# Making information about climate-related risks and opportunities available to our **stakeholders is key to how we operate.**

**That is why, since 2017, we've made disclosures under the recommendations of the Task Force for Climate-Related Financial Disclosures (TCFD), adopting them well ahead of their mandatory introduction.**

**We continue to improve our climate-related disclosures year-on-year as we keep abreast of the latest requirements and best practice. We believe that our approach is consistent with 10 of the 11 TCFD recommendations.**

**The area we will continue to work on for 2023/24 is: Strategy, Part B – Describe the impact of climate-related risks and opportunities on the organisation's businesses, strategy and financial planning. This is specifically around our plans for transitioning to a low-carbon economy and the quantification of future financial impacts.**

## Introduction

Sustainability is at the heart of everything we do – our company purpose is to bring environmental and social prosperity to the region we serve through our commitment to Love Every Drop – and we fundamentally understand the links between the provision of water supply and water recycling services and the environment.

This understanding that the health of the environment both influences, and is impacted by, our operations has driven our successful adoption of a host of climate-related commitments and targets over many years. Our approach is set out throughout this section of the report.

Our Annual Integrated Report complies with the requirement of LR 9.8.6R by including climate-related financial disclosures.

## Highlights

- **Named by the Financial Times and Statista as a 2023 European Climate Leader**
- **£490.8 million green bonds raised in the year, and a total of £2.6 billion of sustainable financing since 2017**
- **On track to achieve net zero operational carbon emissions by 2030**
- **On track to achieve a 70% reduction in capital carbon by 2030**
- **Platinum certified by Achilles Carbon Reduce (formerly CEMARS), signalling 10+ consecutive years of carbon reductions**

## Governance

**Disclose the organisation's governance around climate-related risks and opportunities**

| Page | Further references |
|---|---|
| → page 72 | → See organisational structure on page 72<br>→ See climate-related governance on page 72 to 74 |

## Strategy

**Disclose the actual and potential impacts of climate-related risks and opportunities on the organisation's businesses, strategy, and financial planning where such information is material**

| Page | Further references |
|---|---|
| → page 74 | → See climate-related strategy on page 74<br>Water Resources Management Plan<br>Water Recycling Long-Term Plan<br>Sustainable Finance Impact Report 2023<br>Strategic Direction Statement<br>Climate Change Adaptation Report<br>Net Zero Carbon Routemap<br>→ See CReDo on page 78 |

## Risk management

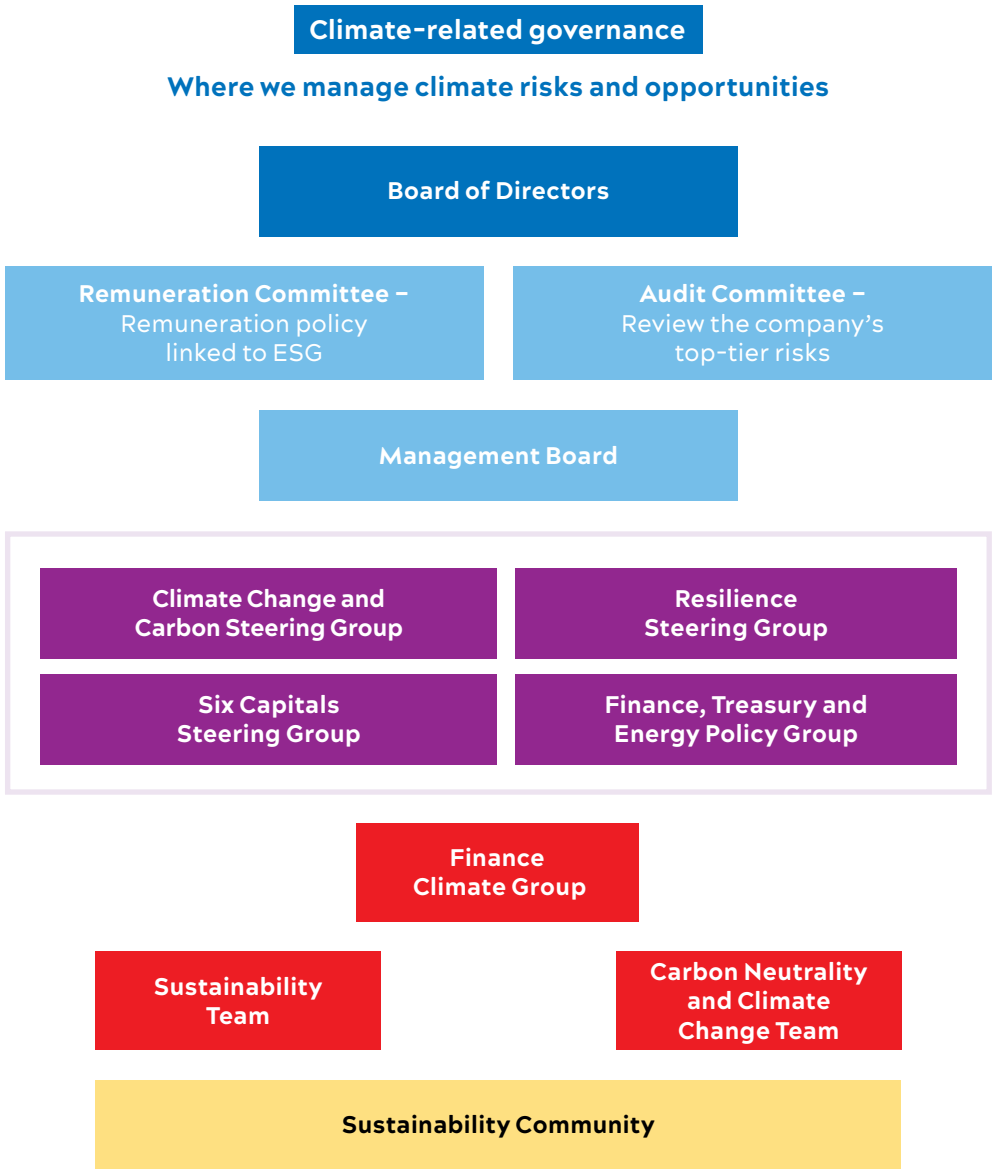
**Disclose how the organisation identifies, assesses and manages climate-related risks**

| Page | Further references |
|---|---|
| → page 80 | → See climate-related risk management on page 80<br>→ See our approach to risk on page 80<br>→ See our principal risks on page 80 |

## Metrics & targets

**Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material**

| Page | Further references |
|---|---|
| → page 80 | → See our climate-related metrics and targets on page 81<br>→ See our greenhouse gas performance on page 81<br>Net Zero Carbon 2030 Routemap<br>Climate Change Adaptation Report |




## Board oversight

The Anglian Water Services (AWS) Board retains overall oversight of climate-related risks and opportunities. In the course of its meetings, the Board discussed climate-related issues where relevant, for example reviewing the draft Water Resources Management Plan and dealing with demand issues during the dry, hot summer. Climate-related risks are included within the company's top-tier risk register and managed through risk management and internal control systems. The Board led the business to be one of the first utilities to raise finance through a Green Bond, in 2017, which the business was able to do due to the governance structure we have in place as an organisation.

In December 2020, Anglian Water published its latest Climate Change Adaptation Report, which was driven and overseen by the Board.

The Board has also driven and supported the commitment for the company to be net zero carbon by 2030; indeed, our Chief Executive Peter Simpson was co-sponsor of the sector-wide Water UK commitment (www.water.org.uk/routemap2030/).

This net zero 2030 commitment covers our Scope 1 and 2 emissions, together with those Scope 3 emissions we're required to report. The Board monitors progress through review of performance commitments, as do the committees noted below.

In addition, we've also committed to reducing our capital carbon emissions – those Scope 3 emissions arising as a consequence of building and maintaining our assets – by 70% against a 2010 baseline by 2030. We're currently developing our strategy to further reduce these emissions post 2030.

Peter Simpson is co-chair of the UK Corporate Leaders Group (CLG UK), part of the University of Cambridge Institute for Sustainability Leadership, while our Senior Independent Non-Executive Director, Dame Polly Courtice, is the Institute's Founding Director and now Emeritus Director. CLG UK provides a strong voice to support UK leadership on climate change and draws together business leaders from a wide range of sectors. Many AWS Board members sit on external bodies such as Business in the Community (BITC), where Peter Simpson chairs the East of England Leadership Team. In May 2022 Peter Simpson was included in the ENDS Report power list of the 100 most influential environmental professionals in the UK.

## The role of the Audit Committee

The Audit Committee plays a key role in monitoring the integrity of the company's financial reporting, reviewing the material financial judgements and assessing the internal control environment. The Committee provides effective oversight of both financial and non-financial disclosures, including climate-related financial disclosures. The Committee receives presentations or papers from senior management, including the Group Risk Manager, regarding the management of key risks, including the overall review of the top-tier risk register, which is formally presented bi-annually. The Committee also approves our annual internal audit plan and can drive areas of focus.

## The role of the Remuneration Committee

The Remuneration Committee plays a key role in ensuring that climate change, and other Environmental, Social and Governance issues are considered at the top of the organisation.

A portion of variable executive remuneration is already aligned to our purpose and selected ESG measures. These measures include our performance as a business in operational and embedded carbon. See page 138 of the Remuneration Report for more detail.

## The role of management

During the year we have appointed our first Group Chief Sustainability Officer role. This new role will challenge our Board, ensuring decisions are guided by our purpose framework.

In general, the Management Board meets three times each month and discusses issues impacting climate change. These meetings are often shaped by the agendas and outcomes of the groups specified below. The Management Board consists of our Chief Executive and Chief Financial Officer along with key decision makers within the organisation (see page 102), who chair many of the groups discussed below.

These groups are made up of key subject matter experts and representatives are drawn from across the business. Some members sit on multiple groups to ensure effective coordination and cooperation.

The members have annual objectives related to climate change. These groups are chaired by a member of the Management Board; through them, targets are set and action plans developed to ensure climate-related risks and carbon are measured, managed and reduced.

The Climate and Carbon Steering Group has been created by combining the Carbon Neutrality Steering Group and the Climate Change Steering Group. By creating a single group all employees responsible for climate change mitigation and adaptation are present. We believe that this group will better deliver insight into and progress against climate change mitigation and adaptation.

This new group meets monthly with time set aside for 'deep dives' into specific themes, such as electric vehicle strategy and process emissions reductions. The group is chaired by a member of the Management Board and two other Management Board members attend ensuring that this group is integrated with the overall strategy of the business. Updates are provided to the Management Board when required, for example our Net Zero Carbon 2030 performance update. Strategy documents are currently being developed in line with our net zero 2030 targets. These will be reviewed by this group to ensure consistency in approach and measurement against plans.

This group will be integral to the development of our climate adaptation investment plans for the next AMP period, as well as the preparation of our next Climate Change Adaptation Report to be submitted to government and progress against our 2030 carbon commitments to the Management and AWS Boards.

The Resilience Steering Group, chaired by the Chief Executive, is responsible for assessing and improving Anglian Water's resilience to shocks and stresses (e.g. acute and chronic risks). Anglian Water has introduced six capitals thinking (see Business model, page 9, and Holding ourselves to account, pages 18 and 19) and integrated them in the governance process for all project appraisals in the organisation, so that all six capitals – natural, financial, social, manufacturing, people and intellectual – are considered when making decisions between available options.

In addition to the groups above, which take the principal role in managing climate-related risk, other groups also play an important role in developing climate-related approaches.

The Six Capitals Steering Group has developed a methodology to assign values to measures across each of the six capitals and their contributing factors, allowing for project appraisals to consider value in the broadest possible sense.

Anglian Water has developed a methodology for capturing and reporting on this data, allowing for reports on performance against the six capitals to be included in a wider purpose dashboard that can/will be reported to the Board on a regular basis.

The Finance, Treasury and Energy Policy Group also plays an important role in managing transition risks and opportunities and is chaired by our Chief Financial Officer. Through this group, options are discussed around raising sustainable finance and potential projects aimed at generating our own energy (such as a recent solar initiative at Grafham, which went on to be approved by the Board). The group's members include the Chief Financial Officer, the Group Treasurer, other Management Board Directors and the Head of Carbon Neutrality.

The Finance Climate Groups' purpose is to create a central team within finance to coordinate, collate and share best practice on financial planning and reporting with regards to sustainability, carbon and climate-change issues. The group has improved the link between finance functions, and those delivering climate solutions around the business, through ensuring appropriate representation across the different areas. The group prioritises the finance sustainability projects to enable finance and the business to achieve its goals. Our Chief Financial Officer is invited to attend once a year to update on progress and prioritisation.

Anglian Water also launched a Sustainability Community to allow Anglian Water employees and alliance partners to engage with sustainability-related activities, ask questions and seek feedback from experts on ideas and initiatives. This community ensures engagement with and input into the climate change, carbon and sustainability agenda is open to all; while we have a structure in place for managing and monitoring climate-related issues we're aware that ideas to address these issues can come from a host of sources. This community aims to harness these ideas and the widespread commitment to sustainability across Anglian Water and our partners, so that the collective knowledge of our whole organisation is maximised.

Following the success of the Sustainability Community, which is open to all our people, in the current year we launched the Sustainability Centre of Excellence. This is a consultative and collaborative forum for those leading on sustainability and purpose through the organisation to identify synergies, maximise impact and increase transparency.

## Climate-related strategy

### Climate-related risks, opportunities and impact

As stated in our latest Adaptation Report (published in 2020), climate change in our region will lead to less rainfall in summer and wetter weather in winter. Drier summers and a limited capacity to store an increase in winter rainfall means that there will be less water available through the year. Climate change is also likely to increase the demand for water among both household and non-household customers in a drier, warmer climate. Left unmanaged, this combination of reducing supply and increasing demand results in one of our most significant climate-related risks. We have been assessing the impact of climate change on water resources since the 1990s. We have seen more extremes in weather conditions over recent years and this is a trend we expect to continue. Our next Climate Adaptation Report is due to be published in 2024.

Our governance structure has allowed us to identify climate-related opportunities in various forums across the organisation. These are centralised and reviewed within the Climate and Carbon Steering Group.

## Climate-related strategy continued

S Short-term
M Medium-term
L Long-term

### Climate-related risks, opportunities and impact

| Key risk | Drivers | Potential impact | Response to risk |
|---|---|---|---|
| **Negative impact on our supply/demand balance and our ability to serve customers**<br>S M L | Hotter, drier summers increasing drought severity and frequency combined with forecast population growth | On customers:<br>• Increase in interruptions to supply<br>• Low water-pressure issues<br>• Drought restrictions more commonplace<br>On business:<br>• Impact on our financial penalty/reward position<br>• Increase in operating costs to deal with periods of drought<br>• Increase in capital investment required | We maintain a 25-year Water Resources Management Plan (WRMP) which quantifies the need and recommends investment to maintain the supply/demand balance to avoid water shortages in the context of drought and population growth (see page 77). This 25-year plan is refreshed every five years to incorporate short, medium and long-term actions, the next is due for publication later in 2023. This approach therefore delivers over a short, medium and long-term timeframe.<br>We have recently completed a study into climate vulnerable mains. This covers mains which are vulnerable to bursts as a consequence of drought induced soil shrinkage. An investment programme will be developed.<br>We are embarking on a study investigating the impact of extreme summer temperatures on our assets to develop resilience strategies. |
| **Negative impact on our customers and the environment caused by failure to cope with impact of increased precipitation**<br>S M L | Increased frequency of periods of heavy rainfall combined with wetter, warmer winters | On customers:<br>• Internal and external sewer flooding and impact on customers' homes<br>• Increase in interruptions to supply<br>On business:<br>• Impact on our financial penalty/reward position as well as environmental penalties<br>• Increase in operating costs to deal with heavy rainfall and associated flooding<br>• Increase in capital investment required | We maintain a 25-year Water Recycling Long-Term Plan (WRLTP) which assesses the risks to our water recycling infrastructure and promotes the use of sustainable and innovative solutions (see page 77). This 25-year plan is refreshed every five years, the next is due for publication later in 2023. This approach delivers over a short, medium and long-term timeframe. |
| **One-off events which impact ability to operate**<br>S M L | Increased severity and frequency of storms | On customers:<br>• Increase in interruptions to supply<br>• Impact on leakage due to freeze-thaw process<br>On business:<br>• Physical damage to assets and infrastructure impacting ability to operate in an area<br>• Increase in operating costs during and after the event<br>• Increase in capital investment following the event | We manage these risks with business continuity and meticulous emergency response planning. We have well-rehearsed policies, plans and procedures to ensure we minimise any risk to customers and the environment. This allows us to react to incidents in the short term while we plan for the medium and longer-term timeframes. |

## Climate-related strategy continued

S Short-term
M Medium-term
L Long-term

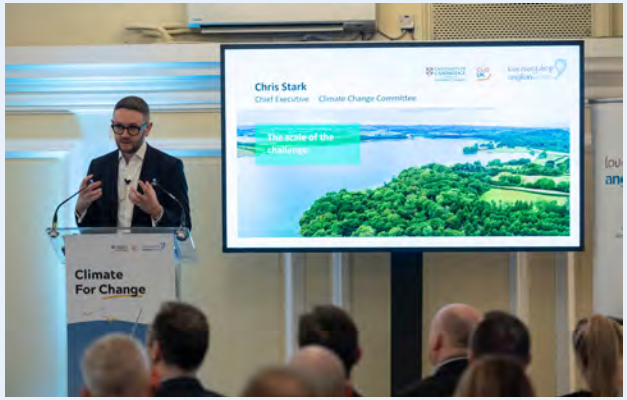
### Climate-related risks, opportunities and impact

| Key opportunities | Drivers | Impact on business | Strategy to realise opportunity |
|---|---|---|---|
| **Energy consumption reduction programme** S M | Increased cost of energy | • Reduced operating costs<br>• Reduction in operational and capital carbon<br>• Reduced energy consumption<br>• Reduced reliance on grid power thus increasing grid resilience | We have a dedicated initiative to identify opportunities to reduce energy, carbon and cost. Funding is made available for this initiative, providing it pays back in five years or fewer. We also consider investments which may pay back over a longer period of time. |
| **Correlation of reducing, carbon reduces cost** S M | Need to reduce carbon footprint and alignment with our net zero targets | • Reduced capital investment required on projects<br>• Reduction in operational and capital carbon | Our strategy is consistent with the international standard for capital carbon management, PAS 2080, with which we assisted BSI in its development. PAS 2080 aims to achieve a systematic process for infrastructure delivery in which carbon management under the direct control of the value chain is the main focus. |
| **Uptake of renewable energy** S M L | The rising cost of grid power and the increasing appetite for renewable power | • Reduced operating costs<br>• Increase in green energy consumption<br>• Reduction in energy required to be imported and opportunities to export | Investment in the optimisation of our combined heat and power (CHP) programme, biomethane programme and solar photovoltaic installations at our sites. |

Our investment periods cover five years and we have therefore used a five-year horizon to define short term. The development of these five-year investment plans is undertaken in the context of a much longer timeframe. For example, the WRMP is a 25-year plan and our net zero carbon commitment published in 2021 is to 2030, therefore, anything between five and 25 years defined medium term. Anything longer than 25 years is defined as long term.

Impacts are variable across the geography of our region and approaches are developed in this context. For example, our Strategic Pipeline Alliance (SPA) Project was developed to transport water from the north of the Anglian Water region where there are Water Resource Zones (WRZ) in surplus, to the south where there are WRZ in deficit, improving water resilience to the whole region.

We also consider customer smart meter penetration and leakage rates as opportunities to drive reduced water consumption.




### Climate for Change event

In February 2023 we brought our value chain together to discuss climate change resilience, climate change adaptation and our journey to net zero carbon. Our 'Climate for Change' event, hosted in collaboration with the Corporate Leaders Group, had over 100 attendees. Chris Stark, Chief Executive of the Committee for Climate Change kicked off the day.

## Climate-related strategy continued

### Financial impact

During the year, climate-related weather events have resulted in a negative financial impact on the business. The Board committed to invest £13.9 million to maintain our industry-leading leakage position as we sought to recover from a number of weather extremes throughout the year. The first six months of the year saw very little rainfall and as a result, we saw exceptionally dry ground conditions. This was then compounded by two freezing cold spells in winter, followed by a rapid rise in temperatures. Rapid freeze-thaw conditions led to ground movements that interfere with our infrastructure.

These weather events also negatively impacted our performance commitments. The overall penalty in the year totalled £22 million, the adverse weather experienced within the year largely contributed to this. See more in our Performance Commitments Dashboard, pages 31 to 38 which discusses our Ofwat targeted performance commitments.

### Organisational resilience and scenario planning

Anglian Water's overall resilience to climate-related risk is addressed in a host of ways, but most specifically through our Water Resources Management Plan (WRMP), Water Recycling Long-Term Plan (WRLTP) and Strategic Direction Statement. The forthcoming Drainage and Waste Water Management Plan, to be published later in 2023, will provide further key strategic input.

We also publish a Climate Change Adaptation Report (CCAR), have developed and published a Net Zero Carbon 2030 Routemap, and have developed robust and long-standing partnerships with our supply chain to address climate resilience and low carbon delivery. For the detailed scenario analysis, refer to the linked documents.

For detailed analysis and conclusion, refer to the long-term viability statement on pages 96 to 99.

### Water Resources Management Plan (WRMP)

In preparing our current 25-year WRMP we used climate-related scenario analysis. The approach is consistent with the Environment Agency's 2017 methodology for 'Estimating impacts of climate change on water supply'. In producing our supply forecast we used the 11 Spatially Coherent Projections (SCPs) in UK Climate Projection 09 (UKCP09) for each high, medium and low scenario. Our next WRMP is due for publication later in 2023.

The results of the climate change scenario analysis identified that two of our 28 Water Resource Zones (WRZ) were particularly vulnerable to climate change, and that there would be a material impact on the supply demand balance in another five WRZs due to climate change. These supply demand impacts were combined with other impacts such as growth to understand the total impact on the supply demand balance in each WRZ. This has helped inform better resilience strategies for the WRZs.

### Water Recycling Long-Term Plan (WRLTP)

As described in our current 25-year WRLTP, climate change scenarios form part of our hydraulic modelling standards for assessing growth risk to service from our water recycling infrastructure.

We used UKCP09 high emission scenarios for 2025, 2045 and 2065 to support the assessment of climate risk in our investment programme, which included up to a 20% increase in rainfall. These time horizons were chosen to allow engineers to align climate change with the design life of the solution. For example, a pumping station may only be viable for 20 years, while a pipeline will typically have a much longer design life.

The WRLTP describes how the inherent uncertainties in planning for growth and climate change necessitated the use of scenario planning. In response, we've taken a risk-based approach to developing an appropriate investment strategy at Anglian Water. We've followed a Bronze, Silver, Gold risk-based process to assess risk of detriment and to prioritise investment for over a thousand catchments and Water Recycling Centres (WRCs), to give us an integrated long-term strategy.

This approach gives an understanding of the level of risk climate change may present and solutions were costed and benefit-assessed at high level, including natural capital assessment of sustainable urban drainage solutions (SuDs). The solution of greatest cost benefit was promoted for investment in the period 2020–2025. These solutions help us deliver against our long-term goals, including the ambitions to make the East of England resilient to the impacts of flooding and to enable sustainable economic and housing growth.

## Climate-related strategy continued

### Addressing climate-related supply challenges

South Essex was one of the Water Resource Zones identified as being at risk of water supply and demand issues, as a result of climate change. Anglian Water has started to build a new network of hundreds of kilometres of vast interconnected pipelines. This huge infrastructure project – our biggest to date – will, by 2025, enable us to transfer water from areas where there is surplus (Lincolnshire) to the South Essex WRZ and other areas where deficits have been identified.

### Strategic Direction Statement

Our Strategic Direction Statement (SDS), first published in 2007 and refreshed in 2017, sets out our long-term goals 'to be a net zero carbon business by 2030' and 'to make the East of England resilient to the risks of drought and flooding'.

Our annual Greenhouse Gas Report charts the decline in intensity factors used to indicate the decarbonisation of our services. Our strategy is described in more detail in the SDS, and our Climate Change Adaptation Report describes how climate change is embedded into everything we do. We're also leading the way in green financing. Since 2017, we have raised £2.6 billion in green financing, since we became the first European utility company to issue a sterling Green Bond in 2017.

The investments made through the Green Bonds issued to date are expected to support a 63% reduction from the company's 2010 capital carbon baseline.

### Engaging with our value chain

Our engagement with our supply chain on climate change was launched back in 2007 when we invited our key partners to HRH The Prince of Wales' first Mayday Summit. Since then, we've worked with our design and construction partners to reduce capital carbon by more than 63%.

In February 2023 we brought our value chain together to discuss climate change resilience, climate change adaptation and our journey to net zero carbon. Our 'Climate for Change' event had over 100 attendees with Chris Stark, Chief Executive of the Committee for Climate Change, kicking off the day with a 'call to arms'. As a result of the event, a number of collaborative workstreams will be taken forward. Collaboration is an enabler to the complexities of adapting to climate change.

An example of value chain collaboration is our Ofwat-funded research project to better understand Whole Life Carbon – that is the carbon associated with constructing, operating, maintaining and the end of life of our assets. Whole Life Carbon will integrate carbon and cost models into a single digital approach, enabling users to consider options to avoid constructing new assets through re-using existing infrastructure

### Partnering to deliver Climate Resilience Demonstrator (CReDo)

We understand that our assets operate in an interrelated infrastructure system. We are reliant on the power network for electricity, the telecoms network for communications and the road system for access. In turn, the power and telecoms network are in some cases reliant on the water network. A failure in one of these elements of the system can lead to cascade failure, where other elements of this linked infrastructure network fail as a consequence. Extreme weather events can cause this failure. In 2021 the Climate Change Committee assessed infrastructure interdependencies as having a low-quality plan and that infrastructure owners were making slower progress than needed to manage risk.

In an effort to better understand these interdependencies in the context of a changing climate, we participated in the ground-breaking Climate Resilience Demonstrator (CReDo) project with a number of organisations including the Centre for Digital Built Britain, the National Digital Twin Programme, the Connected Places Catapult, UK Power Networks and BT.

Showcased at COP26, the project involved asset owners sharing asset data which was then synthesised with geographic information system (GIS) data to understand how assets are linked in a geographic area. A flooding scenario was then run to understand failures within the system.

The CReDo project gave important insight into how interrelated assets fail and how organisations can effectively share data and cooperate to develop holistic climate resilience solutions at an infrastructure system level. Ofwat and Ofgem funding has been secured to develop the next phase of CReDo. We are leading a project to understand the impacts of extreme and prolonged heat on the resilience of our assets which will enable effective planning in adapting to the future.

**Video:** CReDo - Increasing climate resilience through cross-sector data sharing in a connected digital twin

## Climate-related strategy continued

or selecting lower carbon materials. The project has already identified future opportunities to combine carbon and climate resilience. This is just one example out of five that we are leading on, as part of Ofwat's Water Breakthrough Challenge, where we have secured £17.3 million in Ofwat Innovation funding to create solutions to our industry's biggest challenges.

In 2016 we became the first organisation to be verified against PAS 2080, which is the world's first standard for managing carbon in infrastructure. Designed to drive best practice in managing carbon across the supply chain, in 2023 PAS 2080 was revised. We aim to be verified against this revised standard later this year.

### Engaging with our customers

We regularly engage with customers through a variety of channels to seek their views on our approach to addressing climate change. Customer channels include:

- The Customer Engagement Forum (CEF). Set up in 2011, the CEF has an ongoing role in challenging us on how we engage with customers and monitors how we perform on commitments. Its members come from a wide range of backgrounds to represent the interests of household and business customers, communities, the environment and the economy;
- Our online community of 500 customers, whose views we seek weekly on a wide range of topics; and
- Our Customer Board, which comprises a representative selection of members from the online community to provide further guidance and directly feed in customers' views.

Our Business Plan for 2020–2025 saw us engage with circa 500,000 customers; the majority told us they want us to invest in resilience to climate change now, rather than in the future.

We also issue key climate-related plans, including our Drought Plan, Water Resources Management Plan, Climate Change Adaptation Report and Drainage and Waste Water Management Plan, for public consultation, incorporating and reflecting their feedback before plans are formally published.

### Innovating to reduce carbon emissions

We have recently reorganised how we deliver innovation through our business. The Innovation Discovery Team leads much of our research and development work. Reporting to our Chief Engineer, it invests about £2.5 million per year into ground-breaking research and projects. One of the team's current projects is the Ofwat-funded Triple Carbon Reduction project, exploring how to reduce process emissions which, after electricity, is our biggest source of emissions, alongside reducing energy consumption in water recycling and producing hydrogen.

Hydrogen has the potential to result in significant carbon reductions, but there is uncertainty surrounding how this new model may work. This project will increase understanding of how hydrogen could play a role in the future.

### Generating renewable energy

The vast majority of our operational emissions are associated with the electricity used to pump, treat and recycle water. One of the opportunities for reducing our emissions – and our costs – is to generate renewable energy from our sewage sludge, and to generate renewable power on our sites from wind and solar. Not only does generating renewable energy reduce our impact on the environment, it also mitigates the transition risk associated with changes in policy and cost linked to decarbonising the UK's electricity.

In 2004 we had only two sites with combined heat and power engines (CHP) producing less than 8GWh per annum. We now have ten sites producing more than 113GWh per annum. In 2012 we installed our first wind turbines and in 2016 we installed our first solar arrays.

We're now committed to increasing the renewable energy we produce to 40% of our consumption by 2025. See page 81 for our progress this year.

### Energy efficiency

As well as generating our own renewable energy, we're also pursuing other opportunities to reduce our carbon emissions and reduce costs. This includes an energy efficiency 'spend-to-save' programme, designing carbon out of the new assets we build and reducing travel emissions. This programme was launched in 2006 and delivered savings of more than £10 million within four years. We have now embarked on our 20GWh challenge – attempting to generate energy consumption savings across the business.

## Working in partnership

To reduce the climate-related risks we face from drought and flooding, we're partnering with other stakeholders to better manage our limited water and financial resources. For example, we've identified opportunities to enter into funding partnerships to deliver a single cost-effective flooding scheme to protect the assets of multiple stakeholders. Every five years we publish a statutory WRMP and a Drought Plan to set out the investment and interventions required to minimise the risk of a drought. We also prepare investment plans for flooding every five years.

By 2025, we expect our investment and interventions to have reduced the risk of severe restrictions in a 1-in-200-year drought so that it is approaching zero, and to have reached a position where fewer than 10% of our customers are at risk of sewer flooding in a storm (1-in-50-year storm).

## Climate-related risk management

### Identifying and assessing climate-related risks

On pages 89 to 95, we outline our 13 principal risks. Climate change is a consideration in each. Identification of current and emerging climate risks, including risks presented through implementation of change, is undertaken as part of our embedded risk processes. Our process utilises expert judgement, historical data, external data and forward-looking analysis. We use scenarios to inform our future direction. The development of adaptive planning, which is part of our PR24 planning process, will define a number of climate scenarios with alternative and adaptive pathways which can be adopted as the climate changes. Through monitoring of performance against a pre-defined set of decision points, tipping points and thresholds, our adaptive plan becomes dynamic and iterative.

The assessment and management of climate-related risks is consistent with the approach used to manage risk throughout the business. Climate-related risks were identified and assessed during the production of our latest Climate Change Adaptation Report. Climate risks are also identified and managed through the preparation of long-term plans and the delivery of individual investments. We review the current risk level and how our controls provide confidence and assurance around our management of that risk.

### Managing climate-related risks

The management of climate-related risks is consistent with out approach to manage risk throughout the business, more in our Risk section on pages 83 to 95.

In preparing the WRMP, we identified the impact of climate change, and then customers and stakeholders were consulted on our proposals for adaptation. Most respondents shared our view that investment in climate change should not be delayed. Our latest WRMP is currently under review following a similar stakeholder engagement strategy.

In addition, we're undertaking research into customer views of climate change adaptation approaches as part of our PR24 (2025–2030) investment process.

### Integrating climate-related risk into overall risk strategy

Our approach to climate-related risks are fully integrated within our overall risk strategy, as discussed on page 88.

Within this system, we define what constitutes substantial financial and strategic impact to the business. A significant impact at Anglian Water is defined in the risk register as being greater than £25 million, while a major impact is between £10 million and £25 million.

## Climate-related metrics and targets

We've developed a process to assess, manage and mitigate the climate resilience of individual investments. Climate resilience is included within the Six Capitals Framework, which includes both resilience to changing weather patterns as a consequence of climate change and carbon impacts. These carbon impacts are operational and capital.

A monetised cost benefit analysis is also carried out on these investments, using our well-established Risk, Opportunity and Value (ROV) process. Investments are then assessed for climate resilience, operational carbon performance and capital carbon performance through each design gateway as the design iterates.

Anglian Water has previously used an internal price of carbon to see if it could advance carbon reduction. This proved of limited value. We transformed the thinking of the organisation to recognise that reducing carbon does reduce cost.

Setting this expectation alongside ambitious carbon targets (65% capital carbon reduction target by 2025 and 70% by 2030 against a baseline of 2010) and a rigorous process verified to PAS 2080 has proven much more effective.

The recognition that reducing carbon reduces costs is used to drive behaviour change and deliver financial efficiencies throughout the organisation. This is most clearly seen in the delivery of our five year plans, in accordance with PAS 2080.

The data collected on our carbon versus cost saving can be used to estimate an implicit financial value for a tonne of carbon.

The Performance Commitments section, pages 31 to 38, contains a set of metrics and targets we are using to understand progress against climate-related risk. Performance against these metrics is set out annually in our Annual Performance Report. Our Climate Change Adaptation Report also includes discussion on key metrics, of which an updated report will be published in 2024.

## Climate-related metrics and targets continued

### Scope 1, Scope 2 and relevant Scope 3 Greenhouse Gas Emissions (GHG)

**Metrics and targets**

This table meets the requirements of the Streamlined Energy and Carbon Reporting (SECR) regulations.

| | Units | 2021/22 | 2022/23 | Inclusions |
|---|---|---|---|---|
| Energy consumption used to calculate emissions kWh | kWh | 1,047,019,565 | 1,073,538,749 | Electricity, gas, fuels combusted on site (fossil fuels and biogas), transport (company cars, fleet vehicles, personal and hire cars on business use) plus liquid fuels consumed on site |
| SCOPE 1 – Gas and fuel oil consumption | Tonnes $CO_2e$ | 11,936 | 10,541 | Fossil fuel combusted, natural gas and biogas |
| SCOPE 1 – Process and fugitive emissions | Tonnes $CO_2e$ | 81,601 | 85,859 | Water and waste water treatment, biogas |
| SCOPE 1 – Owned transport | Tonnes $CO_2e$ | 20,854 | 21,904 | Fleet vehicles and company cars |
| **SCOPE 1 – Total** | Tonnes $CO_2e$ | 114,390 | 118,304 | |
| SCOPE 2 – Purchased electricity | Tonnes $CO_2e$ | 134,894 | 121,994 | Grid electricity – location-based electric for vehicles |
| **SCOPE 2 – Total** | Tonnes $CO_2e$ | 134,894 | 121,994 | |
| SCOPE 3 – Business travel | Tonnes $CO_2e$ | 306 | 621 | Private cars, public transport |
| SCOPE 3 – Outsourced transport | Tonnes $CO_2e$ | 12,834 | 13,144 | Outsourced tankers |
| SCOPE 3 – Purchased electricity | Tonnes $CO_2e$ | 11,937 | 11,154 | Transmission & distribution |
| SCOPE 3 – Total significant | Tonnes $CO_2e$ | 25,077 | 24,920 | We have not included commuting, capital carbon and emissions from use of water in customers' homes |
| **TOTAL ANNUAL GROSS EMISSIONS** | Tonnes $CO_2e$ | 274,362 | 265,219 | |
| Exported renewables | Tonnes $CO_2e$ | -4,946 | -6,334 | Exported renewables REGO certified |
| Green tariff | Tonnes $CO_2e$ | 0 | 0 | |
| **TOTAL ANNUAL NET EMISSIONS** | Tonnes $CO_2e$ | 269,416 | 258,884 | |
| INTENSITY RATIO – water treated | Kg $CO_2e$ per Ml | 203.73 | 192.48 | |
| INTENSITY RATIO – recycled water | Kg $CO_2e$ per Ml | 425.20 | 409.54 | |
| INTENSITY RATIO – recycled water | Kg $CO_2e$ per Ml | 232.61 | 227.79 | Full flow to treatment |

**Methodology:** Emissions have been calculated using Carbon Accounting Workbook v17 (2023) an industry standard reporting tool. We have followed the 2020 UK Government environmental reporting guidance. We have used the GHG Protocol Corporate Accounting and Reporting standard (revised edition) and emission factors from the UK Government's GHG Conversion Factors for Company Reporting 2023 to calculate the above disclosures. There have been no methodological changes in the way emissions have been calculated in financial year 2022–2023 against 2021–22.

The reporting boundary covers the emissions within the regulated activity of Anglian Water Services Ltd where we have operational control i.e. all Scope 1 emissions, all Scope 2 emissions and Scope 3 emissions of outsourced transport, business travel and transmission and distribution losses.

The numbers reported have been verified by Achilles Carbon Reduce (formerly CEMARS) as being measured, managed and reduced in accordance with ISO 14064-1. This verification process has been followed since 2011.

We aim to be a net zero carbon business by 2030. This is defined as net zero emissions where we have operational control as set out in our Net Zero Carbon Routemap 2030.

## Climate-related metrics and targets continued

Energy consumption has increased slightly in 2022/23 over 2021/22 primarily because of an increased population and subsequent water supplied. This has led to an increase in wastewater treated, which increases our process and fugitive emissions. Emissions from electricity purchased have reduced whilst further emissions reductions have been achieved through increased export of renewables. Consequently, gross emissions have reduced 3.9% in 2022/23 against 2021/22.

### Organisational targets to manage climate-related risks and opportunities

Our key short to medium term climate-related targets are as set out below. We are currently implementing changes to the way we structure and document our position against our net zero commitment to ensure we have the appropriate processes in place to achieve our target. These are in addition to our performance commitments. See more in our Remuneration Report on page 127.

- Be a net zero carbon business by 2030 (emissions where we have operational control and as set out in our Net Zero Carbon 2030 Routemap);
- Deliver a 65% reduction in capital carbon by 2025 against our 2010 baseline;
- Deliver a 70% reduction in capital carbon by 2030 against our 2010 baseline;
- Deliver a 10% reduction in operational carbon by 2025 against a 2020 baseline; and
- Between 2020 and 2025 ensure that a climate change resilience assessment is completed for all relevant investments.

Operational carbon is the carbon emitted as a consequence of the day-to-day operations of our business – energy use, process emissions from the water recycling process, emissions from our vehicle fleet, etc. Capital carbon is the carbon emitted as consequence of the manufacture and installation of assets we construct, for example, our new strategic pipeline or, a new treatment facility. From 2022/23, a proportion of senior leader remuneration is linked to performance against these climate-related targets: 2.5% of senior leaders' bonuses are linked to the achievement of our annual net zero carbon performance target and 2.5% is linked to the achievement of our annual capital carbon performance target.

Our longer-term climate-related targets are as follows:

- Make the East of England resilient to drought and flooding;
- Work with others to achieve a significant improvement in ecological quality across our catchments;
- Enable sustainable economic and housing growth in the UK's fastest-growing region;
- Develop a strategy to further reduce our capital carbon beyond 70% post 2030, with an ambition to be zero carbon well before the national target of 2050; and
- Develop a hydrogen strategy to best understand how we could generate hydrogen, use any oxygen generated from hydrolysis and understand how our HGV fleet could be powered using hydrogen.

We are making progress in these areas. and have below set out the actions underway. Our Water Resources Management Plan (WRMP) and Drainage and Water Management Plan (DWMP), set out our approach to dealing with both drought and flooding over the next 25 years in our region. The plan also covers how we can enable sustainable economic and housing growth in our region whilst protecting the environment.

We are also participating in the Climate Resilience Demonstrator (CReDo) project, where asset data from Anglian Water, UK Power Networks and British Telecom have been synthesised using a digital twin approach to understand how these assets are connected. For a specific area, a flooding scenario has been run to best understand asset failure in the context of an interconnected and interdependent infrastructure network.

This project has demonstrated that the validity of this approach and CReDo is moving forward with two workstreams: increasing the geographical area and asset types within the digital twin and using an extreme prolonged heat scenario to understand asset failure.

Our target is to reduce capital carbon by 70% by 2030 against our 2010 baseline. We are currently developing our approach to delivering further reductions post-2030, including our approach to increased uptake of low carbon concretes. We will publish our approach over the coming years.

We are currently engaged in a 'Triple Carbon Reduction' innovation project which uses renewable energy-powered hydrolysis to produce hydrogen and oxygen from water. The hydrogen is collected to be used as a fuel whilst the oxygen is used to replace traditional aeration, delivering efficiency gains. The results of this trial will feed into the development of our hydrogen strategy over the coming years.