# Climate change

**Strategic priorities related to climate**

Create a greener future

**Material themes related to climate**

6 Climate change adaptation

15 Climate change mitigation

## Strategy

**TCFD disclosures**

a. Our strategic assessments and planning include the forecasted impacts at three time horizons and under multiple climate change scenarios.

b. The risks with the most material impact on our organisation are those associated with the security of water supplies and increased volumes and intensity of rain to drain.

c. We are prepared for the immediate challenges and our BIG North West upgrade will improve our resilience across of a range of climate scenarios at county, regional and national levels.

### Planning horizons for climate-related risks

Climate change in the North West of England will cause hotter, drier summers, more extreme temperature and storm events, and changes in seasonality such as milder, wetter winters. As a business, we plan across three broad time horizons (see page 13) to ensure long-term resilience and sustainability. For climate risks and opportunities, we use the same horizons as other business planning for short term (one year) and long term (out to 2100); however, for the medium term, we use 2050 to align with the Met Office UKCP18 mid-century climate change projections.

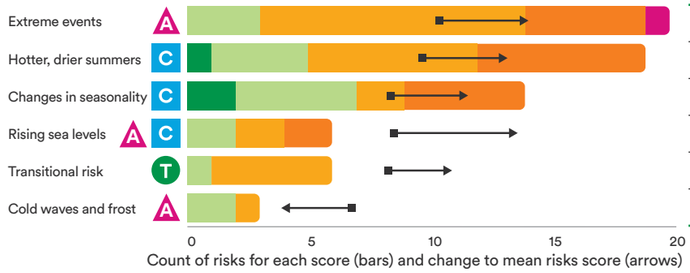
Short-term climate risks – such as increasingly frequent high-volume rainfall and distortions in seasonal weather patterns – are already affecting our operations and worsening existing material issues such as sewer and asset flooding, and asset deterioration. Some infrastructure assets, such as pipes and aqueducts, have long lifespans so, to match this, our long-term planning horizon extends out to 2100.

Our climate-related risk assessment uses the latest climate science and both regional- and county-specific approaches. 68 risks were identified and grouped by causal factor. We evaluated the likelihood and consequence of each risk out of five. The risk score is the product of these ratings with a maximum possible score of 25. Each risk was scored for each of the five counties and three planning horizons with the long term quantified in both benign (2°C) and adverse (4°C) climate scenarios. Details of this approach and the outputs can be found in Appendix E of our 2024 adaptation progress report.

The chart below summarises the risk profile by causal factor after our 2026 review. The 'Extreme events' category includes risks related to extreme rainfall, wet and windy storms, and wider ranges of weather, and has both the most risks and the highest risk scores.

### Climate-related risks categorised by causal factor

Bar colours indicate the maximum risk score across the five county-specific assessments. Arrows show how the regional mean risk scores change between the short and the long term (adverse scenario).




| | Short term | Medium term | Long term 2100 | |
|---|---|---|---|---|
| | 2026 | 2050 | Benign | Adverse |
| Extreme events | 10.1 | 10.25 | 10.25 | 13.8 |
| Hotter, drier summers | 9.3 | 9.47 | 9.47 | 12.84 |
| Changes in seasonality | 8.1 | 8.36 | 8.50 | 11.36 |
| Rising sea levels | 8.3 | 10.17 | 10.17 | 13.50 |
| Transitional risk | 8.0 | 8.00 | 8.00 | 10.83 |
| Cold waves and frost | 6.7 | 6.67 | 6.67 | 3.67 |

**Key:**

**TCFD risk categories**

A Acute physical risks

C Chronic physical risk

T Transitional risks

Max risk score (1 to 25) and risk score rating (very low to very high)

1 2 3 Very low | 4 5 6 Low | 8 9 10 Medium | 12 15 16 High | 20 25 Very high

**Mean score**

Short term → Long term



The majority of risks are physical. These physical risks pose a material risk of destruction or disruption of our assets and systems. They include both acute risks, such as shocks from severe weather, and chronic risks. We are also exposed to some transitional risks associated with the move to a low-carbon economy, including policy, legal, technological, market and reputational risks.

The following four risks have a very high risk score (20 or 25) for at least one county by 2100:

1. Extreme events where intense rainfall overwhelms the capacity of the drainage system and leads to flooding.
2. Extreme events where the volume of rain is beyond the capacity and asset design for the drainage network. Where combined sewer overflows are used to prevent sewer flooding of properties and businesses there is the potential for environmental pollution.
3. Lower average summer rainfall, reducing water resource availability and necessitating greater use of supply restrictions and potential failures of the water service.
4. Changes in seasonal weather patterns, promoting extended growing seasons, which increases the likelihood and potential consequences of algal blooms.

### How geography affects our climate-related risks

Operating in the North West presents distinct challenges compared with the rest of the UK. Our region experiences some of the highest levels of rainfall in England and has a higher proportion of older and, therefore, combined sewers. These pressures on our wastewater network and treatment assets elevate the likelihood of sewer flooding and storm overflow activations during periods of intense rainfall.

Around 95% of the region's water supply comes from surface water rather than groundwater. This strong dependence on surface water means water availability is closely linked to recent rainfall and makes the region more vulnerable to prolonged dry and hot periods.

Sub-regional geography and demographics also influence the challenges of climate change and we found that climate-related risks scores can vary markedly between the five counties. See the chart at the bottom of this page.

**Greater Manchester** faces elevated flood risk due to its bowl-shaped topography, combined with 40% higher-than-average urban rainfall, pressures from pollution and a high density of combined sewer overflows.

**Cumbria and Lancashire** are home to key surface water reservoirs that support supplies across the region. Lower average rainfall in these counties would have a greater operational impact because of their central role in our water resource system.

Algal blooms are already being managed in Lancashire and Greater Manchester, resulting in increased treatment costs to reduce the impacts on the acceptability of water with customers. While Cumbria has not experienced widespread impacts to date due to the high proportion of raw water supplied from the county, more algal blooms in the future could have significant impact.

The differences between counties supports the need for targeted, place-based resilience strategies to address local challenges.

### Impact of climate-related risks on strategy and financial planning

The last 12 months have seen extreme contrasts for the weather in the North West of England. There were severely dry conditions in the spring of 2025, followed by a hot summer with several heatwaves, and autumn was exceptionally wet with above-average rainfall continuing into 2026.

With such challenges, it should be expected that both resilience and climate change adaptation are material and prioritised themes for our organisational strategic and financial planning. We have, therefore, embedded climate considerations into both short-term operational decisions and long-term strategies.

We have established and tested operational response plans to minimise disruption from severe or unpredictable weather. When incidents do occur, our Integrated Control Centre plays a critical role in providing real-time visibility of our water, wastewater and bioprocessing operations. This enables swift, coordinated responses that reduce customer impact and environmental risk.

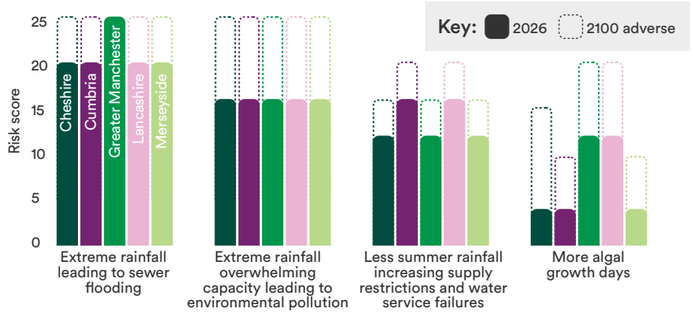
Our longer-term planning is set out in our Water Resources Management Plan (WRMP), Drainage and Wastewater Management Plan (DWMP) and long-term delivery strategy (LTDS). These plans draw on a range of future climate scenarios and take into account environmental, regulatory, technological and societal factors. Sophisticated modelling helps us translate outputs from this scenario analysis into actionable long-term corporate and financial plans while staying aligned with immediate operational needs.

Through our WRMP, we will deliver enhanced drought resilience by 2039, targeting resilience to a one-in-500-year event. Key commitments include halving leakage (from a 2017/18 baseline) and improving water efficiency to 110 litres per person per day by 2050, while reducing abstraction from sensitive environments and progressing new strategic resource options.

Our DWMP sets out how we will respond to population growth, urbanisation and climate pressures by improving environmental protection and customer service. This includes delivering our storm overflow reduction plan for 2050, expanding stormwater capacity, upgrading treatment processes, and increasing the use of nature-based solutions to manage rainfall.

Our LTDS integrates these plans with our asset management approach, creating an adaptive long-term pathway certified to ISO 55001:2014. Scenario analysis means we have been able to prioritise investment where the evidence shows material climate impacts, while maintaining flexibility where uncertainties remain. This ensures our financial plans reflect a low-regrets approach with clear core pathways and optional routes should climate science, legislation or customer expectations evolve.

### Risk scores for the top four climate risks by county




**Climate adaptation progress report**

▶ Read more details about the **impacts of climate change, and our strategies and tactics to address the climate risks,** in our adaptation progress report at **unitedutilities.com/corporate/responsibility/environment/climate-change**

# How we respond to material themes: climate change

## Building resilience to a changing climate

Climate change, and the shifting weather patterns that come with it, has the potential to significantly influence our operations, the services we deliver, and the wider environment we depend on. This connection is already clear as five of our top ten operational risks are highly sensitive to climate change, even under a 'benign' scenario where global temperature rise is limited to below 2°C by 2100. Because of this direct link, all of our core strategies are shaped by both the risks and the opportunities that climate change presents.

To prepare for the future, we assess our resilience under three Representative Concentration Pathway (RCP) climate scenarios:

- **No change**
- **Benign** (RCP 2.6, ~1.6°C rise by 2081–2100)
- **Adverse** (RCP 8.5, ~4.3°C rise)

We conclude that our potential to adapt is strong. This comes from our board and leadership being fully committed to climate adaptation, and from consistently using a systems-based approach that considers resilience across all areas – operational, corporate, and financial. Our approach also recognises that resilience is not just about our own assets and we look carefully at interdependencies and cascade failure risks – how failures in connected services or infrastructure could affect us. To better understand these risks we have brought together employees, infrastructure providers, local authorities, and government stakeholders in a resilience community of practice.

One of the biggest emerging challenges is **compound risks**, where several climate-related impacts occur close together in time or location. To understand this and prepare, we stress test our plans using scenarios that combine actual examples of extreme weather. For example, we examine how our systems would cope with two consecutive hot, dry summers like those in 2020 and 2021, followed by an exceptionally dry winter such as the one in 1984. We also look for compound benefits, where a single action delivers multiple positive outcomes. Sustainable drainage systems (SuDS) are a good example of this. They reduce runoff, free up capacity in wastewater treatment, and provide opportunities for wider social and environmental improvements in local communities.

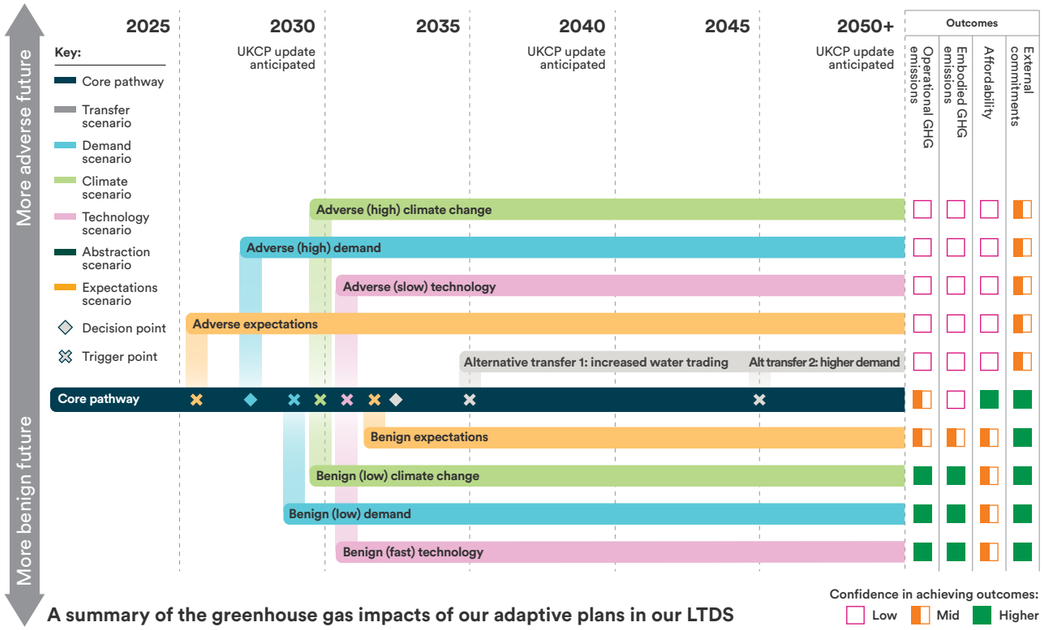
Alongside physical risks, we assess how implementing our water, wastewater and bioresources plans will affect our greenhouse gas (GHG) emissions. We have prioritised water efficiency to meet the needs of a growing population while protecting water sources and rivers over the long term, however, this growth brings significant increases in embodied and operational emissions. This means to stay on track for net zero by 2050, we will need:

- transformational innovation;
- more investment to cut GHG emissions; and
- a full and fair valuation of GHG impacts across national policy frameworks.

### Comparing the GHG emissions impact of various long-term delivery strategy (LTDS) pathways

Our adaptive long-term plans for water, wastewater and bioresources each include one core pathway and several alternative pathways. Alternative pathways diverge at defined decision or trigger points where different investment choices would be made, depending on how future conditions evolve.

Adverse scenarios require additional investment to meet higher service demands – such as those driven by a larger population, tighter environmental standards or more intense peak rainfall. The associated increase in construction activity or chemical use would make delivering our transition plan more challenging and potentially unaffordable. Conversely, under more favourable (benign) scenarios, lower service pressures would allow us to meet outcomes with fewer emissions-intensive interventions, supporting more efficient and cost-effective progress towards our transition plan.




**A summary of the greenhouse gas impacts of our adaptive plans in our LTDS**



# Net zero transition plan

Our transition plan sets out how we will support and prepare for a rapid global shift to a low-emission economy, targeting net zero across all three emissions scopes by 2050 in line with the SBTi Net-Zero Standard.

Our plan is built on our established climate change mitigation strategy that guides our priorities and implementation approach and exhibits the Transition Plan Taskforce principles of ambition, action and accountability.

## Vision and visibility

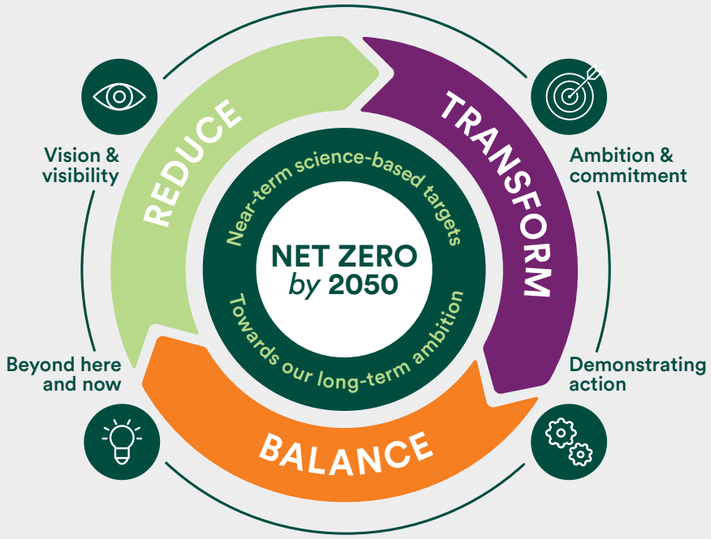
### 'Demonstrating integrity and leadership in carbon reporting and disclosure'

Vision and visibility are the foundations of our approach to climate change mitigation. Our aspiration is to consider the climate in all operational and strategic decision-making. This includes influencing strategy and behaviours by integrating emissions management into remuneration schemes and incorporating carbon pricing into our value-based decision-making approach.

The board, through the ESG committee, provides oversight of the transition plan and management. Leading the executive team our CEO is responsible for designing, developing, delivering and governing a plan that is in line with standards and our strategic ambition. This is primarily done through the director-led steering group, which has the technical skills and competencies to manage the setting of science-based targets and effectively balance the competing environmental and social responsibilities within the financial constraints of a regulated business.

We are committed to inclusive and transparent climate-related disclosures, aiming to be recognised as among the best in the UK. We use CDP as the benchmark of disclosure leadership and are proud to have maintained our position in the leadership level across all three climate, water security and supplier engagement assessments in 2025.

Our long track record of annual GHG emissions reporting has been supported by independent, third-party verification of our GHG inventory by Achilles Group since 2008. We publish data, in line with reporting requirements in the Companies Act 2006, and seek to continually improve our disclosures to meet the emerging guidance and recommendations such as the UK Sustainability Reporting Standards.




## Ambition and commitment

### 'Playing our part to mitigate climate change through setting and meeting ambitious science- based targets'

Our transition plan is ambitious and adaptive and takes into consideration the risk, impacts and dependencies on our resources, our value chain and our stakeholders. Our emissions reduction targets are based on climate science, cover all three emission scopes and are aligned with the 1.5°C ambition of the Paris Agreement. The Science Based Targets initiative (SBTi) is a collaboration that defines and promotes global best practice in science-based target setting. We are proud to have been the first UK water company to have near-term, long-term and net-zero targets approved by the SBTi as compliant with the Corporate Net-Zero Standard. Having achieved two of the four near-term targets and, in the context of our accepted regulatory business plan, we have reviewed all our targets and successfully had them revalidated in March 2026.

As a regulated service provider and infrastructure operator, elements of our transition plan are outside of our control. Our ability and approach to net zero is ultimately determined by national policy frameworks and legislative duties, such as the new Environment Act and economic regulation. Between them, these drive 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 the Government to inform effective policy that fully values GHG emissions to support sustainable development in the round.

## Demonstrating action

### 'Reducing our environmental impacts through the delivery of transformational strategies and culture change'

Our action plan to achieve net zero by 2050 (in line with climate science and the UK Government targets) has three themes aligned to our company purpose and values:

We will:

**Reduce**

what we can control today;

**Transform**

our systems for tomorrow; and

**Balance**

the unavoidable with integrity, to build a resilient, competitive organisation that contributes meaningfully to a sustainable future.

We have a roadmap of intended activities over short-, medium- and long-term horizons and have modelled four delivery scenarios for each workstream. These scenarios cover a business-as-usual position with no additional investment targeted at net zero, our planned investment profile, an accelerated plan investing sooner than the business plan, and a fast-tracked plan to achieve net zero.

We already use on-site generated renewable electricity and our next steps are to reduce the GHG intensity of the energy and materials used. To support further reductions, we are engaging with our value chain and partners to take advantage of emerging markets, promote sustainable practices and drive innovation to close technological gaps.

# How we respond to material themes: climate change

Our first priority is to reduce emissions. We recognise that those from the biological treatment of wastewater cannot be fully eliminated so we are collaborating with others in the water sector to develop and promote more sustainable methods. To offset some of these residual emissions, we have programmes in place to remove and store carbon through peatland restoration and woodland creation. In the longer term, we may opt to purchase carbon credits to further offset residual emissions and achieve net zero.

## Beyond here and now

### ‘Innovating across processes, technology and culture’

Our strategy pillar of ‘beyond here and now’ reflects our intention to influence beyond our current emissions inventory and also beyond existing capabilities. 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. This will include challenging standards, promoting nature-based solutions, and the increased application of circular economy principles with industry peers, our supply chain, and other partners.

We work closely with others across the water sector through the Water UK carbon network and its subgroups, UKWIR’s carbon big question, and on innovation projects. We co-chair the Water UK carbon network, and we have led working groups to develop and improve GHG emissions accounting, to ensure consistency in regulatory reporting and to understand and quantify the GHG emissions related to chemicals used.

Working with other water companies and academic partners, we are leading two Ofwat Innovation Fund projects.

‘Metagenomics: Making Microbes Matter’ will link microbial population data with wastewater treatment performance to better understand nitrous oxide emissions pathways and identify opportunities for emissions reduction.

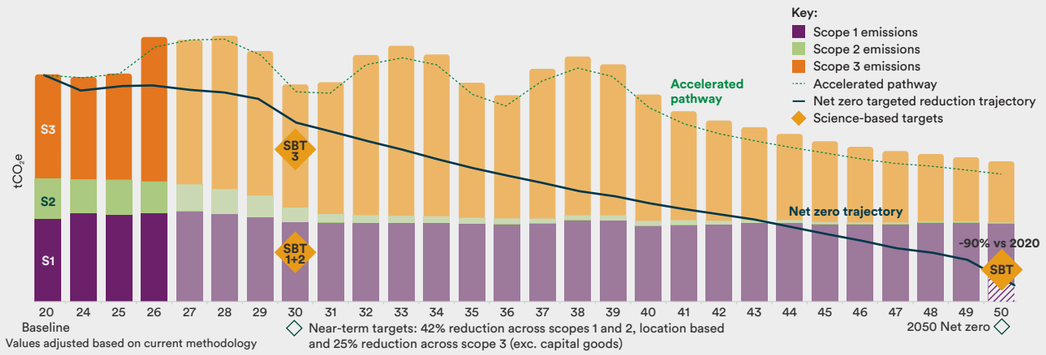
‘Next-Gen Digestion’ will increase biogas generation while reducing volumes of residual biosolids (treated sludge).

We collaborate with our supply chain to innovate. We have trialled natural coagulants for phosphorus removal, we are quantifying the GHG benefits of alternative treatment technologies like FujiClean, and we are developing use cases for lower-carbon concrete such as LowCast.

An example of our evolving commercial practice is in our selection of AMP8 programme partners. All the tenders assessed suppliers’ capability to manage and reduce GHG emissions and we favoured those with a robust and science-based approach.

## Our route to net zero

As we move into the next phase of our net-zero journey, our ambition remains clear: achieving net zero by 2050. We expect continued growth in the services we provide to a rising population, alongside the need to adapt our assets for climate change, and meet evolving legal and regulatory requirements to protect the water environment. The figure below illustrates both our current pathway and an accelerated version of our plans. While the pathway to net zero is not yet fully defined, and there is no universal roadmap for a business of our scale and complexity, we recognise the challenge and are actively developing the technologies, partnerships and operational changes needed to close the gap.




## Action plan

| | | Short term | Medium term up to 2035 | Long term to 2050 and beyond |
|---|---|---|---|---|
| | | Progress in 2025/26 | Plans to deliver proven interventions | Developing solutions for the future |
| Reduce | Tackling emissions at the source – rapid, cost-effective cuts in scopes 1 and 2 | Delivered nine projects through the energy efficiency programme, saving 0.9 GWh of electricity and avoiding 221 $tCO_2e$ pa | Build on ESOS Phase 3 submission to develop our energy management capability supported by the recruitment of net zero engineers | Recovery of phosphorus, ammonia and cellulose to reduce the load on existing assets and support a circular economy |
| | | 200 new electric vans added to our fleet, and installation of 68 EV charge points across our sites | Transition our van fleet from diesel to electric vehicles where practical and continue trialling electric HGVs | Digital tools to improve route optimisation and incentivise and encourage good driver behaviour to improve fuel usage |
| | | 1.16m litres of HVO deployed for use in generators and 32,625 MWh of biogas used in boilers | Increase use of renewable fuels like biogas and HVO in our equipment and fleet | Low-carbon fuels for HGV fleet and equipment including electricity, biomethane and hydrogen, as viable options come to market |
| | | 164 GWh of renewable electricity generated, 19% of electricity used | Expand renewable energy use enabled by the recent development of a commercial framework for behind-the-meter renewable PPAs | Maximise biogas yield from sludge through high-temp side-stream treatment, digesters in series and new AAD treatment hubs |
| Transform | Redesigning systems for a low-carbon future, targeting hard-to-abate emissions | Nitrous oxide monitoring project commenced, with mobilisation activities initiated across ten of the planned eighteen sites representing 34% coverage | Liquid and gas-phase nitrous oxide monitoring and mitigation, enhanced leak detection for methane; low-nitrous oxide and low-methane wastewater and sludge treatment technologies such as MBBR and AAD | Advance lower-carbon operations through predictive modelling and next-generation monitoring technologies; enable selection of specific microbes to improve $N_2O$ emissions through microbial infrastructure mapping |
| | | LowCast (cement free pre-cast concrete) demonstration project for our better rivers programme delivered 64% carbon saving vs. standard design | Deliver carbon benefits through Project Blueprint by expanding the catalogue of carbon-assessed standardised products | Deploy low-carbon materials and emerging construction techniques, such as cement alternatives and 3D concrete printing |
| | | Delivered a cloud platform for sharing carbon project-level data (MOATA) – providing the tools to measure, monitor and reduce emissions for capital programmes | Embed whole-life carbon decision-making in capital delivery projects and programmes | Expand nature-based treatment solutions such as swales, reed beds and SuDS to transition away from high-carbon engineered systems |
| Balance | Managing what is left with integrity, and partnering on what is beyond our control | 1,245 hectares of peatland restored and 142 hectares of woodland created in the past 12 months | Maximise the value of our land for biodiversity and carbon through peatland restoration and woodland creation | Harness waste heat from the sewer network as a new source of low-carbon energy |
| | | Completed an award-winning LOOP demonstration project – complete carbon capture for the water industry and fully sustainable hydrogen production | Increase production of grid-quality biomethane from biogas to displace fossil natural gas and decarbonise the UK grid | Upscale engineered carbon capture and storage (i.e. hydrogen and graphene from biogas) |
| | | Initiated structured carbon engagement with key suppliers that account for 34% of our scope 3 emissions from goods and services | Extend partner and supply chain engagement to drive low-carbon solutions | Introduce commercial frameworks that incentivise suppliers to innovate and reduce embodied and operational carbon |
| | | Installed nine additional FujiClean systems – compact biological treatment providing chemical-free phosphate removal | Reduce the embodied carbon of our chemical use by optimising dosing and transitioning to greener alternatives | Extraction of biopolymers from sludge for use as coagulants in the water sector and AI automation for polymer dosing |

**Reduce**

The Reduce theme focuses on improving the way we use and generate electricity and accelerating the shift to low-carbon vehicles and fuels. Targeted energy-efficiency projects, increased on-site renewable generation, and the continued roll-out of electric vehicles and low-carbon fuels are delivering reliable, low-regret carbon reductions while potentially lowering operating costs and strengthening resilience.

Building on this progress, we are piloting next-generation technologies including digital tools that optimise energy use and emerging low-carbon fuels for heavy goods vehicles. These actions are delivering immediate benefits and establishing the foundations for deeper decarbonisation across our sites.

**Transform**

The Transform theme focuses on reshaping how we design, build and operate our assets. We are investing in longer-term transformation of our assets and processes to address harder-to-abate emissions, particularly those associated with treatment processes and infrastructure projects.

We are improving our understanding of process emissions through enhanced monitoring, modelling and smart controls, enabling targeted interventions without compromising treatment performance. We are also embedding low-carbon principles into our capital delivery programme by integrating whole-life carbon assessments, low-carbon materials, and innovative design approaches across new infrastructure and major upgrades.

**Balance**

The Balance theme focuses on managing emissions that cannot be responsibly eliminated by leveraging high-quality carbon removal solutions. We will prioritise the use of verifiable removal schemes aligned with emerging UK standards. Where appropriate, we may also purchase credible carbon credits to further offset residual emissions and support the achievement of net zero.

In parallel, we are working closely with our supply chain to decarbonise our activities. This includes strengthening data sharing, promoting transparent reporting, and jointly innovating with suppliers to reduce embodied emissions across our value chain.

# How we respond to material themes: climate change

## Governance

**TCFD disclosures**

a. The board and its committees, in particular the ESG committee, consider climate-related matters when reviewing and guiding strategy, approving the business plan and annual budgets and overseeing environmental performance, including science-based targets, our transition plan and adaptation progress.
b. Managing climate-related risks and opportunities is fully integrated in the responsibilities of multiple principal management committees, including the ESG leadership group, climate change mitigation steering group and risk boards.

### Board oversight

Climate-related matters are integrated throughout board and committee activities as climate and the natural environment are central to our purpose of providing great water for a stronger, greener and healthier North West. The board has overall responsibility for ensuring climate risks are reflected in policies, strategies and plans. Certain responsibilities such as remuneration and incentives are delegated to board committees to allow deeper scrutiny.

The chart below illustrates how the board and its committees ensure climate-related issues are considered when reviewing and guiding strategy and its implementation. Actions include setting annual budgets and monitoring implementation and performance of our business plans, including our net zero transition plan (see pages 29 to 31).

The ESG committee, supported by the ESG leadership group, oversees all environmental, social and governance matters. Areas of focus this year included how to ensure a responsible and resilient value chain considering the increased scale of the capital programme, impact of the changing political and meteorological climates on ESG matters and company water use. The committee was also provided oversight on the company's progress against its updated Science Based Targets and the refreshed net zero transition plan.

The audit committee considers climate as part of its oversight of internal controls and risk management, including through oversight of reporting, audit and assurance, twice-yearly integrated risk reviews, and periodic climate-related risk reviews.

The remuneration committee continues to incentivise carbon performance primarily through the long-term performance measures.

The financial statements also describe how climate change affects group assets and liabilities (see within the accounting policy notes to the financial statements on page 198).

### Management role

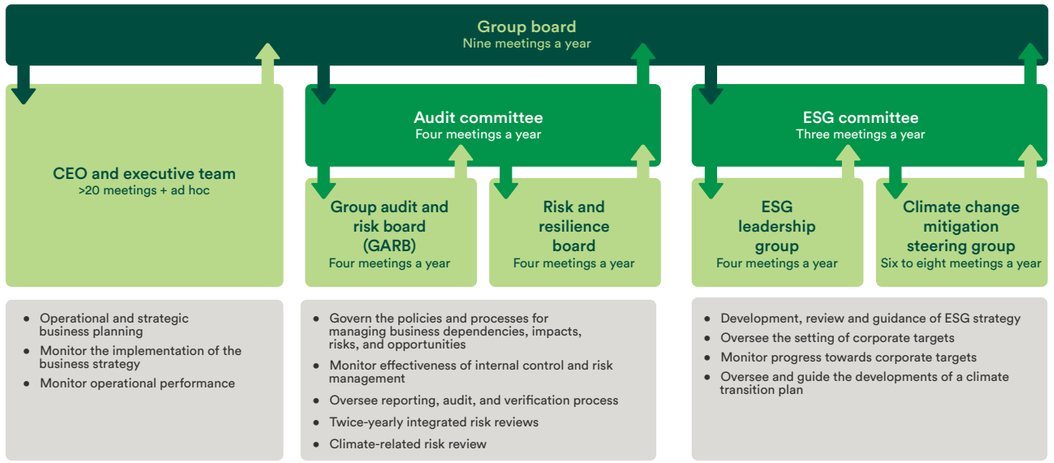
Given the links between weather, ecosystem health and water services, climate change poses both strategic and operational challenges. The CEO holds the highest management level responsibility for climate matters and connects the board with the executive team. The executive team, through various groups and committees, manages all climate-related dependencies, impacts, risks, and opportunities, ensuring appropriate financial resources and skills are in place to deliver our business plans. Its key responsibility is to balance competing operational and strategic priorities related to compliance, commitments and costs.

The CEO and executive team meet to discuss day-to-day matters and separately to consider strategic issues. Monthly reports, collated by the management team, update the board on operational and financial performance, with board direction cascaded back to the management team or via a relevant management committee.

This year, a water-demand function was introduced into the organisation with the purpose of developing a company water-use strategy to understand usage and improve water, energy and carbon efficiency across our sites.

A process that demonstrates the management's key role in assessing and managing climate-related risks is the twice-yearly integrated risk review (IRR). Coordination of this process is the responsibility of the corporate risk team, overseen by the group audit and risk board, which, in turn, reports to the audit committee. The IRR considers all the risks in the corporate risks profile, including those sensitive to climate change (see page 34), updates individual risks where necessary and presents a view of the latest position in board reports.

▶ Read more about **our committees, including their ESG skills,** on page 108 and 117




## Risk management

**TCFD disclosures**

a. We have two processes to identify and assess the additional threats and variability from climate change.
b. We manage both physical and transitional climate-related risks in our corporate business risk profile. Five of our ten most significant operational risks are sensitive to climate change (see page 34).
c. Climate-related risk management is fully integrated in our overall risk management system. Climate change adaptation and mitigation are material themes (see page 25) and extreme weather/climate change is noted as a common causal theme of event-based risks.

### Risk identification

We have a robust framework for the identification, assessment and mitigation of risks that threaten the strategic priorities that underpin our purpose and this is described on page 34. As our services are closely linked to the natural environment, climate change is both a direct cause of risk to the business and a compounding factor to other risks with other causes. To acknowledge this, we have two processes to identify and assess the risks of climate change. One is a process to assess the climate sensitivity of business risks and the other identifies direct climate-related risks.

Both processes use a range of tools – including PESTLE analysis, specialist climate models and structured risk reviews – to identify and evaluate physical risks affecting our assets, operations and resources, and transition risks arising from evolving low-carbon policies, regulations and legislation. The most recent assessments used the latest available climate change projections from the Met Office CP18 and evaluated for two scenarios:

- **Benign scenario:** RCP 2.6, representing ~1.6°C global warming by 2081 to 2100.
- **Adverse scenario:** RCP 8.5, representing ~4.3°C global warming over the same timeframe.

### Climate sensitivity of business risks

Since recognising climate change as a material issue in 2020, we periodically conduct special reviews of our complete business risk profile to understand how climate change and the transition to a low-carbon economy might influence the frequency or severity of risk events.

This work gauges each risk's sensitivity to climate change by quantifying the potential change in likelihood and impact for a time horizon. For example, a weather event that currently occurs once every five years but climate projections predict by 2050 will happen twice every five years. The outputs were translated into financial exposure values (£) and non-financial risk categories. These were assessed over a 40-year horizon to capture the likelihood of repeat events and interdependencies with demographic and environmental change. A summary was presented to the board in February 2025 and is shown on page 34.

### Risks directly related to climate change

For our 2024 adaptation progress report, we identified and analysed 68 risks of climate change. These were grouped by six causal factors: extreme events, hotter, drier summers, changes in seasonality, rising sea levels, cold waves and frost, and transition risks. These risks are summarised on page 26 and collectively represent our resilience to the physical impacts of climate change and the transition to a low-emission economy. More detail, including county-level impacts of each risk, is provided in appendix E of the adaptation progress report.

### Managing climate-related risks

Our special reports on climate risk and the adaptation reporting have strengthened the visibility of climate change within our risk processes. The board uses this insight to determine risk appetite and tolerance, applying our group governance, controls and materiality thresholds.

Given the uncertainty around climate change, population growth, technology and societal change, we continue to mature our long-term and adaptive planning capability. By modelling the causes and consequences and quantifying cost, compliance and commitment impacts, we can proactively adapt our strategies to protect performance across areas such as water supply, leakage, sewer flooding and pollution. Our plans for water resources, wastewater and drainage and long-term delivery are the result of testing service resilience against a wide range of plausible and extreme future climates, alongside alternative demand scenarios defined by different demographics, economic trends and patterns of water use.

By understanding likelihood, impact and interdependencies, we have been able to prioritise risks and target interventions that improve climate resilience while maintaining affordability.

### Integration into the risk management framework

Our processes for identifying, assessing and managing climate-related risks are fully embedded in our enterprise risk management framework. Climate resilience, climate adaptation, and net-zero transition are material themes, and climate risks inform financial planning across all time horizons, including valuation approaches for long-lived assets such as property, plant and equipment.

Extreme weather/climate change is recognised as one of the seven common causal themes for event-based risks. Four of our twelve principal risks are materially impacted by climate change, and we also monitor a dedicated corporate risk for potential failure to meet carbon commitments.

Through the ongoing refinement of our understanding of climate uncertainty, we continue to build resilience across our corporate, operational and financial structures. Our adaptive long-term planning approach, combined with our value framework, helps us balance environmental, social and financial outcomes. This includes choosing lower-carbon, nature-based solutions, such as green infrastructure for rainwater management, in place of traditional, engineered assets where appropriate.

### Company processes to identify and assess risks related to climate change

| Identification and assessment process | Number of risks and categorisation | Quantification of each risk | Horizon and climate scenario combinations |
|---|---|---|---|
| Climate sensitivity of event-based business risks | 8 Climate sensitive<br>20 Moderately sensitive<br>81 Not sensitive<br>109 Business risks | **Financial impact:** Cumulative £m impact over 40-year period<br>**Non-financial:** Stakeholder perception on a scale of 1 to 8<br>**Likelihood of event:** Expressed as a percentage 0 to 100% | Short term: Current<br>Medium term 2050: Benign<br>Medium term 2050: Adverse |
| Climate change risks by causal factor | 20 Extreme events<br>19 Hotter, drier summers<br>14 Changes in seasonality<br>6 Rising sea levels<br>6 Cold waves and frost<br>3 Transition risks<br>68 Climate change risks | Risk score for each climate change risk for each county<br>Impact: 5 (5 10 15 20 25); 4 (4 8 12 16 20); 3 (3 6 9 12 15); 2 (2 4 6 8 10); 1 (1 2 3 4 5)<br><5% (1) 0–20% (2) 21–31% (3) 31–50% (4) >50% (5)<br>Likelihood | Short term: Current<br>Medium 2050: Benign<br>Long term 2100: Benign<br>Long term 2100: Adverse |

# How we respond to material themes: climate change

## Business risks categorised as 'sensitive' to climate change

*Five are in the top ten operational business risks.

| Business risk | | Description of climate sensitivity | 2026 risk assessment: Likelihood % | 2026 risk assessment: Financial impact £m[1] | 2026 risk assessment: Non-financial impact[2] | Change by 2050[3]: Benign scenario RCP 2.6 | Change by 2050[3]: Adverse scenario RCP 8.5 |
|---|---|---|---|---|---|---|---|
| Failure of gravity and conventional sewers* | C A | Intense storms can overload the sewers and lead to severe flooding. Climate change will increase the frequency and intensity of storms, and urbanisation makes this worse due to quick runoff from hard surfaces. | | | 4 Medium | ↑↑ | ↑↑↑ |
| Recycling of biosolids* | C | Water logging resulting from more persistent rainfall will limit options for recycling biosolids to land for a greater part of the year. Uncovered sludge stores and stockpiles will be more vulnerable in persistent wet, winter weather, increasing the risk of environmental pollution from runoff. | | | 5 High | ↑↑ | ↑↑↑ |
| Water availability* | C | Changing seasonal rainfall patterns impact water availability, and warmer temperatures intensify supply challenges in dry periods because of evapo-transpiration. | | | 5 High | ↑↑ | ↑↑↑ |
| Failure to treat wastewater* | A | Extremely heavy rainfall, which is projected to happen more often, can exceed our wastewater treatment works capacity and result in activations of overflows to prevent flooding of assets, streets and homes. | | | 4 Medium | ↑↑ | ↑↑↑ |
| Combined sewer overflows* | C A | Increased rainfall, together with our significantly higher proportion of combined sewers, is highly likely to exceed the capacity of the combined sewers and lead to storm overflow activations. | | | 5 High | ↑↑ | ↑↑↑ |
| Pumping stations and rising mains | C A | More frequent and intense storms will increase the likelihood and impact of failures of pumped wastewater systems leading to sewage discharge into the environment or foul flooding. | | | 4 Medium | ↑↑ | ↑↑ |
| Land management | C | Deterioration in land quality due to climate change has both direct and indirect impacts. Hotter, drier summers lead to fire, flood, subsidence and landslip events, which, in turn, have associated health, safety and environmental impacts. | | | 3 Medium | ↑↑ | ↑↑↑ |
| Failure of above ground water and wastewater assets (flooding) | C | Operational sites can be flooded from sea, river or surface water sources. Climate change is expected to increase the likelihood of flooding due to average winter rainfall being projected to rise, frequent storm events and rising sea levels. | | | 5 High | ↑↑ | ↑↑↑ |

(1) Financial impact is estimated for a 40-year period (2026 to 2066) and the valuation includes impacts on income, capex, opex, interest, tax, penalties, and fines and incorporates inflation. The financial impact of the climate-sensitive risks above ranges between £10 million and £550 million.

(2) Non-financial impact to stakeholder perception on scale of 1 to 8. Stakeholders include customers, regulators, investors, politicians and the media.

(3) Approximate scale of change in risk by 2050 in this climate change scenario. Climate sensitive risks at least double in their likelihood and/or impact.

## Moderate climate sensitive risks

| Business risk | | Description of climate sensitivity |
|---|---|---|
| Carbon commitments | T | Additional obligations to meet climate-related policies, regulation and legislation. |
| Customer experience | C | Climate change will increase frequency of events and incidents when customers suffer an actual or perceived poor experience. |
| Pollution from wastewater assets* | A | More events that exceed hydraulic capacity or strain assets will lead to more frequent pollution incidents. |
| Water efficiency | C | Hotter, drier summers will increase use of water due to changes in customer behaviour. |
| Power loss | A | Greater variation in temperatures and precipitation will cause stresses and strains to the power infrastructure, leading to more asset failures. |
| Water production capacity | C | Hotter, drier summers will increase the likelihood of being unable to meet the required water production capacity. |
| Contamination of raw water sources | A | More frequent events and incidents that impact raw water sources such as flooding, landslides, algal bloom, and faecal and pesticide runoff. |
| Brand management | T | Increased frequency of events and incidents that impact operational performance. |

**Key:**

**C Chronic physical risk**
Changing trends in weather patterns, such as temperatures, sea level and rainfall

**A Acute physical risk**
Severe weather events, such as storms, heat waves and floods

**T Transitional risk**
Associated with move to lower-carbon economy





# Metrics and targets

### TCFD disclosures

a. We track both physical and transitional metrics to assess climate-related risk and opportunities with metrics associated with rainfall being the most critical to our operations.
b. We disclose our GHG emissions and underlying energy use for 2025/26 in our energy and carbon report on pages 72 to 73.
c. Our main climate-related targets are our near-term and long-term science-based targets. Other environmental measures can be found on page 67.

## Metrics to monitor climate risks

We track both physical and transitional metrics to assess climate-related risks and opportunities. We also monitor our environmental key performance indicators (KPIs) to build understanding of our resilience to climate change and use carbon pricing to monetise risk assessments and in business cases.

### Physical metrics

Weather data is the most critical input to our operational planning, as temperatures and rainfall volume, intensity and location directly influence our water resources, wastewater and bioresources functions. Consequently, we analyse recent and historic weather patterns to continually improve our understanding of how different patterns can affect demand and our ability to deliver our services. This insight is combined with Met Office short-term forecasts and climate projections to feed into both immediate and longer-term adaptive planning.

Peak rainfall is a key long-standing physical metric, and climate-change-driven fluctuations to this will cause material impact to our organisation. For Manchester city centre, the one-in-100 year, 24-hour summer rainfall level has already increased from around 93mm in the 1960s to more than 94mm today. By 2100, this is projected to rise further to between 96mm (benign scenario RCP 2.6, <2°C) and 112mm (adverse scenario RCP 8.5, 4°C). These trends highlight the need to accelerate surface water management initiatives to reduce the risk of sewer flooding driven by increasing hydraulic pressures.

### Transitional metrics

Transitional risks arise when actions intended to protect or restore nature and transition to a lower-carbon economy have financial implications. These risks are influenced by changes in policy, regulation, legal precedent, technology and investor expectations. In line with TCFD guidance, we monitor developments across policy and legal, technology, markets and reputation.

Transitional metrics meaningful to United Utilities typically relate to the availability and cost of emissions reduction technologies and of low-emission fuel and energy. We track fossil fuel and low-carbon energy price trends, the maturity of the alternative fuel vehicle market, the share of UK electricity generated from renewable sources and the prices of energy attribute certificates (EAC) like REGOs. As the UK renewable generation increases, the price for EACs tends to decrease but the risks of power issues due to an unstable grid increase.

### Environmental KPIs

Management of our climate-related risks is embedded throughout our processes by putting in place controls, such as those described in the 2024 adaptation progress report. The effectiveness of these controls is seen in our operational performance metrics such as those on page 67, so some environmental measures are also recognised as climate-related metrics. These include leakage reduction, per capita consumption, water service supply and resilience and counts of flooding incidents, storm overflow activations and sewer collapses.

### Internal carbon pricing

Carbon prices can be a useful tool to assign a monetary value to GHG emissions. We use pricing in a variety of ways for different purposes. We apply a shadow price, £ per tonne carbon dioxide equivalent ($tCO_2e$) from UK Government 'Carbon Values for Policy Appraisal' for the relevant year in risk assessments to quantify the total financial impact of failing to meet our carbon commitments, and the potential penalties associated with regulatory performance commitments.

We also apply carbon pricing to assess financial implications of operational and investment decisions. For example, EAC prices serve as an implicit cost of reducing market-based scope 2 emissions. We have used shadow pricing to evaluate business cases for reducing operational emissions by switching to lower-emission fuels, such as HVO, and for designing out construction-related emissions through deployment of no dig techniques, LowCast cement-free concrete in pipes, and air pigging – a sustainable, non-destructive pipeline cleaning method and a world first when deployed in the Vyrnwy Aqueduct Modernisation Programme.

| Validated GHG emissions targets | Near-term targets 2030 | Long-term targets 2050 |
|---|---|---|
| Scopes 1 and 2 Location-based | 42% Reduction in absolute GHG emissions from base year of 2020 | 90% Reduction in absolute GHG emissions from base year of 2020 |
| Scope 3 | 25% Reduction in absolute GHG emissions (excluding category 2) from base year of 2020 | 90% Reduction in absolute GHG emissions from base year of 2020 |


SCIENCE BASED TARGETS | THE NET ZERO STANDARD APPROVED NET-ZERO TARGETS

Neutralise any residual emissions to achieve **NET ZERO** across the value chain

## How we respond to material themes: climate change

### Performance measures and targets

#### Science-based emissions targets

Our ambition and commitments are based on international guidance and climate science. Our near-term science-based targets were verified by the Science Based Targets initiative (SBTi) in July 2021 and our long-term and net-zero targets against the SBTi Net Zero Standard in 2024.

SBTi mandates a target review, at minimum, every five years to ensure consistency with the latest criteria. With this in mind, and having met two of the four near-term targets, we have recently reviewed with the SBTi Net Zero Standard v1.3. The refreshed targets, which you can see on the previous page, were successfully revalidated, and now align with our business plan and use the same location-based scope 2 accounting approach as the new regulatory operational GHG emissions performance commitments.

#### New regulatory targets

Ofwat has introduced two common performance commitments related to operational GHG emissions for water activities and wastewater activities. These measures include scope 1 and 2 emissions in their entirety plus some scope 3 emissions. They are calculated using an Ofwat-defined methodology that is different to annual emission reporting. Depending on annual performance, each performance commitment may result in a penalty or reward of £188 per $tCO_2e$.

United Utilities also has a bespoke performance commitment designed to incentivise reduction of embodied GHG emissions resulting from a subset of our AMP8 WINEP wastewater treatment, non-infrastructure programme. Reducing emissions from these 57 projects by more than 5% from the baseline will result in a reward of £188 for each $tCO_2e$ but increasing will incur a penalty of £94 per $tCO_2e$.

The carbon prices used for the common and bespoke performance commitments are from the UK Government carbon values 'for use in policy appraisal' and are set at 70% and 35% of the 2027 central scenarios.

### Performance and remuneration

Part of being a responsible business and delivering our purpose involves making sure our executive directors and colleagues are remunerated in line with our performance against sustainability metrics rather than purely financial.

Annual bonuses for all colleagues are linked to the company scorecard (see pages 150 and 151) and up to half is based on performance in measures linked to reducing pollution, spills, or other aspects of environmental performance, which are often impacted by weather and climate.

Since 2022, the long-term incentive plans (LTP) for senior leaders and executive directors have included a carbon measure that contributes to the delivery of our net zero transition plan worth 10%. The remuneration committee oversees the setting and vesting of LTPs and, as each one covers three years, three are active at any one time. The targets currently in place are:

- LTP 2023 percentage of energy used from low-carbon sources in year 2025/26
- LTP 2024 reduction of fuel-related GHG emissions measures in year 2026/27
- LTP 2025 percentage of energy used from low-carbon sources in year 2027/28

▶ For this year's **greenhouse gas emissions inventory**, see our **energy and carbon report** on pages 72 to 74

# Task Force on Nature-related Financial Disclosures (TNFD)

Becoming an early adopter of the TNFD improved our ability to assess how nature-related risks could affect water quality, supply resilience and long-term planning, including future investment and financial impacts. Below is a summary of the six general requirements.

### Application of materiality

Page 25 sets out our materiality assessment for disclosures, which includes nature- and climate-related themes. The materiality of nature-related matters reflects the impact on the environment through direct operations and activities across the value chain.

### Scope of disclosures

Our disclosure covers activities and assets, impacted and dependent on by our direct operations, upstream value chain (e.g. materials and construction), and downstream value chain (e.g. water use and customer behaviour).

### Location of nature-related issues

Our direct operations impact and depend on the type and condition of land across the North West, including, but not limited to, more than 56,000 hectares of land that we own.

### Integration with other sustainability-related disclosures

Our annual report has included climate-related financial disclosures (TCFD) since 2020, and nature-related financial disclosures (TNFD) since 2022. We report on nature loss in the World Economic Forum (WEF) risk index. Nature- and water-related matters are also reported on in our annual CDP response.

### Time horizons considered

As set out on page 13, we plan over short-, medium- and long-term horizons:

**Short term** – up to one year

**Medium term** – up to 2035

**Long term** – beyond 2035, typically 25 to 75 years

### Engagement of stakeholders on nature-related issues

We engage with customers to inform our decisions, with environmental issues at the heart of our business planning research. Our five counties model has a key focus on stakeholder management, to strengthen relationships with local community groups. We also rely on our partnerships to deliver multiple benefits, for us, nature and the rest of society.





# Nature pledges

We are strengthening our environmental ambition by evolving our earlier carbon pledges and better rivers pledges to adopt a broader, more integrated set of nature pledges.

**This evolution reflects a growing understanding that climate, water quality, biodiversity, and community wellbeing are interconnected. By taking a whole-ecosystem approach, we can deliver greater environmental resilience, support national policy goals, and contribute meaningfully to nature recovery.**

### Peatland restoration

**7,000 hectares of peatland will be under restoration by 2030.**

We will continue to extend our activities restoring peatland habitats across the North West, building on the 3,000 hectares delivered since 2020 to deliver an additional 4,000 hectares by 2030.

### Woodland creation

**We will plant one million trees by 2030 to create 550 hectares of woodland.**

Continuing work towards our 2020 carbon pledge, we will deliver a programme of both woodland creation and improvement projects valuing actions that have broad sustainability merit enhancing biodiversity as well as climate resilience and mitigation.


### Protecting rivers

**We will protect and enhance 1,800 kilometres of river by 2030.**

Having delivered more than 1,400 kilometres of river enhancement work since 2020, we pledge to protect and enhance a further 400 kilometres by 2030 as we deliver investments to improve our infrastructure and reduce spills.

### Nature recovery

**By 2030, we will exceed the UK Government target and manage at least 30% of our land for nature.**

Our pledge supports the UK goal to protect at least 30% of land and sea for biodiversity by 2030. We will deliver biodiversity net gain across our capital projects and landscape-recovery schemes, creating wildlife-rich places that restore, enhance, and connect habitats across the North West.

As one of the country's largest landowners, it is vital that we understand the role we play in driving nature recovery and demonstrate leadership in protecting and enhancing the natural environment. Our pledges align closely with national and global frameworks, including the Global Biodiversity Framework (GBF), the UN Sustainable Development Goals (SDGs), and UK Environment Improvement Plan (EIP). By restoring ecosystems, reducing pollution and supporting Local Nature Recovery Strategies, we are contributing directly to the UK's long-term environmental targets.

▶ Read more on **how our impacts and dependencies link to SDGs** on pages 14 to 15