.

We also self-generated 311GWh electricity, covering 23% of our own electricity needs from on-site generation in 2019/20.

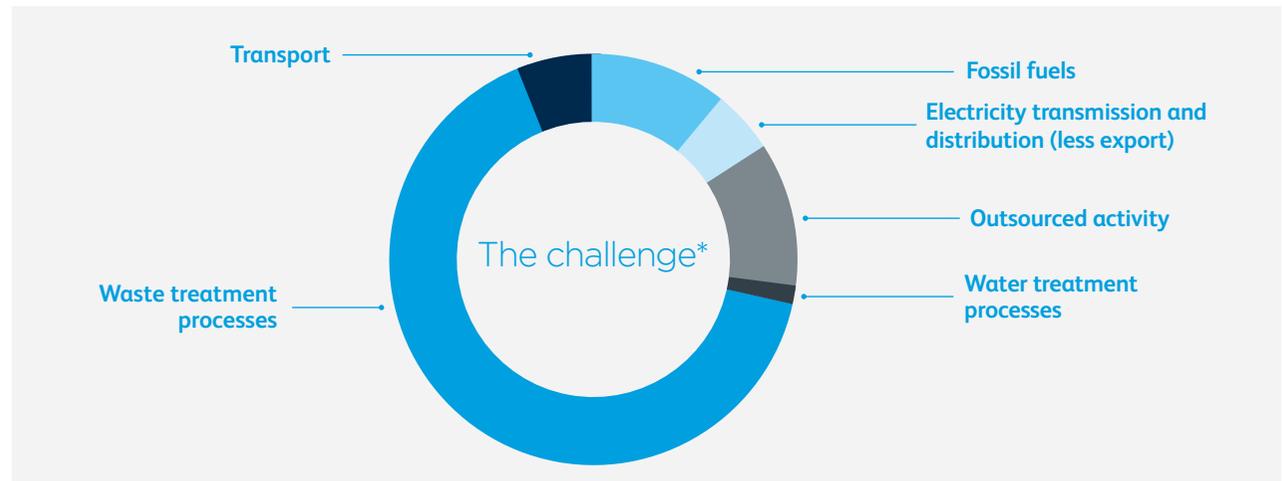
We've already tackled the easiest options to reduce our carbon emissions, so to reach net zero, we need to explore new solutions and embrace new technology. This will involve greater levels of innovation and collaboration than we've ever had before.

We've created a Net Zero Carbon Taskforce made up of experts from across our business who are exploring potential options and developing a comprehensive plan for emissions reduction.

Our progress to net zero*



In 20/21, we reduced our carbon emissions by 56%. If we hadn't done this, they'd have reached as high as 605 ktCO₂e.



*Calculated using UKWIR Carbon Accounting Workbook version 15

Introducing our route map

Our route map covers the areas in which we'll actively work to reduce our operational carbon emissions to drive us forward for the future.

There are four high-level themes central to our progress towards net zero by 2030:

1. Reduce

Design and operate our assets so they emit as few carbon emissions as possible

2. Decarbonise

Provide the same capabilities using lower carbon technologies

3. Create a net negative future

Grow our export of renewable energy products and procure renewable energy when we can't decarbonise our supplies

4. Sequester and offset

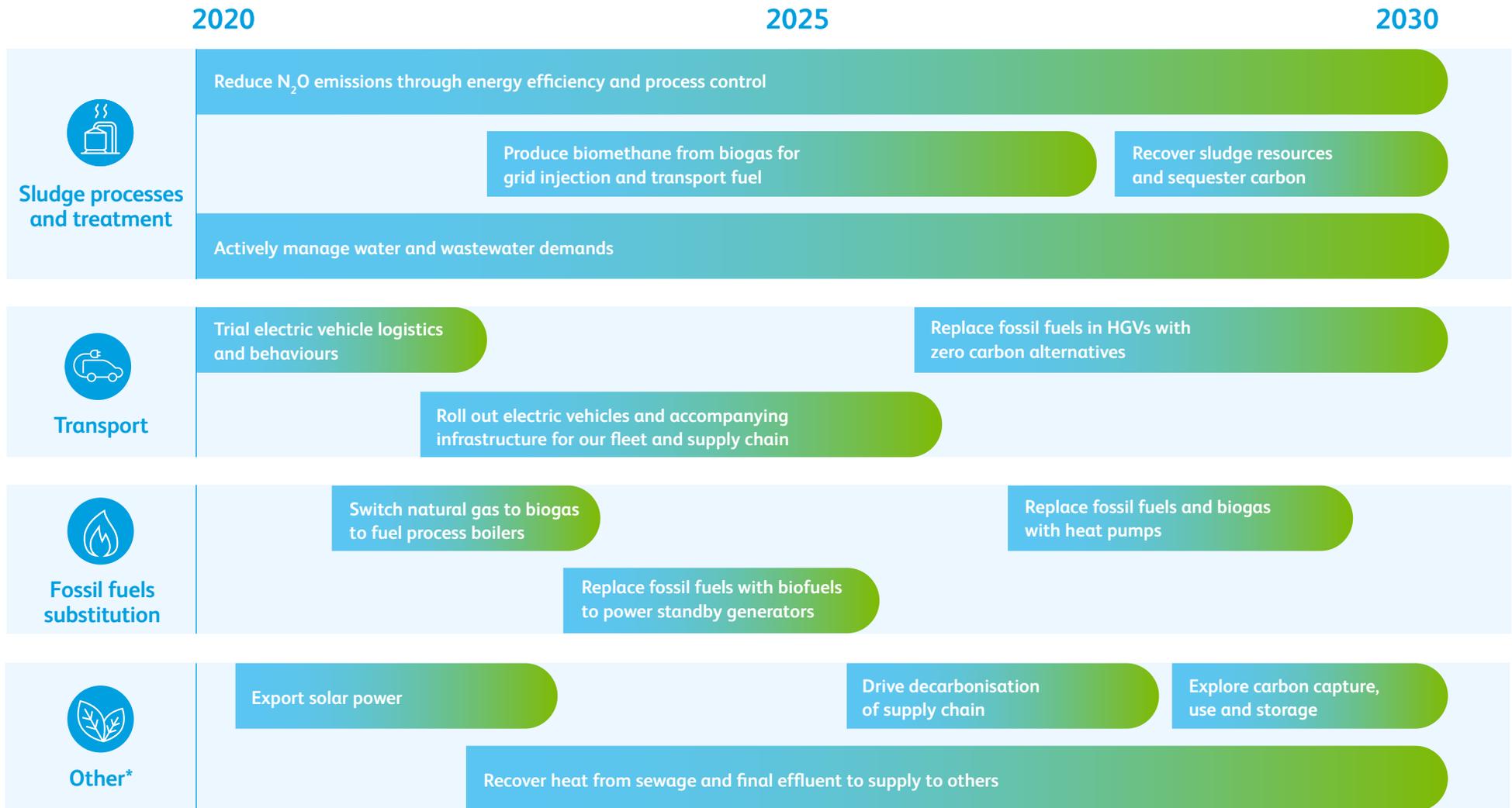
Consider carbon offsets, carbon capture and storage, and carbon sequestration opportunities

We intend to reduce our emissions by taking positive action ourselves. Buying offsets will be a last resort, but, if it becomes essential to meet our commitment, we'll buy UK offsets supported by the UK Government.

Our in-depth plan includes a range of green initiatives, ranging from renewable energy generation and fossil fuel substitution to energy recovery, energy efficiency and vehicle decarbonisation.

Turn over to
see our route map
in more detail →

Our route map in detail



*Electricity transmission and distribution, outsourced partners, water processes and third-party opportunities



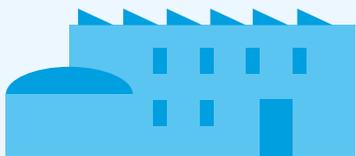
Reducing our fossil fuel use

We're increasing our use of biogas to replace fossil fuels on our sites. We're also looking to convert it into biomethane so that we can export it to the gas grid as a fuel for vehicles and alternative to natural gas.



Harnessing solar power

We're planning to increase the amount of solar power we generate by over 50% with panel installations at six new sites over the next 12 months – and hopefully even more after that.



Building a sustainable supply chain

We're engaging with our supply chain so that we can understand how they're measuring and reducing their own carbon footprint and look for new opportunities to improve our own.



Trialling electric vehicles

We're introducing electric vehicles to our fleet to help us understand and tackle the challenges of a longer-term roll-out, including how to handle planning logistics and where to install charging points at our sites and in the community.



Recovering heat from sewage

We're developing innovative plans to recover heat from our sewage and final effluent. This includes our work with Kingston Council to power over 2,000 homes from a new state-of-the-art energy centre at Hogsmill Sewage Treatment Works.



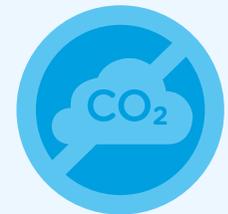
Improving energy efficiency

We're continually upgrading our water and sewage treatment processes to reduce the amount of energy they use, which is an essential part of keeping our emissions under control.



Unlocking our resources

We're helping farmers to substitute manmade fertilisers with biosolids, saving resources and avoiding carbon emissions.



What are we doing?

Looking ahead to 2030

We've created this route map so that we can understand the scale of the challenge and work together to identify opportunities to move towards net zero.

We understand it won't be an easy road, and we can't achieve it on our own. To overcome the net zero challenge, we'll need to successfully work with you and all our partners, stakeholders and regulators to unlock brand-new solutions.

We'll also need to adapt our plans as the latest technologies and opportunities emerge and mature, such as:

- **new sewage treatment processes**
- **hydrogen vehicles**
- **carbon capture**

In addition to all this, we're actively exploring how we can reduce the amount of embodied carbon associated with the delivery of our capital projects. We'll share our plans and goals for this as they develop.





This edition of our net zero route map was created in June 2021.

We view this as a living document that will continue to evolve over the coming months and years. We'll update our progress at least once a year in our Annual Report, Annual Performance Report and Sustainability Report, and on our website.

For more information, visit thameswater.co.uk/netzero