love every drop
anglianwater

Net zero by 2030

Our region is the driest and lowest-lying in the UK, more vulnerable than most to the effects of climate change, giving us hotter, drier summers and warmer, wetter winters, and causing sea level rise. The more the world warms, the worse those effects will be. Which is why we're playing our part in the global effort to limit further climate change: by cutting our carbon emissions to net zero by 2030.

Achilles
Carbon Reduce Certified
Powered by Toitū Envirocare

Great progress so far

We've been driving carbon out of our business for well over a decade. By 2020 we'd...

- **cut capital carbon 61%** against a 2010 baseline
- **cut operational carbon 34%** against a 2014/15 baseline

Now it's onward and downward. Fast.

Did you know...

We were the first water company to set targets for reducing capital carbon.

2030: our goal

70% reduction in capital carbon

(Scope 3 emissions, from our 2010 baseline.) We have strong influence over capital carbon but rely heavily on our supply chain.

Net zero operational carbon

(Scope 1 and 2 emissions and some Scope 3 for outsourced operational activities.)

Net zero doesn't mean we won't emit any carbon at all - although that's the ideal. It involves compensating for any emissions by capturing an equivalent quantity of carbon from the atmosphere and physically locking it up - in trees or soil, for example. It's a process called carbon sequestration. We want to minimise our reliance on that by getting our carbon emissions as low as possible, continuously pushing for reduction.

Why a 2030 deadline when the UK national commitment is net zero by 2050? It's about ambition and what that does for us. Since we started our carbon journey we've set big, hairy, audacious goals that have driven innovation and delivered results. We're firing the start gun in a sprint to 2030 that will involve our whole supply chain, our peers, government and regulators. We know we'll have residual emissions when we get to 2030 (especially process emissions, which we're still working to fully understand) so we'll have to keep running, finding new ways to cut carbon from there on. Some of the things already in our sights: cutting process and fugitive emissions, anaerobic wastewater treatment, nature-based solutions, hydrogen production and use, sludge pyrolysis and gasification. And digitalisation.

We think that using artificial intelligence and digital twins will enable us to bring big carbon, resilience and financial benefits. You'll be hearing about our successes - and no doubt some of our struggles - as we go.

Throughout, we'll be collaborating with other leading organisations, as we always have, to share knowledge and accelerate the pace of progress for our whole industry. The next nine years will give the transformation of our business momentum that will benefit us, our customers and shareholders for years to come.

We've set an interim 2025 target to reduce our operational carbon emissions by 30% against a benchmark set in 2018/19 - we'll tell you more about that on page 5.

Benefiting our customers and ourselves

As we've cut carbon we have also cut costs. A lot. We expect costs to reduce further as we become even more efficient. Which will help us achieve more with our investments and deliver better value to our customers.

Benefiting our investors

Decarbonising now will protect us from future transition risks: in the next few years carbon-intensive businesses will begin falling foul of regulators and investors. Some will be saddled with stranded assets - and a few may become stranded businesses. Not us!

Benefiting our region

All the electricity we use needs to be green. Power bought from the grid won't be fully decarbonised for a couple of decades, so we're going to continue developing renewable energy capacity on our land. It'll help us towards self-sufficiency, be cost-efficient in the long term, and enable us to store and supply green electricity to other businesses in our region, helping them to decarbonise too.

Benefiting our communities

Our vehicle fleet will be low or zero carbon and we'll reduce the number of journey miles by rethinking the way we travel around our region. That'll be good for air quality and congestion.

Our strategy - a three-step hierarchy

1 Reduce emissions

How: energy and water efficiency, nature-based solutions, technology improvements, digital enablers. Reductions will be supported by action in three areas:

- Embed behaviours aligned with net zero in Anglian Water and our supply chain, rethink how we implement and operate our current and future assets, and encourage customers to reduce water demand.
- Embrace and scale innovations that improve energy and resource efficiency, cut our use of fossil fuels, produce green gas, drive down process emissions and reduce transport.
- On land we own, deploy catchment-scale and nature-based solutions to improve water quality and reduce reliance on engineered infrastructure (and sequester carbon too).

2 Decarbonise our electricity supply

How: solar and wind private wire power purchase agreements, combined heat and power, green electricity procurement, sleeving and energy storage.

3 Remove/offset our residual emissions

How: carbon sequestration projects managed directly by us, within our boundary, or that we invest in. When working with third parties to offset our residual emissions, we will prioritise schemes in our region, supporting local businesses and our community. If we can't offset locally we'll seek to do so in the UK. International offset credit markets will be our last resort.

Key features

Flexibility and agility: Over the last decade we've maintained our focus on carbon reduction while responding to changing customer preferences, affordability challenges and regulatory pressures. We know how to balance the requirements for flexibility and focus going forward.

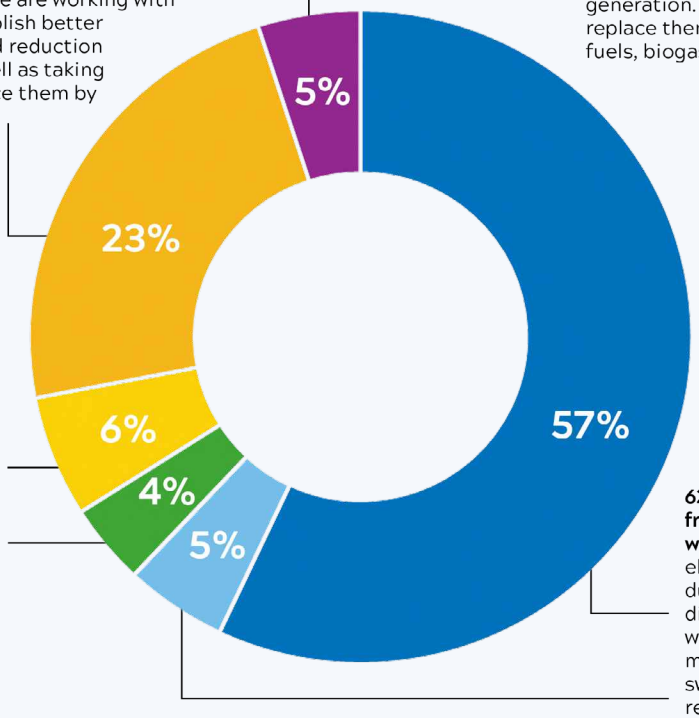
Credibility: Simply, we must put our strategy into practice, following the hierarchy (page 3). We're already accredited to ISO 14064 and PAS 2080, the international standards for quantifying and reporting greenhouse gas emissions and removals, and for managing infrastructure carbon. We'll remain so, applying the principles of both standards as we go forward.

Transparency: We remeasured our emissions following international guidance[1] in 2018/19 to establish a comprehensive new baseline, which we'll use to assess and report our progress. We'll be completely upfront about how we're doing.

Did you know...

We were the first company globally to be certified to PAS 2080, the international standard for managing infrastructure carbon.

Our 2018/19 baseline: 356,350tCO$_2$e



23% of our emissions arise mainly from wastewater recycling and sludge treatment. These process and fugitive emissions are difficult to tackle and we are working with others to establish better monitoring and reduction solutions as well as taking action to reduce them by 2030.

5% of emissions arise from fossil fuels used to heat our processes and provide resilience through standby generation. We need to replace them with lower carbon fuels, biogas or energy storage.

10% of emissions arise from transport (6% from our own transport and 4% from our supply chain). Many journeys are essential to operate and maintain our assets; HGVs play an important role in tankering sewage sludge from local sites to regional treatment centres, allowing us to generate more renewable power. Further effort is required to optimise routes, eliminate unnecessary travel, and convert our own and our suppliers' vehicle fleets to electricity, biofuels or hydrogen.

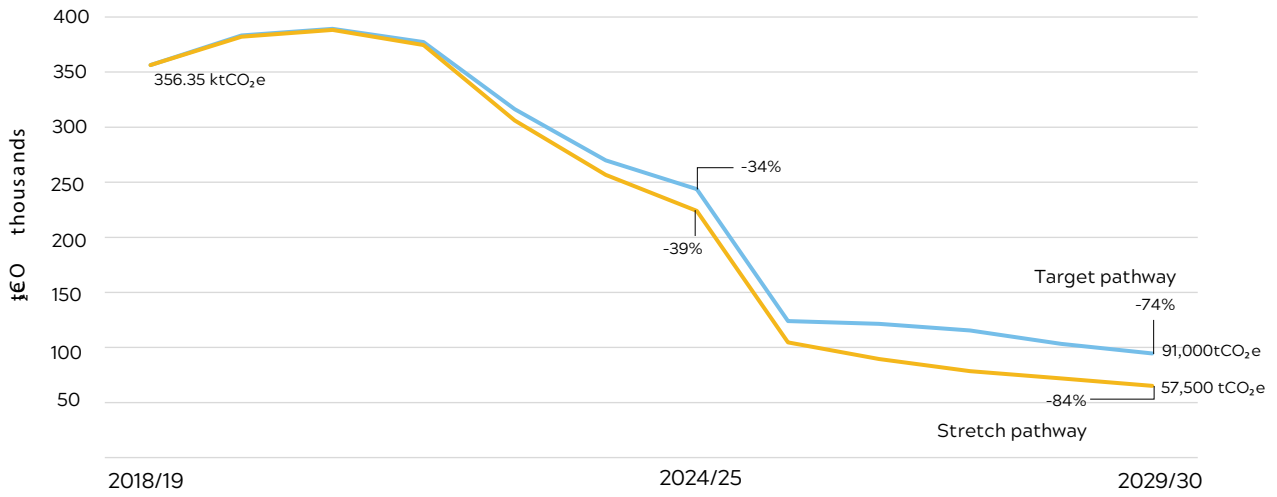
62% of our emissions arise from the grid electricity we use (57% due to the electricity source and 5% due to transmission and distribution losses). That's why we need to become more energy efficient and switch to green and renewable energy.

[1]Until 2018/19 we, like the rest of the sector, reported our Scope 2 emissions (electricity) using a location-based method employing UK grid average emissions values. This was aligned with the Carbon Accounting Workbook, Department for the Environment, Food & Rural Affairs guidelines and the Greenhouse Gas Protocol Scope 2 Guidance. However, the water sector's net zero 2030 commitment requires market-based reporting, detailing the carbon emissions associated with actual grid electricity contracts. This will allow us and our peers to make more informed choices on how to reduce the carbon intensity of the electricity we buy. We used the market-based method to establish our new emissions baseline.

[2]Our emissions baseline included adjustment of the emissions factor for N_2O to the latest industry reported value (the carbon equivalent effect on global warming, per ton of nitrous oxide from our process emissions). As emission factors are updated to reflect the latest science, we believe that our N_2O process emissions from water recycling treatment are likely to add between 41,000 and 118,000 tCO$_2$e/year to our baseline and residual emissions in 2030.

Our pathway to net zero operational carbon

Our pathway will cut net emissions 34% by 2025 and 74% by 2030. This will leave us with 26% to manage to meet our net zero target. Here's how we'll do it.



1. Energy efficiency and renewables

By 2025

- Implement energy efficiency measures to reduce our power demand by 26GWh/y in 2025, saving a total of 9,700tCO2e of emissions.
- Install up to 238MWp of solar generation capacity on and around our sites, through power purchase agreements (PPAs) including the 17.6MWp of capacity already delivered this AMP. This will yield up to 230GWh/y. We will consume 80GWh/y and export the balance to the grid.
- Continue to generate over 115GWh/y of renewable power through our biogas CHP engines, of which we will export 34GWh/y. This will avoid 45,000tCO2e/y of emissions in 2024/25.
- Continue to generate over 12.1GWh/y from our existing wind turbines. We are consuming 2GWh/y and exporting the rest to the grid. This will avoid 4,560 tCO2e/y of emissions in 2024/25.

2025-2030

- Procure a further 10GWh of renewable energy through private wire power purchase agreements and 90GWh more renewable electricity from renewable energy installations in our region.
- Implement energy efficiency measures to reduce our power demand by a further 58GWh/y.

2. Green electricity

By 2025

- We will meet up to half of our grid electricity requirements through REGO-backed green tariffs or by sleeving renewable energy to our sites through corporate power purchase agreements.

2025-30

- Aim to procure all of our remaining grid electricity through green tariffs or by sleeving renewable power to our sites.

3. Low carbon fuels

By 2025

- For non-transport uses, replace 30% of our gas oil with hydrogenated vegetable oil (HVO) while reducing consumption through efficiency gains to save 7,000tCO₂e/y.
- At the end of their service life, replace small vehicles with electric equivalents (25% of our small vehicle fleet).
- Switch 10% of our diesel HGVs to run on LNG.

2025-30

- Replace 90% of all small vehicles with electric equivalents.
- Switch 55% our HGVs to LNG.
- Gradually switch medium-sized vehicles and HGVs to alternative fuels such as hydrogen or biomethane – a programme extending beyond 2030.

4. Export renewable energy to support national decarbonisation

By 2025

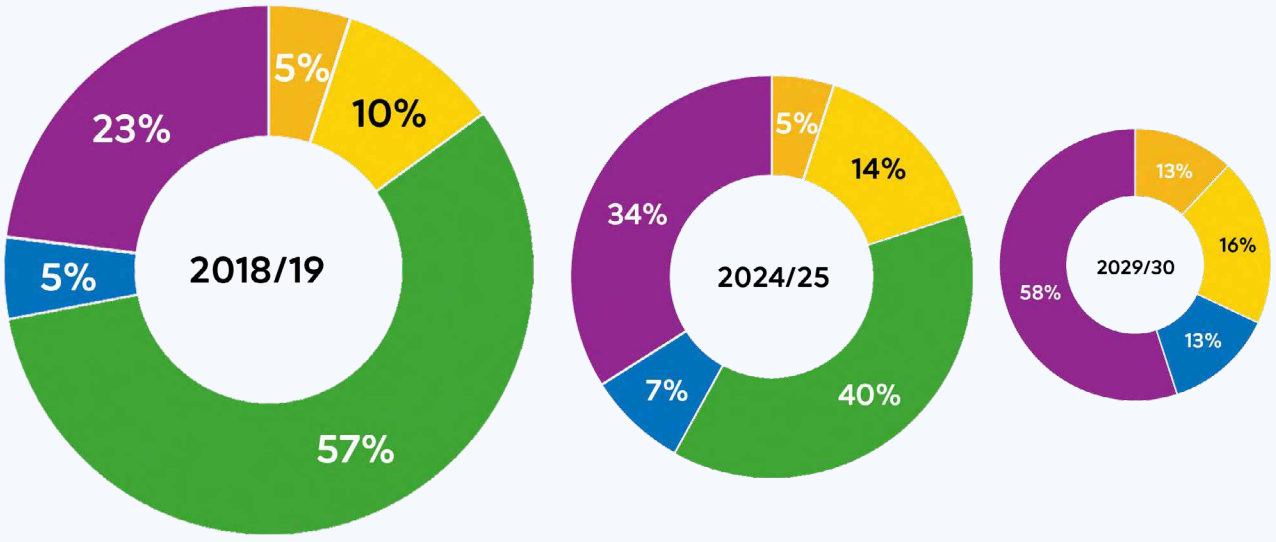
- Have a plan to upgrade the biogas we produce to biomethane that can be exported to the grid, used as transport fuel or supplied to industry, helping to reduce emissions in more challenging sectors of the economy.
- Develop a hydrogen strategy that will see us playing a greater role in the UK energy economy post-2030.

2025-30

- Switch 54% of our CHP generation capacity to operate as biomethane upgrade plants, producing 200GWh/y of biomethane which, by displacing fossil fuels, will deliver a more than 36,000tCO₂e emissions reduction. Although this reduction will arise elsewhere in the economy, it will count towards our own net zero goal.

Aggressive action on residual emissions

This shows the scale of reduction in residual emissions that will take place, and the changing balance between emissions by source.



356,350tCO$_2$e

222,390tCO$_2$e

91,000tCO$_2$e

Our 2029/30 residual emissions will consist of:

83,000tCO$_2$e of direct process and fugitive emissions from wastewater, sludge and water treatment services

23,500tCO$_2$e of transport-related emissions from HGVs and vans

18,300tCO$_2$e of emissions arising from electricity transmission and distribution loss, associated with green power purchased from the grid

18,600tCO$_2$e of emissions associated with fossil fuels used for process heat and emergency standby generation

- Power
- T&D
- Process
- Fuels
- Transport

From reach to stretch

The total reduction in residual emissions to 91,000tCO$_2$e/year is realistic. If Anglian Water wishes to go further and faster, we have analysed an alternative stretch pathway that would leave us 57,500tCO$_2$e to offset.

The stretch pathway reflects the art of the possible, if additional funding and policy levers can be put in place. It will be available to fuel ambition and stimulate further action in the industry and other sectors, unlocking additional opportunities.

Did you know...

In 2019 we sponsored the water sector's commitment to achieve net zero by 2030, which gave rise to the 'net zero 2030 routemap' published by industry body Water UK. We're putting that sector commitment and the principles of the routemap into action.

For more information contact David Riley Head of Carbon Neutrality driley3@anglianwater.co.uk or visit our website www.anglianwater.co.uk