



Greener: climate

Climate strategy: How climate-related risks and opportunities impact the organisation's businesses, strategy and financial planning continued

Building resilience through adaptive planning

In developing our long-term strategic and financial plans, and seeking customer feedback on those proposals, we have used various scenarios encompassing wide ranges of environmental, regulatory, technological and societal possibilities.

In the last year we have built on our track record of effective long-term planning and combined those plans with our approach to asset management, which has been certified to ISO55001:2014, into an iterative, adaptive approach; our long-term delivery strategy (LTDS). An adaptive approach, using scenario analysis, means our LTDS prioritises problems with evidence of impact, such as the most material climate risks, while monitoring remaining uncertainties. This means we can choose the appropriate timing and approach for investment as climate science and technology advances, as legislation develops and as our customer and stakeholder expectations evolve. This approach helped us to build an investment plan with a low and no regrets approach in the core pathway for

each area, while retaining flexibility, where there is uncertainty, via the alternative pathways. See example below.

Climate change presents a systemic and often compounding risk throughout our operations and services, with varying vulnerabilities dependent on the geographies and asset mix. We have assessed our operational resilience across a range of credible climate change scenarios; benign (low) aligned to RCP 2.6, adverse (high) aligned to the RCP 8.5 and where helpful a central pathway aligned to RCP 6.0. It has become apparent that RCP 2.6 (well below 2°C of warming) is no longer credible and that planning for this pathway would likely see the UK water sector ill-prepared for the future. It is important we plan for a plausible future, therefore, we have chosen the central RCP 6.0 projections for our core pathway investment plans to balance cost efficiency and physical resilience.

As well as considering physical risk scenarios, we have assessed potential impacts on our GHG emissions from our water, wastewater and bioresources core and adaptive plans. We have prioritised

water efficiency in our plans so that we can extend services to meet the needs of the growing population, while minimising pressure on water sources and investments and protecting rivers over the medium and long term. These priorities pose substantial growth pressures in both embodied and operational emissions. Our plan strives to keep us on track to achieve our near-term targets, but to maintain a science-based trajectory to net zero 2050 will need transformational innovation and investment for GHG emissions reduction as a primary driver, and also the full valuation of GHG emissions throughout national policy frameworks.

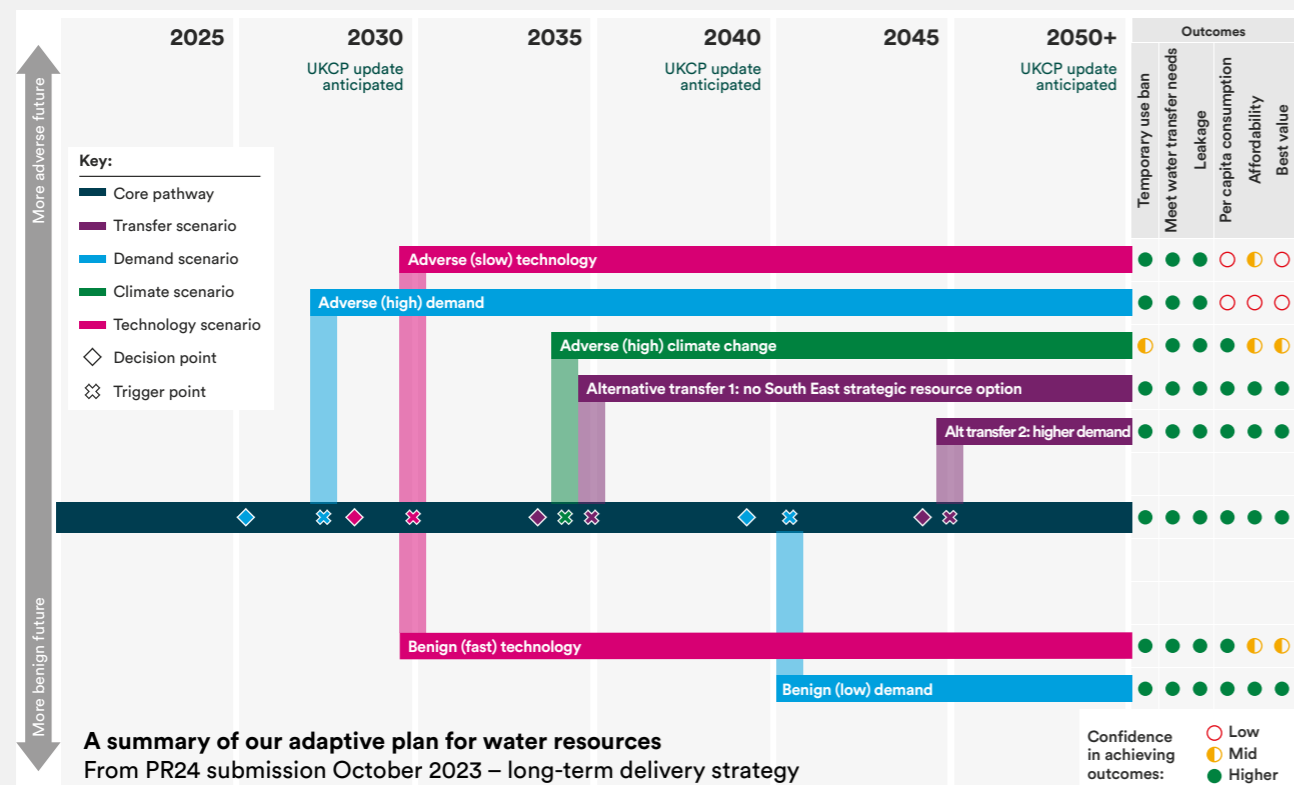
Read our three adaptation progress reports on our website at unitedutilities.com/corporate/responsibility/environment/climate-change

Read our long-term delivery strategy and our approach to operational resilience and asset health at unitedutilities.com/corporate/about-us/our-future-plans

Read our **net zero transition plan** on pages 37 to 39

An adaptive plan example with core and alternative pathways

We have developed strategic adaptive plans for water, wastewater and bioresources operations and tested each of these plans against multiple scenarios. We used scenarios for climate change, demand, reduced abstraction, technology, water transfers and changing expectations. Each adaptive plan, therefore, has one core pathway and alternative pathways, defined by decision or trigger points where alternative investment/development paths diverge. The confidence in achieving key outcomes is estimated for each pathway.



A summary of our adaptive plan for water resources
From PR24 submission October 2023 – long-term delivery strategy

Greener: climate

Our net zero transition plan

Our transition plan to contribute to, and prepare for, a rapid global transition towards a low-emission economy is based on our established climate change mitigation strategy. This has four components: vision and visibility; ambition and commitment; demonstrating action; and beyond here and now. Between them, these define our principles, priorities and implementation approach.

Vision and visibility
Demonstrating integrity and leadership in carbon reporting and disclosure.

Vision and visibility are the foundations of our climate change mitigation strategy and thus our net zero transition plan. We are dedicated to understanding how every aspect of our operations contributes to our emissions. Our aspiration is to ensure we consider the climate in all operational and strategic decision-making, influencing strategy and behaviours by including emissions management in remuneration schemes and including government carbon values into our best value framework used for decision-making.

We are committed to reporting in an open and transparent way, aiming to be recognised as among the best in the UK. We have a strong track record of sustainability reporting, having disclosed our verified GHG emissions since 2008. We publish our GHG emissions and underlying energy use in our annual report as required under the Companies Act 2006 and follow the 2019 UK Government Environmental Reporting Guidelines: including streamlined energy and carbon reporting guidance. Our reporting is supported by robust governance and accountability mechanisms. Our greenhouse gas inventory has undergone independent, third-party verification by Achilles Group, confirming our reporting is compliant with the international carbon reporting standard (ISO 14064) and certified as compliant with the CarbonReduce programme.

We have responded to the CDP climate change questionnaire since 2010 and use this as our benchmark of leadership. We were proud that our 2023 response was rated as A-, maintaining our position in the leadership category.

Ambition and commitment
Playing our part to mitigate climate change and lower our greenhouse gas emissions to help make the North West a better place to live now and in the future. An important element of our approach is to demonstrate our ambition and encourage others to contribute by making public commitments.

In 2020 we made six carbon pledges and we are making good progress to deliver these. See page 74 for more details. Central to our pledges was to set science-based targets for all emission scopes. United Utilities is proud to be the first UK water company to have had near-term targets approved by the Science Based Targets initiative (SBTi), a collaboration that defines and promotes

global best practice in science-based target setting. Our four targets cover all three emission scopes and the scope 1 and 2 emissions reduction target is consistent with the 1.5° ambition of the Paris Agreement. We plan to review, and if needed, revise our near-term science-based targets as per SBTi guidance and in line with our next business planning period.

The SBTi Corporate Net-Zero Standard was launched in late 2021 and reinforcing our support to the Business Ambition for 1.5°C campaign, we submitted our long-term target and commitment to net zero for validation in January 2024.

Demonstrating action
Reducing our environmental impacts through delivery of transformational strategies and culture change.

Our action plan to achieve the long-term ambition of net zero by 2050 (in line with climate science and the UK Government targets) is set out on the next page. We are already working on, and delivering on, actions in all themes to:

- Reduce** through the efficient use of resources;
- Replace** processes and resources with more sustainable alternatives;
- Remove** GHGs from the atmosphere;
- Collaborate** to tackle emissions in the supply chain; and
- Innovate** to address current technological or market gaps.

Our priority in the medium term will be to reduce our absolute emissions through these actions before we use carbon units or purchase any credits to offset the residual emissions to net zero.

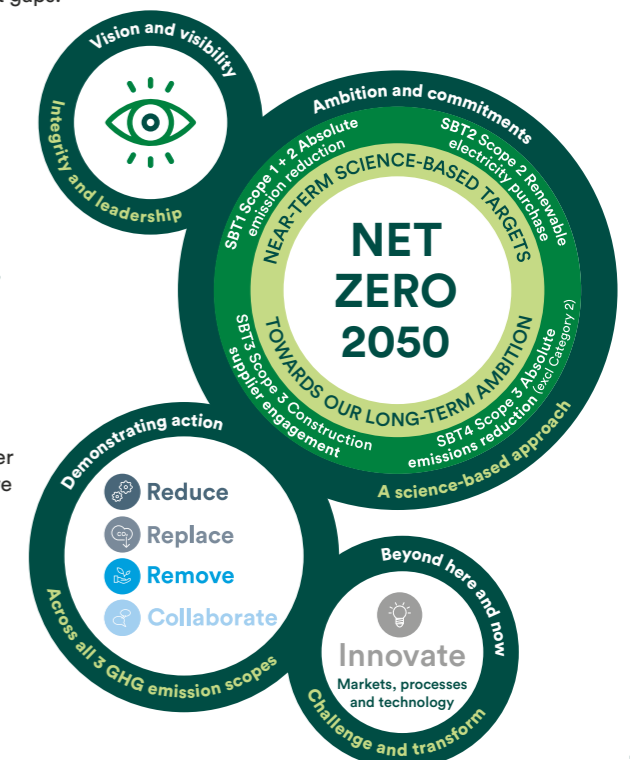
Beyond here and now
Innovating across processes, technology and culture. Our strategy pillar of 'beyond here and now' encourages us to reflect on the challenge to influence emissions beyond our current inventory and existing capabilities. To deliver our net zero transition plan we will challenge standards and engage with industry peers, our supply chain, and other partners to develop markets, technologies and practices to reduce or mitigate future emissions.

We co-chair the Water UK carbon network and are part of a team who lead net zero research across the industry, for instance exploring and testing what operational interventions can be made to reduce process emissions. We have also facilitated a water industry task and finish project to understand and quantify the GHG emissions related to chemicals use.

An example of working with our supply chain is our Innovation Lab, which is an annual 14-week programme that provides successful applicants opportunities to test their solutions to our business challenges. The programme is designed to 'look for ideas where others aren't looking' – in other sectors, other countries and with suppliers that are often small, start-up businesses, just starting on their idea development or business growth journey. Our most recent programme included teams developing technology to capture methane and testing sustainable concrete incorporating graphene.

A further example of evolving our practice and delivering outcomes in partnership is our procurement for AMP8 programme partners. All the tenders have included assessment of suppliers' measurement, management and reduction of GHG emissions and have favoured those with a robust and science-based approach.

Read more about how we are using innovation to tackle the sustainability challenges, at unitedutilities.com/corporate/about-us/innovation





Greener: climate

Our net zero transition plan continued

Transition plan, policies and principles

Our transition plan is ambitious and adaptive, aiming to achieve net zero (as defined by the SBTi Net-Zero Standard) across all three emissions scopes by 2050. We have already substantially reduced our GHG emissions since 2006 through energy efficiency initiatives and our move to use renewable electricity either generated on-site or purchased with energy attribute certificates. The next priority is to further reduce absolute emissions through cost-effective and technically feasible activities that minimise our use of GHG intensive energy and materials. Subsequent activities will enable future reductions by working with our supply chain and other partners to make the most of emerging markets, cultivate sustainable practice and to foster innovation to address technological gaps.

We will go beyond emissions reductions and enable, encourage and reward interventions that protect and enhance the natural environment, while promoting the value of wider ecosystem services across our sphere of influence. This will include promoting sustainable use of natural resources, and increased application of the waste hierarchy and circular economy principles in our operational activities and infrastructure programmes.

In spite of our best intentions, it will not be possible to eliminate emissions from the biological treatment of wastewater. To compensate for this we are implementing programmes that will remove and store carbon dioxide from the atmosphere through peatland restoration and woodland creation. United Utilities intends to use the carbon units issued to inset against our residual GHG emissions. Units will be retired from the UK Land Registry

and reported in the energy and carbon report within our annual report for the relevant financial year. We may purchase additional carbon credits as we approach 2050 to offset residual emissions and achieve net zero.

As a regulated service provider and infrastructure operator, there are risks to the success of our transition plan that are outside of control. Our ability and approach to net zero is ultimately governed by national policy frameworks and legislative duties, such as the new Environment Act, that determine both the emissions growth pressures we need to counteract and the level of investment we can allocate to emissions reductions. Our transition plan, therefore, also includes engagement activities with regulators and government to inform effective policy that fully values GHG emissions to support sustainable development in the round.

Scope 1 – Decarbonising activities we own or control

Wastewater and sludge processes cause approximately 70 per cent of our scope 1 emissions as the gases released, nitrous oxide (N₂O) and methane (CH₄), have much greater global warming potentials than carbon dioxide (CO₂). Our process emissions are currently estimated as a direct function of the population whose sewage we treat. This means that, even if we achieve a 100 per cent green fleet and eradicate all fossil fuel use, along with the global water industry, we still have the gigantic challenge of process emissions to tackle.

Scope 2 – Decarbonising electricity and heat purchased

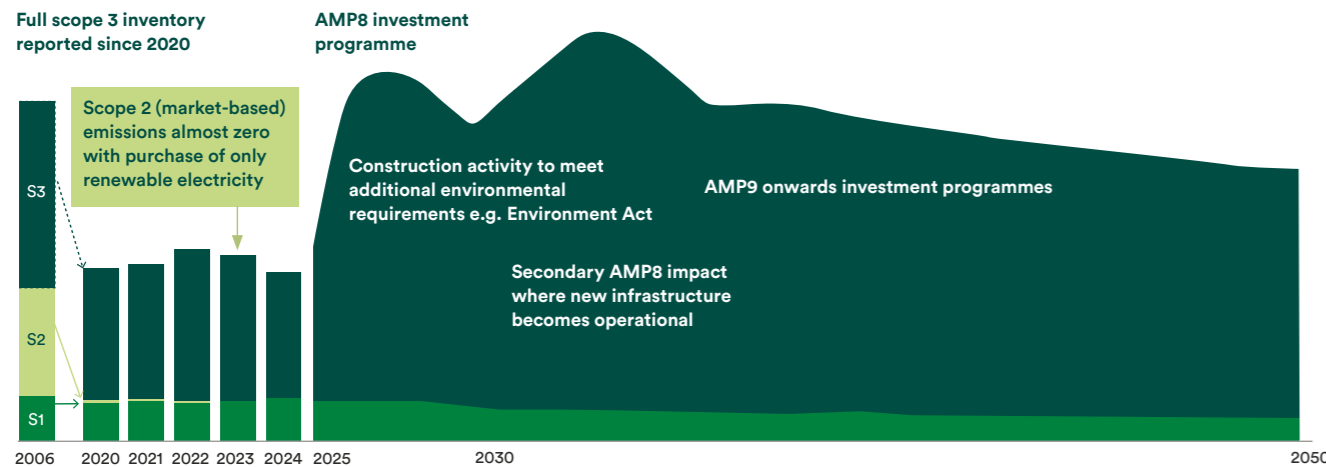
Our scope 2 emissions have reduced since we began to measure them in 2005/06 from 360 ktCO₂e to 261 ktCO₂e (location-based) and almost zero (market-based). This is a combination of the decarbonisation of the UK grid, restraining our energy use in the face of substantial growth pressures and our policy to buy REGO backed renewable electricity. In the medium term we intend to substantially increase our self generation capability to mitigate risk of increased REGO prices and build energy resilience by using our land for renewables and other clean technologies.

Scope 3 – Contributing to an economy-wide transition

Our largest source of scope 3 emissions are from construction and network maintenance activities. This means if our infrastructure development activity increases, for instance as a result of a prescribed environmental programme as is expected for AMPs 8 and 9, then our emissions will also substantially increase. We aim to mitigate this by the use of nature-based solutions and low-carbon material replacements. This contributes to the technological and a market readiness needed to embed and accelerate a transition to a low GHG emissions and climate resilient economy.

Our emissions challenge – growth from environmental obligations, population and climate change

Our total emissions have reduced over the last three years but our long-term emissions forecast in the October 2023 business plan shows the scale of our emissions challenge ahead. We anticipate significant growth from the investments required to address population increases, to adapt our assets and infrastructure for climate change as well as additional legal and regulatory requirements to protect the water environment.



Action plan

Reduce

consumption by careful use of resources.

Short term including recent progress

- Colleague campaign 'Use Less, Save More'
- Achieved ambitious targets for percentage of waste to beneficial reuse

Medium term up to 2030

- Optimise wastewater processes for GHG
- Sensitive delivery of environment improvement programmes

Long term to 2050 and beyond

- Identify and implement further efficiency opportunities
- Reduce use of carbon intensive materials and techniques

Replace

processes and resources with more sustainable alternatives.

- ◆ Renewable electricity sourcing
- Substantial renewable energy generation capacity and capability
- 60%+ sludge processing by lower GHG advanced digestion
- Electric vehicle infrastructure

- Grow further renewables capabilities and capacity
- Bioresources planning and investment to increase sludge processing capacity
- ◆ Electric vehicles rollout and trials for HGVs

- Eradicate use of fossil fuels, e.g. use hydrogen to fuel HGVs
- Nutrient recovery initiatives
- Continual stretch for sustainability informed by latest innovations

Remove

GHGs from the atmosphere.

- Woodland creation – planning and first schemes planted and registered
- Peatland restoration – schemes started

- ◆ 550ha woodland creation
- ◆ 1000ha peatland restoration

- Ongoing benefits of restored peatland
- Benefits from growth of new woodlands
- Carbon capture, use and storage

Collaborate

to tackle emissions in the supply chain.

- Led water industry on task and finish group on chemicals and GHGs
- Climate-related criteria in AMP8 delivery partner selection
- ◆ Encourage capital delivery partners to set SBTs

- Influence national approach to water environment improvements
- Sustainability performance indicators for suppliers
- Quantify more scope 3 emissions using product and activity data

- Collaborate to decarbonise our infrastructure programmes and wider supply chain
- Drive standards reform to enable use of low emission materials and techniques
- Offset residual emissions

Innovate

to address current technological or market gaps.

- Carbon categories in United Utilities Innovation Labs
- CEO Challenge improvement projects on energy and carbon
- Identification of future research and innovation needs
- Support regional transition via membership of Net Zero North West

- Explore low-carbon capital delivery options, e.g. nature-based solutions and low-carbon concrete
- Process emissions monitoring
- Nutrient recovery research
- Research to support net zero treatment works and communities

- Transformation in water and wastewater processing towards net zero treatment works
- Application of circular economy principles across the business
- Utilise emerging Environment Attribute Certificates schemes

◆ Actions that directly link to our six carbon pledges or near-term science-based targets. For current progress on pledges see page 74.

Our route to net zero – adopting a science-based approach

The graph below shows how we are planning for emissions growth to be managed using the five themes of our transition plan. The depth of each layer relates to the GHG emissions that might be avoided by interventions such as those outlined above. Having already taken the most commercially attractive options costs, complexity and uncertainty will increase in the medium to long term, hopefully mitigated by advances achieved through collaboration and innovation.

