from Southern Water

Our plan to reach net zero

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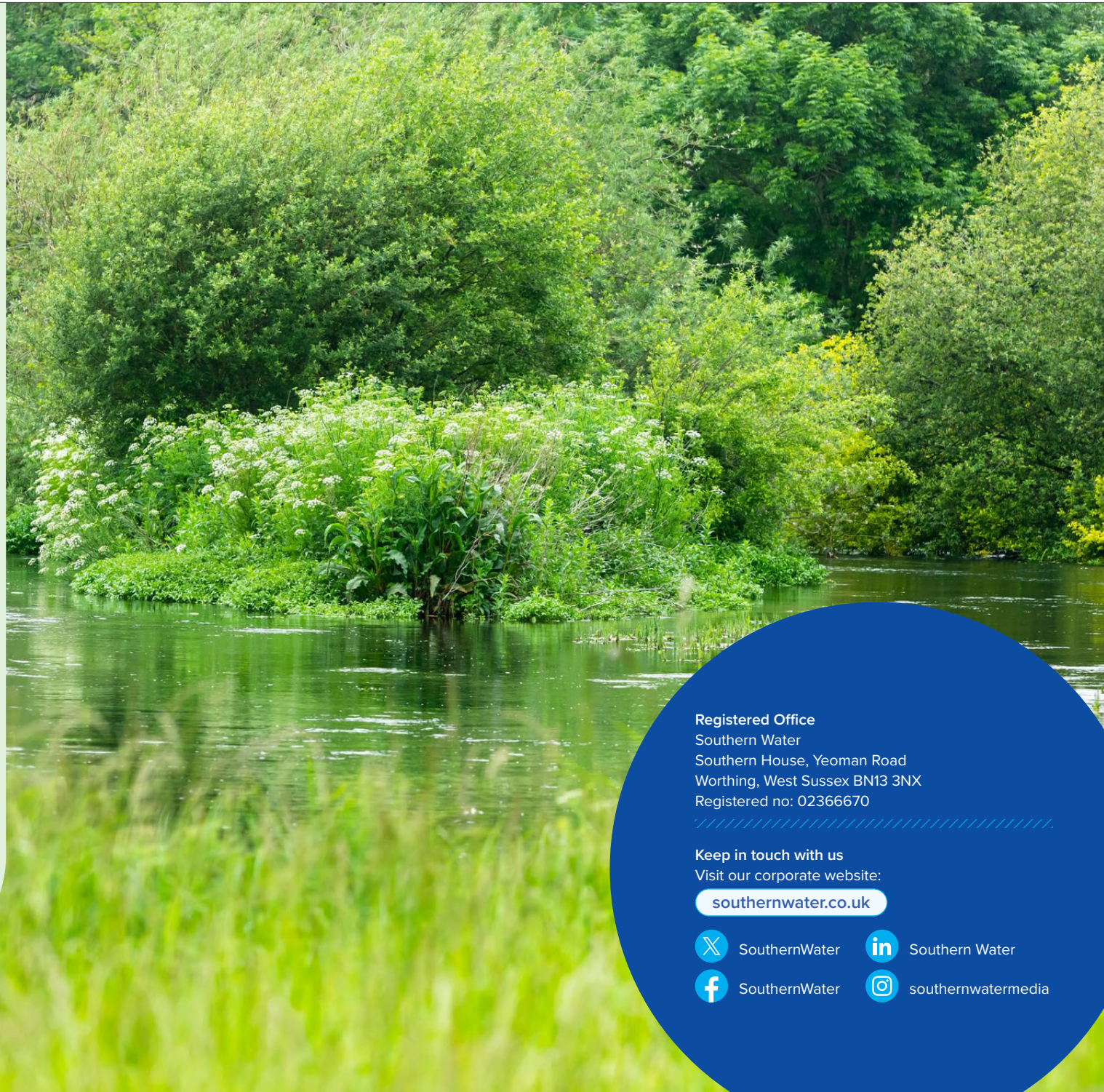

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Foreword

Lawrence Gosden
CEO

At Southern Water, our purpose is clear: to provide water for life, protect and improve the environment, and support the health and wellbeing of our communities.

Climate change is the defining challenge of our time, and we are proud to be playing our part in this decisive decade for action.

Our Net Zero Plan sets out a bold and evidence-led pathway to reduce emissions across every part of our business – from energy and transport to water and wastewater treatment, bioresources, and capital delivery. It reflects our commitment to transparency, accountability, and innovation, and is underpinned by strong leadership and a carbon-conscious culture.

We know that reaching net zero will not be easy. It will require collaboration across our industry, with regulators, suppliers, and the communities we serve. It will also require us to embrace new technologies, rethink how we operate, and remain agile in the face of uncertainty.

The Board, our Executive Leadership Team, and our shareholders are fully committed to this journey. This plan is a key part of our wider environmental strategy, ensuring that we continue to deliver high-quality services while protecting the natural environment for future generations.

1 Why net zero matters

1. Our core purpose – providing water for life – depends on a healthy natural environment.
2. Climate change directly threatens our water resources and infrastructure.
3. Acting now to reduce emissions means we're playing our part in mitigating climate change, supporting long-term resilience and providing better outcomes for our customers.

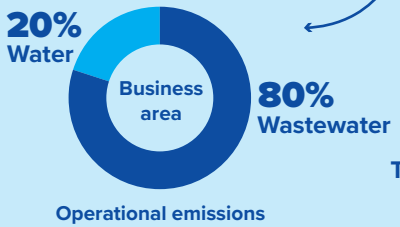
2 What we're aiming for

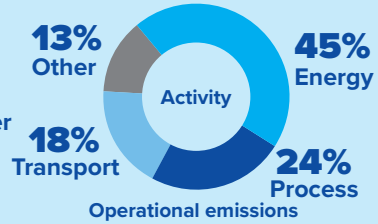
Our current emissions (2024–25):

256 $ktCO_2e$ Net operational emissions (Scope 1, 2 and 3)

493 $ktCO_2e$ Including embedded emissions

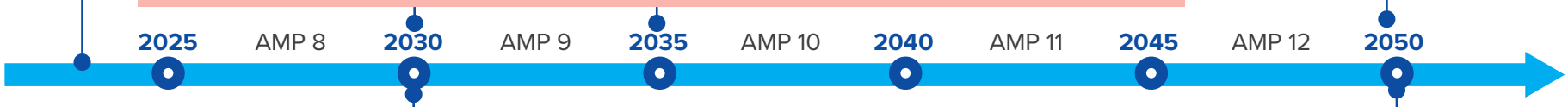
Where we are





External Factors
UK Government Net Zero Target

UK government targets to transition from internal combustion to electric vehicles
By 2030 – 80% of new cars and 70% of new vans
By 2035 – 100% of new cars and vans



Where we're aiming to be

35%

By 2030 – 35%
reduction in operational emissions compared to 2022–23 (152 $ktCO_2e$) (Scope 1 and 2 emissions).

By 2050 – Achieve and maintain net zero
across all operational and embedded emissions.

3 How we'll get there

Renewable energy

- Increase electricity self-generation to 25% of consumption by 2030 by upgrading our CHP engines and developing our Solar photovoltaic (PV) portfolio.

Operational efficiency

- Reduce leakage and water demand in line with our Business Plan 2025–30.
- Optimise chemical use, modernise assets, and improve our energy efficiency, targeting 12 GWh of annual savings.

Process emissions monitoring and bioresources strategy

- Invest in process emissions monitoring (e.g. nitrous oxide trials) and advanced sludge treatment to reduce fugitive emissions from sludge treatment.

Transport

- Transition at least 40% of our fleet to electric vehicles by 2030.

Capital carbon

- Apply publicly available specification (PAS) 2080 principles to limit whole-life carbon impact, supported by better data, supply chain collaboration, and governance.

Residual emissions

- Enhance natural sequestration through nature-based solutions and explore credible offset options.

4 Our enabling pillars

Tools and processes

The right tools and processes to understand the challenge and support robust decision-making.

People and culture

Leveraging our people's skills and embedding a strong carbon-conscious culture.

Collaboration and innovation

Working across teams and with partners to tackle complex, hard-to-abate emissions where new solutions are needed.

Why does net zero matter to Southern Water?

Our targets

We provide water for life to enhance health and wellbeing, protect and improve the environment and sustain the economy. This is our purpose as an organisation, which means we rely on the health of our environment and, as such, we work hard to protect and enhance our region's water resources. We understand the challenges that climate change poses to our operations, and this is why we're acting now to reduce our emissions, protect our environment and get better outcomes for our customers.

The UK Government has set a legally binding target to achieve a net balance of emissions that reaches zero by 2050.[1] This is in alignment with the 2015 Paris Agreement to limit global warming to below 2°C above re-industrial levels and pursue efforts to limit the temperature increase to 1.5°C.[2] This is widely accepted as the level at which irreversible damage would occur to our natural environment. We recognise the severity of this and that's why we've set targets to reduce our emissions.

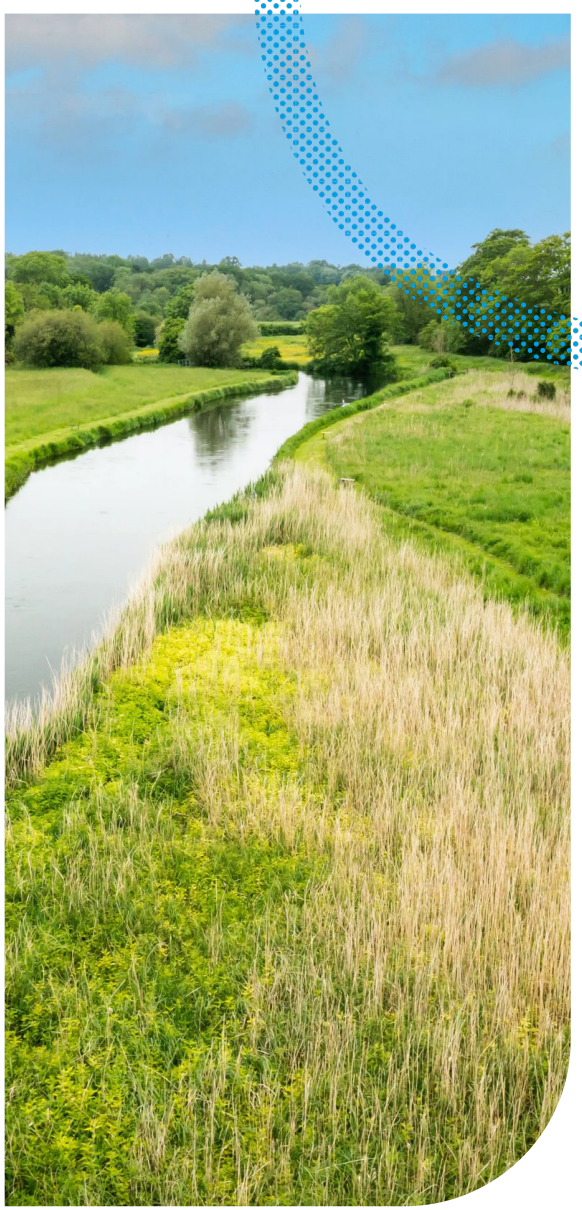
We also have targets set by Ofwat, the water sector's lead regulator, to limit our emissions over the next five-year Investment Period (2025–30). These have been set using a specific set of carbon accounting rules and boundaries, which differ from our Interim 2030 target.

Our current emissions

We publish our emissions impact each year in our annual report,[3] which includes details on our current performance and a breakdown of emissions sources.

Table 1. Our interim and long-term emissions reduction targets

Target		Interim – 2030	Long term – 2050
		35% reduction from 2022–23 baseline	Net balance of emissions that reaches zero
Operational emissions	Scope 1	●	●
	Scope 2	●	●
	Scope 3		●
Embedded emissions	Construction schemes		●
	Purchased goods		●



1 UK Government, 'Net Zero Strategy: Build Back Greener,' GOV.UK, October 19, 2021, https://www.gov.uk/government/publications/net-zero-strategy.
2 UNFCCC, 'The Paris Agreement' (UNFCCC, December 12, 2015), https://unfccc.int/sites/default/files/resource/parisagreement_publication.pdf.
3 Southern Water, 'Annual Report and Financial Statements 2024–25,' Southern Water, 2025, https://www.southernwater.co.uk/annual-report-2025/.

Our approach to net zero

Our strategy

1 Continually improving our understanding of where our emissions currently come from and how this is likely to change towards 2050.

2 Remaining adaptable to evolving regulation, policy, and macroeconomic shifts.

3 Identifying and putting in place activities to speed up our journey to new zero emissions through our carbon reduction hierarchy (see Figure 1)

Figure 1. Our carbon reduction hierarchy

Reduce and avoid

Through efficiency savings

Replace

Use alternative solutions that are lower carbon

Remove

Through sequestration on our estate

Offset

Use responsible carbon offsetting

Our enabling principles

Tools and processes:

We have the tools needed to help us understand the challenge and the right processes in place to support good decision making.

People and culture:

We need strong communication, ownership and accountability. We'll leverage the knowledge and skills of our people and instil a carbon-conscious culture throughout our decision-making and processes. This approach is supported by strong leadership, ensuring carbon remains a top priority for us.

Collaboration and innovation:

Net zero is a complex challenge with multiple dependencies. Collaboration across operational areas and with the wider industry will help us make the most of our resources, reduce knock-on impacts of decisions and realise co-benefits, such as habitat restoration. Innovation will be required to address the hardest-to-reduce emissions, where technology is still immature.

Our plan

We're focused on six key action areas to help deliver our ambition:

- Reducing our energy demand
- Decarbonising our fleet
- Improving our bioresource processes
- Focusing on process emissions
- Scope 3 emissions and capital carbon
- Exploring natural carbon stores.

These areas are explored in more detail in this section and are being delivered in line with **Our strategy** and supported by **Our enabling principles**.

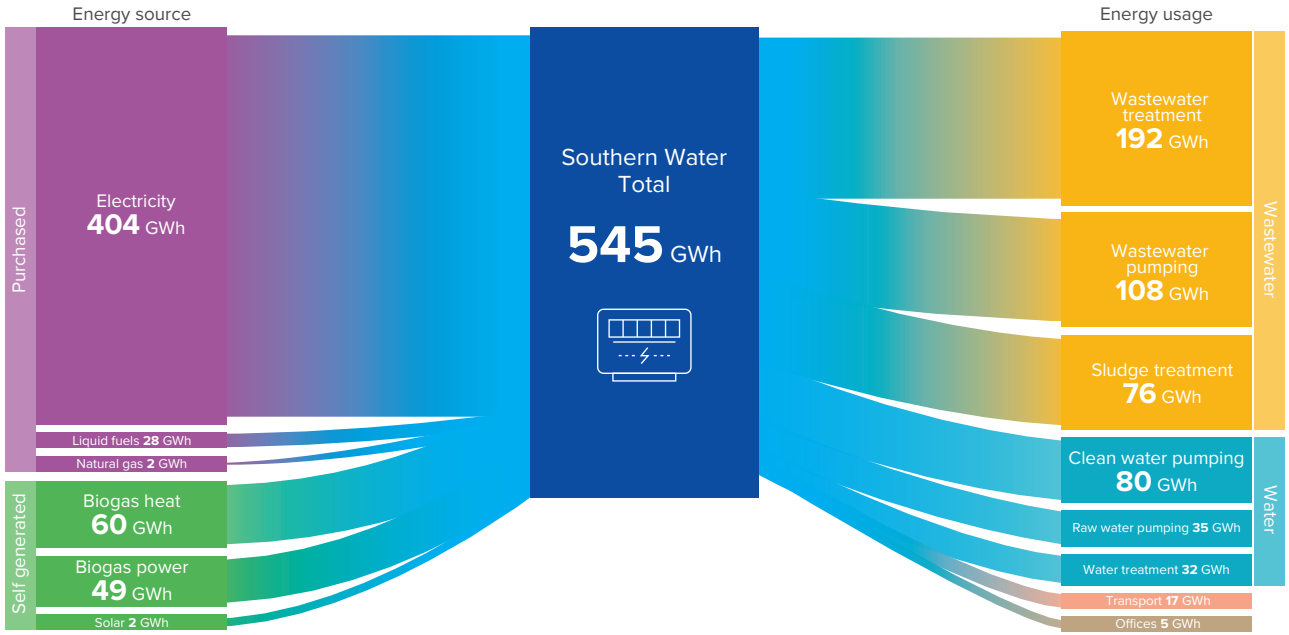
Energy

Emissions from energy are currently our largest source of emissions This includes the impact of burning fossil fuels for heat or electricity generation (Scope 1), the consumption of electricity from the national grid (Scope 2) and the associated losses from these activities (Scope 3).

To reduce these emissions, we're taking a two-pronged approach; both increasing our generation of renewable energy and reducing our use. Our approach to energy management is embodied in our 'Energy for Water' campaign, built around four strategic pillars: make more, use less, reduce costs and foster a culture of shared responsibility.

We also consider the decarbonisation of the UK grid – this will have a positive effect on any electricity we use but will reduce the carbon benefit of renewable generation and energy saving actions.

Figure 2. Our energy generation and consumption mix



Source: Southern Water Annual Report and Financial Statements 2024–25

Renewable generation

Increasing our supply of self-generated electricity will reduce emissions, save costs and reduce our exposure to fluctuating energy prices. We have a target to increase self-generation from 12.5% (2022) to 25% (2030). To achieve this, we're investing in two separate areas:

- New combined heat and power (CHP) engines to generate more clean energy from the waste that we process. We estimate that this could avoid 80 GWh in grid electricity each year. It will also future proof our capacity as we upgrade our sludge treatment sites form conventional digestion to advanced anaerobic digestion, producing greater volumes of biogas in the process. See our bioresource strategy section for more information about how we plan to evolve over approach over time.
- Increasing our installed solar photovoltaic (PV) capacity from 2 MW across three sites currently to 7.4 MW across seven sites by 2028. In addition to this, we plan to investigate the feasibility of expanding our solar portfolio by a further 10 MW beyond what's already been planned.

Our plan continued

Saving energy

We're always looking for energy saving opportunities and we put them into action by:

- **Elimination of Waste (EoW)** – Following an internal strategy to identify waste and inefficiency across our sites, networks and operations and develop a business case for investment.
- **Energy Savings Opportunity Scheme (ESOS)**[4] – Taking part in a mandatory scheme administered by the Environment Agency (EA) to identify cost-effective measures to save energy.

Through these initiatives we aim to realise 12 GWh/yr of efficiency savings by 2030. We'll continue to progress new ways of working like this over the current investment period.

Reducing our use of fossil fuels

We use natural gas to heat our facilities. We also use gas our wastewater treatment works to provide additional heat for digestion, above what can be supplied by our own supply of biogas. We plan to continue to reduce our reliance on fossil fuels by changing out our gas boilers for heat pumps, and through additional heat and energy generation through our bioresource strategy. However, we understand that we may still need to burn fossil fuels for use in back-up generators and for residual heat demand in our bioresource plants. As such, our Energy team continues to review options for low-carbon fuels, such as hydrogen. However, these have so far been ruled out on a cost-benefit basis.

Water treatment and supply

Our operations to treat and supply drinking water to our customers are energy intensive and emissions come from electricity for treatment and pumping, chemicals used for treatment and associated activities.

To reduce these emissions, we're investing £517 million to 2030 to cut leakage and manage customer water use. Our leakage rate is currently 17%, and we aim to reduce this to 13% by 2030, targeting 10% by 2050.[5] We also plan to lower personal water use from 128 litres per person, per day to 110 l/p/d by 2050, supported by installing over one million smart meters.[6] These measures will lower the energy and chemical use needed for treatment and pumping, cutting both costs and emissions.

This is supported by findings from our study on chemical use, which also demonstrated how the emissions factors of chemicals for water may decrease as national and international electricity grids decarbonise and production becomes less emissions intensive. By considering this research and by identifying the highest consuming schemes, we plan to target 'hotspots' to optimise chemical dosing and minimise emissions impact.

Wastewater treatment

Emissions from the treatment of wastewater and the processing of associated sludge products are, and will continue to be, the largest source from operations.

A significant portion of these emissions come from gases released during biological treatment and they have a higher global warming potential than carbon dioxide. This makes them particularly harmful for the environment.

In 2023, we commissioned a detailed study to identify process emission 'hotspots' and develop actions to reduce them. Since then, we have begun trials with nitrous dioxide sensors at selected sites to build a baseline and develop machine-learning models to optimise treatment processes and reduce emissions, without compromising water quality.

Treating wastewater typically uses significant amounts of electricity for aeration, pumping and powering other supporting activities. As part of our energy strategy, we've identified equipment at our wastewater treatment facilities that require upgrading or replacement, offering energy savings. This has been done through our EoW programme, and we expect the upgrades to significantly contribute towards our 2030 energy saving target.

We expect the emissions from chemicals used in wastewater treatment to increase as tighter nutrient removal standards come into effect. To reduce this risk, we plan to target our highest-impact sites, reviewing both chemical dosing and chemical usage alternatives.

4 UK GOV, 'Energy Savings Opportunity Scheme (ESOS),' GOV.UK, March 4, 2025, https://www.gov.uk/guidance/energy-savings-opportunity-scheme-esos.
5 Southern Water, 'Business Plan 2025-30 - Southern Water,' Southern Water, 2025, https://www.southernwater.co.uk/about-us/our-plans/business-plan-2025-30/
6 Southern Water, 'SRN28 Smart Metering Enhancement Business Case,' October 2, 2023, https://investors.southernwater.co.uk/media/9078/srn28-water-resources-smart-metering_redacted.pdf.

Our plan continued

Bioresources strategy

When we treat and dispose of sludge – a byproduct of the water treatment process – emissions are created. However, we also generate renewable heat and power from processing this sludge, which is used in to power our treatment processes. This means our bioresources strategy plays a significant role in reducing our overall emissions.

We currently operate 15 Sludge Treatment Centres (STCs), using conventional mesophilic anaerobic digestion (MAD). Over the coming investment periods, we plan to consolidate these into seven larger sites with advanced anaerobic digestion (AAD) processes. Once complete, these new sites will process 90% of our sludge, with the remainder treated at existing digesters.

AAD releases around half the emissions of MAD under standard accounting methods, produces more biogas, and reduces final sludge volumes, helping to cut our Scope 1 emissions by 16% annually, once fully delivered.

In line with the Industrial Emissions Directive (IED), we're investing through our Business Plan 2025–30 to limit emissions from our sites. This includes covering on-site sources to reduce methane losses, although under current accounting methods this benefit is not yet fully captured in our reported figures.[7]

Transport

Emissions from transport supporting the day-to-day operational activity of our sites primarily come from tankering waste products, business travel by employees and contractors. We're taking action to address all sources by upgrading our fleet to low-emission vehicles and working with our suppliers to make sure they're doing the same.

We're phasing out internal combustion engine vehicles where possible, replacing them with electric vehicles (EVs) and hybrids, replacing a minimum of 40% of our fleet by 2030, with full transition to electric cars and vans by 2035 in line with government legislation. A small number of specialist operational vehicles such as 4x4s and mobile plant may remain until the end of their life, or until low-carbon alternatives are available.

In 2024–25 we installed solar panels on over 280 fleet vehicles. Fleet solar is used to power onboard auxiliary systems including air conditioning and refrigeration units, reducing emissions, fuel consumption and maintenance costs and increasing the vehicle's reliability and efficiency. We'll continue to do this.

We're encouraging our employees to reduce their impact by promoting car sharing and our Cycle to Work scheme. We've also maintained a hybrid style of working, minimising in-person meetings and reducing commuting.

Most of our outsourced transport emissions come from contractor activity, with sludge tankering as the single largest contributor. We're working with our contractors to understand their plans, making sure that they feed into our future emissions modelling.

7 Current industry standard accounting methods (as calculated using the Carbon Accounting Workbook) use an average emissions factor and a company's sludge throughput to calculate the impact of these emissions. Using representative monitoring to report these emissions would allow us to reflect real changes to fugitive emissions from the treatment processes at our sites.

Our plan continued

Embedded emissions

Our larger construction schemes

Emissions from our construction schemes are a significant part of our overall carbon footprint and are expected to continue as we deliver new infrastructure to meet regulatory requirements and improve services for our customers. However, we're taking key steps to limit this impact through our PAS 2080 Action Plan.

Our plan covers five key themes for improvement that will make sure that we're aligned with the PAS 2080 standard[8] by the beginning of the next five-year investment period in 2030. In the first year, we will focus on defining and communicating our targets to suppliers, building a community of practice and establishing a programme carbon database. We've identified 'hotspot' schemes within the programme where we're piloting our new whole-life carbon management process to reduce the impact of our largest projects.

As we move through the investment period, we'll monitor our performance against KPIs, allowing us to act early where targets are at risk and capture lessons learnt for continuous improvement. We'll continue to develop new digital tools and data capture processes to inform early decision making for the next investment period.
To minimise current carbon impact, we'll proactively work with partners to trial innovative low-carbon materials and processes and explore opportunities to implement nature-based solutions where possible. Finally, we'll maintain consistent communication of targets, learnings and achievements both internally and with our partners to keep up momentum.

Purchased goods and services

We're continuing to motivate our suppliers to reduce the emissions impact of the goods and services they supply to us through our contract and procurement process,
This requests that our suppliers provide us with details of:

- their carbon reduction plans and progress against these,
- compliance and/or certification with any climate change related standards and initiatives,
- and data for greenhouse gas (ghg) emissions produced in the supplier's delivery of works or services provided.

This process is designed to align with our own ambitions, and we'll proactively review it to make sure that suppliers contribute positively to achieving our emissions reduction targets.

Residual emissions

We know that our current actions and transition of the wider economy towards net zero could be insufficient to reach and maintain a net balance of emissions that reaches zero. Therefore, we recognise the role of natural sequestration and responsibly sourced carbon offsets to reach our 2050 target.

For example, in 2022, we partnered with Kent Wildlife Trust to assess our land's capacity for carbon sequestration and biodiversity net gain. We're also embracing nature-based solutions for wastewater treatment and stormwater management. These solutions have the potential to deliver sequestration, biodiversity net gain and amenity benefit in addition to addressing the primary driver.

We'll continue to explore these opportunities and welcome the opportunity to work with regulators and government to establish equitable carbon accounting standards in this space to enable the transition to net zero.

8 Institute Civil Engineers (ICE), 'Guidance Document: PAS 2080 for Carbon Management,' Institution of Civil Engineers (ICE), 2023, https://www.ice.org.uk/areas-of-interest/decarbonisation/guidance-document-pas2080.

Glossary

Term	Definition
Advanced anaerobic digestion (AAD)	An enhanced process for breaking down wastewater sludge in the absence of oxygen, typically involving pre-treatment or higher temperatures to improve biogas yield compared with conventional digestion.
Asset management plan (AMP) 8	The eighth regulatory investment period set by Ofwat for the UK water industry, covering 2025–30, during which companies must deliver specified outcomes and improvements.
Biogas	A renewable gas mainly composed of methane and carbon dioxide, produced from the anaerobic digestion of organic matter such as sewage sludge.
Bioresources	Organic materials, such as sewage sludge, that are treated and reused (e.g., for energy recovery or soil improvement) within the wastewater and resource management sector.
Capital delivery programme	A structured programme of investment projects focused on delivering new infrastructure, upgrades, or asset renewals within a regulated investment period.
Carbon offsets	Emission reductions or removals from external projects (such as renewable energy, reforestation, or carbon capture) used to compensate for emissions that cannot be eliminated directly.
Combined heat and power (CHP) engines	Systems that generate electricity and capture usable heat, improving overall energy efficiency.
Conventional mesophilic anaerobic digestion (MAD)	A standard anaerobic digestion process that operates at moderate temperatures (around 30–38°C), commonly used in wastewater treatment to stabilise sludge and produce biogas.
Fugitive emissions	Unintended releases of gases (such as methane) from equipment, pipelines, or storage during wastewater and sludge treatment processes.

Term	Definition
Global warming potential (GWP)	A metric that compares the warming effect of a greenhouse gas relative to carbon dioxide (CO_2).
Methane (CH_4)	A potent greenhouse gas with a Global Warming Potential 28 times greater than CO_2 commonly emitted from the wastewater treatment process.
Natural sequestration	The process by which natural systems such as soils, forests, or wetlands absorb and store carbon from the atmosphere.
Nature-based solutions (NbS)	Engineering solutions that utilise and restore nature to address the core issue.
Net zero	A state where the balance between greenhouse gas emissions produced and those removed from the atmosphere is equal, resulting in no net increase in emissions.
Nitrous Oxide (N_2O)	A greenhouse gas with a Global Warming Potential approximately 265 times that of CO_2 commonly emitted from the wastewater treatment process.
Scope 1 emissions	Direct greenhouse gas emissions from sources owned or controlled by an organisation, such as fuel combustion or on-site processes.
Scope 2 emissions	Indirect greenhouse gas emissions from the generation of purchased electricity, heat, or steam consumed by an organisation.
Scope 3 emissions	All other indirect greenhouse gas emissions that occur in the value chain of an organisation, including those from suppliers, customers, business travel, and waste disposal.

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