Pennon

Task Force on Climate-related Financial Disclosures 2022

Bringing water to life, supporting the lives of our people and the places they love for generations to come

Task Force on Climate-related Financial Disclosures (TCFD)

We are driven by our strategic focus of leading in UK water infrastructure, delivering for the benefit of our customers, communities and the environment.

Our commitment to meeting the challenges arising as a result of climate change forms part of our principal risks. Our TCFD disclosure sets out some of the key climate-related risks and opportunities being addressed by the Group. Our regulated water businesses are the main focus of our TCFD disclosures with the majority of our assets, revenues, and expenditures related to this area.

TCFD recommendations

Created by the Financial Stability Board (FSB), the TCFD published its recommendations in June 2017. This is our third year of reporting on TCFD and the below shows our progress and compliance to the recommendations.

Within our ESG strategy, we have set clear objectives to demonstrate leadership in minimising emissions that contribute to climate change and to develop climate change adaptation strategies. The Group has set some challenging targets towards a sustainable future including our commitments to achieve operational Net Zero Carbon by 2030 and eliminate water poverty by 2025.

The Group is focused on delivering for our stakeholders including our customers and shareholders. As a result, we are looking to embed key climate-related decision making within the business as well as manage the near term inflationary pressures including power prices. We will also manage change to our investments to explore new technology, materials and nature based solutions within the current global constraints on capacity and supply chains to deliver both affordability and fairness for our customers.

As a Group, we have reported our GHG emissions since 2013. Our GHG emissions performance is disclosed through our CDP Climate change assessment in which we received a B in 2021. You can read our GHG emissions performance on page 90.

Governance

The organisation's governance around climate related risks and opportunities

2021/22 progress	2023 and beyond
• We have further developed our governance framework, embedding both a Net Zero Committee and Energy Committee into the governance structure. • The publication of the South West Water Climate Adaptation report in December 2021 focuses on the impacts of physical climate risks to the company.	• Whilst climate change is already considered as part of the decision-making process across the business, we are looking to further embed the TCFD considerations into the governance and management of climate risks across the business in 2022/23. • We will look to further embed the assessment and identification of climate-related risks within our investment appraisal processes.

Strategy

The actual and potential impacts of climate related risks and opportunities on the organisation's business, strategy and financial planning

2021/22 progress	2023 and beyond
• Building on work to assess physical climate risks in 2021, we have expanded our assessment of the transitional climate risks during the year and developed a comprehensive risk and opportunities register of which the key findings are featured on page 108 to 118 of this report. We have established the materiality of key risks with stakeholders across the Group and considered the impacts under different climate transition scenarios.	• Looking ahead we will integrate our climate risks within our existing risk management systems and risk registers across the Group. We will allocate risk owners who will continue to drive and monitor action to manage risks and pursue opportunities. • We intend to review our policies and strategic decision-making across the Group in order to enhance considerations of climate risks and opportunities.

Risk Management

The processes used by the organisation to identify, assess, and manage climate-related risks and opportunities

2021/22 progress	2023 and beyond
• We have enhanced our capability in the assessments of climate-related opportunities by developing criteria to assess the materiality of opportunities, in line with our existing risk management procedures.	• We will be reviewing our decision-making frameworks and financial models to ensure climate related risks are clearly identified and assessed through the investment processes and operational decision-making.

Metrics and Targets

The metrics and targets used to assess and manage the relevant climate-related risks and opportunities

2021/22 progress	2023 and beyond
• We have enhanced our climate-related metrics and targets with the establishment of new ESG targets, the continued development of our Net Zero commitments and renewable energy generation.	• We are continuing to explore options to develop quantitative metrics for our key climate risks and opportunities, and exploring our ability to report on our capital expenditure related to climate action.

Climate-related Governance

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

Recommended disclosures

a. **Describe the board's oversight of climate-related risks and opportunities.**
b. **Describe management's role in assessing and managing climate-related risks and opportunities.**

The Group has a strong governance structure in place to oversee the effective operation of our business with overall ownership and responsibility for climate-related risks, opportunities, and mitigation actions held by the Pennon Group ESG Committee.

Climate change is a principal risk on the Group's risk register. This means that it is reviewed as part of the wider audit governance processes. It is noted through the risk management process that climate change touches a number of the principle risks and these are included on the underlying risk registers for each. During the regulatory period, climate change planning is assessed to ensure the business remains resilient to changes to its capital programme. For more information see our Corporate Governance report pages 133 to 145.

The responsibility for ESG and climate-related risks and opportunities is then cascaded through the business in order to meet our targets and objectives.

The responsibility for ESG and climate-related risks are clearly owned, managed and assessed by a number the Group's executive teams within the water businesses including water resources, wastewater, regulation, procurement and finance.

The Executive Directors' remuneration policy is set to incentivise the achievement of key performance objectives. For 2021/22, the element previously based on personal objectives has changed and now relates to ESG objectives and performance including targets relating to our carbon reduction goals, the working environment for our employees and diversity.

Understanding our customers views is fundamental to managing their expectations and providing the regulator with more information on how we interact with our customers and what their views are on different scenarios and matters.

In 2021, South West Water carried out additional customer research. The overall feedback on priorities are consistent but customer focus on the environment and climate change is increasing. Specific feedback from customers has been:

- 9 in 10 customers consider climate change to be a significant environmental risk that needs action.
- Climate change and protecting the environment are viewed as requiring transformational change to make a step change.
- Customers support dealing with climate change by reducing carbon emissions and addressing the impacts of climate change. Steps to reduce energy use and carbon emissions are urgent and also supports value for money services.
- Customers think it is important to protect infrastructure from the impacts of climate change, to enable services to be maintained in the face of even more extreme weather.
- Customers think that investment in addressing the impacts of climate change and storm overflows are essential, but the investment needs to be paced to deal with the highest priorities first, or in the case of climate change as the needs arise.

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.

Recommended disclosures

a. **Describe the climate-related risks and opportunities the organisation has identified over the short, medium, and long term.**
b. **Describe the impact of climate related risks and opportunities on the organisation's businesses, strategy, and financial planning.**
c. **Describe the resilience of the organisation's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.**

As part of our 2022 disclosure, we have developed our assessment of transition risks and opportunities. In 2021, we focused on the physical risks which would affect the business alongside South West Water's Climate Adaptation Report. Both South West Water and Bristol Water submitted their reports to Defra in 2021.

The most material physical and transitional climate-related risks and opportunities are presented on the following pages.

The risks have been assessed using the Pennon 4x4 assessment grid which puts the highest risks in the red category under the RAG review.

The Group has looked at the risks through the lens of the larger South West Water business but believe the water risks remain consistent throughout the water business.

Physical Risks

Key physical climate risks	Key impacts identified on operations and customers[1]	Relevant time horizon	Examples of actions to mitigate risks & realise opportunities	Risk score in 2025 including current actions	Risk score in 2050 without further action	Primary impact to the business
Increasing frequency and intensity of droughts	• Drought events lead to loss of supply and de-pressurisation of pipelines, greater incidence of pipe failure and contamination. • More extreme wetting and drying cycles cause soil movement, more pipe movement/subsidence and bursts. • Lower river flows as a result of drought events reduce yields. • Lower groundwater levels reduce borehole yields. Intake, borehole pump and reservoir draw-off levels do not match reduced levels. • Increased daily and peak demand for garden watering and crop irrigation during drought events.	Short, medium & long term	**Current actions:** Demand management and water efficiency, including Per Capita Consumption (PCC) reductions. Leakage reduction strategy. Investigation of regional water transfers. Potential Abstraction Incentive Mechanism (AIM) schemes. **Planned actions:** Water Resources Management Plan including demand management options i.e. increased metering, leakage reduction. Drought planning beyond five years including more extreme events. Stochastic and multi-year drought analysis to test how water supply systems perform in extreme long droughts. Collaborative water resource management planning – West Country Water Resources and Water Resources South East.			Reputation and cost (service disruptions will negatively impact reputation and reduce ODI rewards/ increase ODI penalties. Additional costs for leakage reduction and demand management, likely recovered through regulatory system).

1. Key impacts are taken as the top scoring risks from South West Water's Adaptation Report 2021 under the relevant climate driver, considering the 2025 and 2050 time horizons.

Key

Risk High Medium Low

Opportunity High Medium Low

Key physical climate risks	Key impacts identified on operations and customers[1]	Relevant time horizon	Examples of actions to mitigate risks & realise opportunities	Risk score in 2025 including current actions	Risk score in 2050 without further action	Primary impact to the business
Increasing average temperatures and heatwaves	• Algal blooms, triggered by catchment runoff, are exacerbated by higher temperatures. • Decreased water quality (odour, discolouration, dissolved organics, Cryptosporidium) requiring additional resources and cost to remove pathogens from drinking water or ensure water quality meets regulatory standards at WTWs. • Higher peak demand for water. • Increased microbe propagation and survivability affecting treatment process • Higher septicity levels in received wastewater • Increased prevalence of invasive non-native species.	Short, medium & long term	**Current actions:** Upstream Thinking catchment management. Granular activated carbon at certain Water Treatment Works (WTWs), Robust health and safety practices and management. **Planned actions:** Upgrade to granular activated carbon treatment at further WTWs.			Reputation and cost (service disruptions will negatively impact reputation and reduce ODI rewards/increase ODI penalties. Increased costs for water treatment and upgrades to WTWs, potentially recovered through regulatory system).
Increasing frequency of heavy rainfall and floods	• Increased river flows and risk of bank erosion exposing wastewater pipes increasing the risk of collapse. • Increased volumes of storm water exceed pump capacity leading to service failures. • Exceedance of storm tank design and asset flooding/ damage with interruption to service. • Increased frequency of storm overflows. • Dilution of, and rapid variations in influent flows – longer retention of water in storm tanks leads to increased septicity and operational problems. • Catchment erosion in moorland or peatland areas, with nutrients leaching that increase algal growth in waterbodies and reservoirs. • Increased flood incidence impacts water quality for some boreholes, may result in temporary inaccessibility or contamination. • Increased runoff/overland flow and greater sediment levels in raw water; loss of access to assets and asset flooding.	Short, medium & long term	**Current actions:** Catchment management through Upstream and Downstream Thinking. Asset flood risk assessments undertaken every five years. Contingency planning in flood risk hotspots e.g. River Otter (SWW). New Mayflower WTW in Plymouth increases local flood resilience. Partnership flood schemes e.g. Countess Wear Waste Water Treatment Works (WWTW) (Exeter). Drainage & Wastewater Management Plan (DWMP). Management of Combined sewerage overflows (CSO) spill risks/bathing water compliance. £2.57 million in PR19 to improve flood defences at four WTWs up to 1 in 1,000 year events. Sites have temporary deployable flood protection. **Planned actions:** Further sewer separation schemes in areas at risk. Surface water drainage plans and investment in key areas. Upstream Thinking expansion. Real-time monitoring and control (e.g. at all CSOs). Continue to improve incident management.			Reputation and cost (service disruptions will negatively impact reputation and reduce ODI rewards/increase ODI penalties. Additional costs for improving operational resilience, Upstream and Downstream Thinking, potentially recovered through regulatory system).

1. Key impacts are taken as the top scoring risks from South West Water's Adaptation Report 2021 under the relevant climate driver, considering the 2025 and 2050 time horizons.

Key physical climate risks	Key impacts identified on operations and customers[1]	Relevant time horizon	Examples of actions to mitigate risks & realise opportunities	Risk score in 2025 including current actions	Risk score in 2050 without further action	Primary impact to the business
Rising sea levels	• Rising sea levels increase the extent of the saline intrusion zone. Saltwater intrusion of groundwater sources causing source to become unusable. Tidal limits move upstream, causing increased salinity at river intakes. • Rising sea levels increase the extent of the saline intrusion zone causing accelerated asset deterioration and process performance efficacy. • Coastal estuarine storm overflow discharges become tide-locked hindering free discharge • Direct asset flooding/ storm damage/coastal erosion.	Short, medium & long term	**Current actions:** Improved flood resilience of all assets in the coastal floodplain. Protection of sites from saline intrusion/incursion (Otter Basin). Partnership flood schemes e.g. Countess Wear WWTW (Exeter). Asset flood risk assessments undertaken every five years. **Planned actions:** Protection of further sites from saline intrusion/incursion.	Medium	High	Reputation and cost (costs for protecting sites and for using alternative water supply if sites become unusable. Potential for costs to be recovered through regulatory system).
Increasing frequency of extreme weather events and storms	• Power supply failure due to high winds, heavy rainfall/flooding, lightning at key network and treatment sites. • Cold snaps and freeze-thaw events leading to pipe bursts.	Short, medium & long term	**Current actions:** Cold weather plan. Investment in centralised control room and alternative water supply teams. Duplication of strategic water mains network. Backup power at plants to manage risks of energy supply interruption. Recovery plans for 100 WWTWs. **Planned actions:** Real-time monitoring and control. Extend recovery plans at more WWTWs.	Medium	Medium	Reputation and cost (service disruptions will negatively impact reputation and reduce ODI rewards/increase ODI penalties. Additional costs to restore services, some of which many be recovered through regulatory system).

Key

Risk High Medium Low

Opportunity High Medium Low

Transition Risks

Type as defined by TCFD	Potential risks and opportunities – further details	Relevant time horizon of risk	Examples of actions to mitigate risks & realise opportunities	Risk rating after controls	Primary impact
Policy, Regulation & Legal Risks	**Uncertainty in climate-related regulation in the Water sector, posing the risk of increasing costs and carbon:** Uncertainty about climate-related policies and regulations in the Water sector, including potential misalignment in actions to improve environmental outcomes at the same time as reducing carbon. In some cases new/enhanced policies and regulations pose a risk due to increasing costs to Pennon or increasing Pennon's carbon footprint, in other cases the lack of policies and regulation pose a risk due to potential that costs incurred by Pennon may not be recovered through the regulatory system. Some examples include: • more stringent environmental regulation being imposed in response to the climate adaptation and resilience agenda • reduced abstraction allowances being imposed • changes to carbon accounting methodologies and scope boundaries • absence of carbon reduction target from water sector regulators • enhanced requirements which increase Pennon's energy and carbon footprint e.g. Phosphorus removal, and UV disinfection.	Short & medium term	**Managing uncertainty in climate policy and regulation:** **Current Actions:** Horizon scanning to identify emerging regulation, stakeholder engagement/public relations management, Net Zero programme, engaging with regulators to explain the climate change impacts of new regulation, working with others in the sector to clarify carbon accounting approaches. **Future Actions:** Pursuing opportunities for low-regret solutions and nature based solutions, investment in innovation/ research and development, and climate action investment in enhancements to resilience to key risks, considering applying an internal carbon value to consider full costs and benefits of decisions, public value assessments in decision-making.		Cost (potential costs incurred due to changes to regulation, may be potential to recover some cost through regulatory system over time. Potential increase in carbon footprint due to increased treatment requirements).
Policy, Regulation & Legal Risks	**Regulatory funding risk for achieving Net Zero by 2030 and adapting to climate change:** Risk that the investment required to transition to and adapt to climate change in the time period targeted by Pennon, is not allowed in the regulatory funding risk.	Short & medium term	**Managing regulatory funding risk:** **Current Actions:** Business Planning/ making case for investment, engagement with regulators and customers and stakeholders, public campaigns/awareness of investment need for climate action including TCFD programme, exploring options to ensure a return on investment for some climate-related actions, demonstrating/communicating Net Zero 2030 in water sector is a useful and helpful milestone on the way to government's goal for Net Zero 2050. **Future Actions:** Explore options for third-party funding or partnerships for climate action.		Cost (potential to recover some cost through regulatory system over time).

Type as defined by TCFD	Potential risks and opportunities – further details	Relevant time horizon of risk	Examples of actions to mitigate risks & realise opportunities	Risk rating after controls	Primary impact
Technology Risks	**Capacity and readiness of technology and resources to achieve Net Zero before other sectors and the wider UK:** Risks that skills, technology, resources, and infrastructure are not ready and available to enable Pennon's transition to Net Zero operational carbon by 2030, resulting in delays and in some cases resulting in Pennon paying high costs to access resources. Some examples include: • availability and capacity of Pennon's workforce and supply chain to procure and design low carbon solutions • availability and capacity of technology and infrastructure, particularly in the South West of England, to enable development of Pennon's renewable energy projects and other Net Zero programme activities • high demand for resources and technologies from others causing delays and increasing costs for Pennon (e.g. demand for expertise, batteries, electric vehicles) • unsuccessful investment in new technologies, or technology which is then superseded.	Short & medium term	**Managing capacity constraints in Pennon:** **Current Actions:** Continual enhancement of capacity within Pennon (e.g. training, recruiting key skills), collaboration with supply chain partners (e.g. consultants, technology providers, contractors), collaboration with stakeholders (e.g. academia, environmental groups in South West), collaboration with other water companies and across the sector to develop standard approaches and enhance capacity. **Future Actions:** Prioritising actions/solutions which are low-regret/ flexible e.g. nature-based solutions, piloting options/technology before scaling. **Managing supply chain and infrastructure limitations:** **Current Actions:** Horizon scanning to identify emerging limitations and risks, engagement with key suppliers and partners, enhancing capacity within Pennon to reduce reliance on suppliers, enhancing collaboration with partners and stakeholders. Engaging with infrastructure providers, regulators and government to encourage investment to enable network capacity. **Future Actions:** Procurement strategies for key technologies/expertise, enhancing supply chain resilience (e.g. diversification of suppliers), exploring options which are less reliant on network capacity (e.g. onsite battery storage), purchasing renewable electricity. **Managing costs to transition:** **Current Actions:** Seek to fund investment through the regulatory process (business planning and price reviews). Investment in innovation to reduce costs of low carbon technology. **Future Actions:** increasing efficiency to reduce costs, recovering some costs from retired assets (e.g. selling used equipment), explore partnership opportunities (e.g. PPAs). **Avoiding unsuccessful investment:** **Current Action:** R&D programme with gated investment (e.g. piloting before scaling up), horizon scanning to identify emerging technology and risks, procurement strategies to reduce costs (e.g. competitive tendering, joint ventures etc.). learning from others in the water sector in UK and international. **Future Action:** Prioritising solutions that are low-regret, particularly nature-based solutions through piloting technology before scaling.		Cost (costs incurred due to delays and due to high demand for resources. Potential to recover some cost through regulatory system over time).

Key

Risk High Medium Low

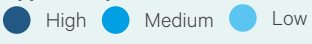
Opportunity High Medium Low

Type as defined by TCFD	Potential risks and opportunities – further details	Relevant time horizon of risk	Examples of actions to mitigate risks & realise opportunities	Risk rating after controls	Primary impact
Market Risks	**Increased costs of energy and materials due to climate impacts and the transition to Net Zero:** Increases in costs of energy sources and input materials due to the Net Zero transition and/or impacts of climate change. Some examples include: • Price of electricity increasing due to transition to Net Zero, particularly 100% renewable electricity which may be in high demand/ limited supply • Price of fuels and gas increasing due to transition to Net Zero • Price of chemicals and construction materials (e.g. cement, steel) increasing.	Short & medium term	**Managing cost of energy:** **Current Actions:** Generation of renewable energy, increasing efficiency to reduce energy demand (e.g. enhance energy efficiency, reduce leakage), electricity price hedging. **Future Actions:** Fuel switching, changing operational practices to reduce energy use/ energy cost (e.g. taking advantage of off-peak electricity pricing), exploring options which require less energy (e.g. nature-based solutions). **Managing cost of input materials:** **Current Actions:** procurement strategies to reduce cost (e.g. competitive pricing). **Future Actions:** Increasing efficiency to reduce material use, light-weighting/reducing material consumption, enhancing supply chain resilience (e.g. diversifying suppliers to reduce cost), investing in innovation to use different chemicals and materials.		Cost (potential to recover some cost through regulatory system over time).
Reputational Risks	**Negative public and stakeholder relations due to Pennon failing to be a seen as a leader on climate action and environmental sustainability:** Negative perception from the public/stakeholders/regulators, possibly linked to a major climate-related incident/event/failure. Some examples include: • Public concern about climate-induced pollution events and sewer overflows (e.g. after storms linked to climate change) • Customers and stakeholders concerned about the environmental impact of abstraction and wastewater discharge in response to the climate adaptation agenda • Shifts in stakeholder/customer expectations related to carbon and climate which are difficult for Water companies to manage • Stakeholder and customer dissatisfaction if Pennon fails to meet Net Zero commitments.	Short & medium term	**Managing public and stakeholder relations:** **Current Actions:** Risk management practices, investment to reduce key risks, Net Zero programme, environmental programmes (e.g. Water Industry National Environment Programme – WINEP), customer and stakeholder engagement/public relations, ESG and sustainability initiatives, community outreach and educational programmes. **Future Actions:** considering applying an internal carbon value to consider full costs and benefits of decisions, consider new ways to enhance engagement with customers and communities.		Reputation and Cost (negative reputational impacts, and potential costs incurred to manage stakeholder relations).

Type as defined by TCFD	Potential risks and opportunities – further details	Relevant time horizon of risk	Examples of actions to mitigate risks & realise opportunities	Risk rating after controls	Primary impact
Reputational Risks	**Customer affordability and fairness concerns for achieving Net Zero and adapting to climate change:** Affordability for customers and questions around fairness become very challenging (even with government contribution) due to investment needs related to climate, which could result in dissatisfaction from customers and stakeholders.	Short & medium term	**Managing customer affordability:** **Current Actions:** Secured government contribution to customers bills, customer and stakeholder engagement/public relations (including engaging with regulators and government about sharing costs etc.), community outreach and educational programmes to help explain need for investment in climate action, seeking return of investment for actions taken to manage climate, arrangements with/requirements on suppliers to cover some costs (e.g. building leases), procurement strategies to reduce costs (e.g. competitive tendering, joint ventures etc.), support programmes for customers struggling to pay bills, phased investment in climate adaptation over time to reduce pressures on bills. **Future Actions:** exploring actions to reduce costs across the business, becoming more efficient to reduce costs to reduce impacts on customer bills, innovation programme seeking to reduce costs, recovering some costs from retired assets (e.g. selling off), seeking third-party sources for investment (e.g. climate action grants/funds).		Reputation & Cost (negative reputational impacts, and potential costs incurred to manage stakeholder relations).
Transition opportunities					
Resource Efficiency	**Saving water, energy, materials, and carbon by enhancing efficiency, using low-carbon and nature based solutions, and reducing emissions across Pennon's supply chain:** Opportunities to invest in enhancing efficiency and reduce wastage of water, energy, and materials, opportunities to use low-carbon construction, approaches, and nature-based solutions, and opportunity to work with suppliers to reduce their carbon footprints and enhance their sustainability. Some examples include: • Pennon's leakage reduction programme, water efficiency programme, smart metering, rainwater harvesting, grey water, incentivising customers to use less hot and cold water • Enhancing efficiency of process equipment (reducing energy use and chemical use), energy saving measures for buildings and transport • Substituting construction materials for low carbon alternatives, local sourcing of materials, enhancing efficiency of material use in construction.	Short & medium term	**Enhancing water efficiency:** **Current Action:** Leakage reduction programme, water efficiency programme (within Pennon's own operations and across customer networks), smart metering, customer education/outreach, communications around carbon etc. **Future Actions:** Rainwater harvesting, incentivising customers to use less water, considering applying an internal carbon value to consider full costs and benefits of decisions. **Enhancing process, building, and transport efficiency:** **Current Actions:** Actions to enhance process efficiency, energy efficiency programme for Pennon's buildings, requirements in leases for efficient buildings, changes to operational practices to reduce need for travel (e.g. remote monitoring and control), procurement/leasing of efficient vehicles. **Future Actions:** Investments in innovation to enhance efficiency, changes to operational practices to enhance efficiency (e.g. real time monitoring and control), partnerships with suppliers/ outsourcing specific operations, option to relocate to efficient buildings, employee carpooling, lightweighting vehicles, considering applying an internal carbon value to consider full costs and benefits of decisions.		Carbon (potential to reduce carbon footprint, however requires significant investment. Some costs may be recoverable through regulatory system over time).

Key

Risk


Opportunity


Climate-related opportunities

Type as defined by TCFD	Potential risks and opportunities – further details	Relevant time horizon of risk	Examples of actions to mitigate risks & realise opportunities	Risk rating after controls	Primary impact
Resource Efficiency (continued)	• Using technology to avoid high-carbon interventions, such as using Real Time Control in sewers to increase operational capacity instead of constructing bigger sewers. • Constructing wetlands for wastewater treatment and sustainable drainage systems (SuDS) to reduce capital and operational carbon. • Removing carbon from the atmosphere through investing in marine carbon opportunities, restoring peatlands, tree planting, and soil and grassland activities • Working with suppliers to reduce their carbon footprints and enhance their sustainability, and opportunity to access new suppliers with high ESG credentials.		**Using low-carbon solutions:** **Current Actions:** Implementing capital carbon accounting. **Future Actions:** Net Zero programme (embodied carbon initiatives), engagement with supply chain, procurement strategies (e.g. requirements on suppliers), innovation programme (e.g. exploring alternative materials and approaches), collaborations with supply chain (e.g. optioneering to reduce embodied carbon), learning from other companies in UK and international, considering applying an internal carbon value to consider full costs and benefits of decisions. **Using nature-based solutions:** **Current Actions:** Embedding natural capital into decision making, investing in innovation and piloting. **Future Actions:** Establishing partnerships with stakeholders (e.g. landowners), collaborations with supply chain (e.g. optioneering considering nature-based solutions), learning from other companies in UK and international, considering applying an internal carbon value to consider full costs and benefits of decisions. **Reducing supply chain carbon:** **Current Actions:** Engaging with suppliers. **Future Actions:** Procurement strategies (e.g. requirements on suppliers to meet ESG criteria/ low climate risks, reduce emissions), learning from other companies in UK and international, diversifying supply chain to lower emissions/risks, sourcing locally where possible, life cycle assessment requirements for suppliers.		

Type as defined by TCFD	Potential risks and opportunities – further details	Relevant time horizon of risk	Examples of actions to mitigate risks & realise opportunities	Risk rating after controls	Primary impact
Energy Source	**Reducing carbon and enhancing energy resilience by using and generating renewable energy:** Opportunities to lower carbon by using renewable energy and opportunities to invest in renewable energy generation which can lower carbon and enhance energy resilience (e.g. less reliance on energy suppliers). Some examples include: • South West Water's commitment to purchase 100% renewable electricity from 2022 onwards • Switching fuels to lower-carbon sources, such as switching diesel to renewable electricity and HVO as a transition fuel • Generating renewable energy on Pennon's sites and through partnerships (e.g. PPAs) such as through generating energy from wastewater and sludge, and generating electricity through solar and wind.	Short & medium term	**Using renewable energy:** **Current Actions:** Procurement strategy for renewable energy, supply contract for 100% renewable energy by 2023, Net Zero programme, prioritising investment to deliver highest carbon reduction, seeking return on investment (ROI) where possible, investment in generating renewable energy. **Future Actions:** trialling low-carbon fuels, innovation programme (e.g. exploring options to generate and recover energy from sewers), engagement with potential partners for PPAs, establishing the commercial and legal arrangements to co-fund investments/buy renewable energy directly from suppliers, considering applying an internal carbon value to consider full costs and benefits of decisions.		Carbon (potential to reduce carbon footprint, however requires significant investment. Some costs may be recoverable through regulatory system over time).
Products and Services	**Enhancing revenue through delivering water resources schemes for other water companies:** Opportunities to invest in water resources schemes linked to climate change, enhancing revenue for Pennon. Some examples include: • Water transfers from Pennon to other water companies • Delivering strategic resource options (SROs) through Direct Procurement for Customers (DPC) in areas outside of South West England • Opportunities to sell expertise and technologies for water efficiency and leakage reduction.	Short, medium & long term	**Delivering water resources schemes:** **Current Actions:** Strategic planning (e.g. Water resource management programme), engagement with other water companies, engagement with regulators and stakeholders, establishing commercial and legal arrangements for water transfers/SROs. **Future Actions:** investments in infrastructure to enable transfers SRO schemes (e.g. investing in water efficiency and leakage reduction in the South West region, investing in infrastructure outside of the South West region), engagement with customers to build support (e.g. social license). **Selling expertise and technology:** **Current Actions:** investment in innovation and piloting new technology and approaches. **Future Actions:** Market research to identify appetite for services (e.g. grey water harvesting, leakage detection, desalination), establishing commercial and legal arrangements for selling expertise, engagement with stakeholders and regulators and potential customers/partners.		Revenue (potential to increase revenue through supplying additional water, however requires significant investment. Potential for costs to be recoverable through regulatory system over time).
Markets	**Generating value and reducing cost of capital through sustainable financing:** Opportunity to reduce the cost of finance (and avoid cost increases) through access to sustainable financing and generation of green financial assets. Our Sustainable Finance Framework is part of our strategy for taking action on climate change, and our approach is evolving as policy and markets change and information becomes available. We are exploring the implications for our business, including regulatory developments such as the EU Taxonomy/UK Green Taxonomy.	Short & medium term	**Sustainable finance:** **Current Actions:** Sustainable financing framework, TCFD programme, investigating requirements to access sustainable finance markets, procurement & finance strategies, ESG initiatives. **Future Actions:** establishing commercial and legal arrangements for buying and selling green financial assets/credits, future disclosure/ESG initiatives(e.g. EU Taxonomy, Taskforce on Nature-related Financial Disclosures), exploring opportunities to attract third-party funding.		Cost & Reputation (potential to reduce costs or avoid cost increases for capital, and potential to enhance reputation)

Key

Risk High Medium Low

Opportunity High Medium Low

Type as defined by TCFD	Potential risks and opportunities – further details	Relevant time horizon of risk	Examples of actions to mitigate risks & realise opportunities	Risk rating after controls	Primary impact
Resilience	**Enhancing resilience across Pennon's operations, asset base, and supply chain to avoid costs and enhance value:** Opportunity to invest in enhancing resilience across Pennon's business and supply chain, in some cases saving cost (e.g. avoided damage/losses, avoided penalties on ODIs and GSS) and enhancing company reputation and value. Some examples include: • Enhancing Pennon's resilience by investing in climate change adaptation e.g. investing in drought and flood prevention measures to avoid customer disruption/ penalties/ compensation payments and avoid asset damage. • Enhancing supply chain resilience by investing in buffers/storage for critical resources, diversifying suppliers, replacing suppliers who have high climate risks, thereby reducing potential risks and costs associated with supply chain disruption and delays.	Short, medium, and long term	**Enhancing Pennon's resilience:** **Current Actions:** company resilience planning, climate risk assessments and climate adaptation planning, engaging stakeholders and regulators and customers, investments in response and recovery to operational disruption. **Future Actions:** Actions to adapt to climate change (e.g. enhancing drought resilience) and to mitigate climate risks. **Enhancing supply chain resilience:** **Current Actions:** existing storage and buffers for resources (e.g. chemical storage, parts storage), existing diversity in suppliers. **Future Actions:** Actions to enhance supply chain resilience (e.g. diversifying suppliers/ location of suppliers), procurement strategies (e.g. requirements on suppliers to meet ESG criteria/ low climate risks), investments in response and recovery to supply chain disruption.		Cost & Reputation (potential to reduce and avoid costs, however requires significant investment. Potential to enhance reputation. Potential for costs to be recoverable through regulatory system over time).

Climate Scenario Analysis

In alignment with the TCFD recommendations, we have assessed the risks and opportunities associated with climate change and the transition to a Net Zero climate resilient economy over short, medium and long term horizons using the following scenarios.

Physical risk scenarios

RCP2.6[1]: Lower Physical Impacts

An approximate '2°C' warming scenario by the year 2100 – corresponding to a low emissions 'optimistic' scenario.

RCP8.5[1]: High Physical Impacts

An approximate '4°C' warming scenario by the year 2100 – corresponding to a high emissions 'business-as-usual' scenario, which is appropriate to use when considering high risks.

Transition risk scenarios

'1.5 degree' scenario: Fast Transition

A scenario which sees the UK as a global leader with strong policies and actions to mitigate climate, aligned with the Paris Agreement.

Policy ambition	Government policy	Technology change
1.5°C	**Immediate and smooth**	**Fast change**

'Current policies' scenario: Slow Transition

A scenario which sees the UK make incremental progress to mitigate climate change, but assumes no major policy changes and results in missing the aims of the Paris Agreement.

Policy ambition	Government policy	Technology change
3°C+	**None – current policies**	**Slow change**

1. The IPCC's Representative concentration pathways from the IPCC's 5th assessment (2014)

Physical Risks

Approach taken

The Group undertook qualitative scenario analysis in early 2021 considering the financial implications of the physical climate risks for South West Water under two climate scenarios based on the IPCC's Representative Concentration Pathway (RCP) scenarios. Potential material financial impacts were considered over the 10 year horizon to 2030, aligning with the Group's regulatory financial viability testing. Material impacts on the business and strategy were considered over the time horizon to 2050 – aligning with a medium term view of climate change impacts before uncertainty increases beyond 2050. We plan to extend our analysis to cover Bristol Water (acquired June 2021) in the coming year.

The previous risk assessments and long-term plans have incorporated climate change based on the UK Climate Projections 2009 (UKCP09), as the planning pre-dated the release of UKCP18 in 2018 and onwards. This includes the translation of UKCP09 scenarios into national guidelines for water resources management and flood and coastal erosion risk management. In broad terms, our WRMP19 considers warming of around 3°C by the end of the century, because it was based on the UKCP09 Medium Emissions scenario, plus some additional allowances for climate change uncertainty. In addition, in all of the plans South West Water adopt an adaptive approach, including sensitivity analysis of more extreme scenarios, so that South West Water are ready to adjust the plans to incorporate the latest scientific evidence and take necessary action. SWW are currently updating the WRMP to produce WRMP24, undertaking regional planning, and developing the Drainage and Wastewater Management Plan. All of these updated and new plans will use UKCP18 data and inform the South West Water next business plan. The Group has looked at the risks through the lens of the larger South West Water business but believe the water risks remain consistent throughout the water business.

Impacts

- The most significant financial impacts for the Group are on the input costs and operating costs, capital costs, and Outcome delivery Incentive (ODIs) penalties and rewards (due to potential failure to achieve performance commitments as part of the regulatory framework).
- The risk assessment clearly shows long term significant risks if the impacts of climate change are not mitigated. South West Water operates over £6 billion of water assets and over £7 billion wastewater assets all of which will be affected by climate change in some way.
- The high risks around climate change noted in previous reporting remain key concerns, however risks related to all physical risks are increasing. In a worst-case scenario potentially up to an additional ten sewage works, and 150 sewage pumping stations could be at risk of sea level inundation. This alone could be in well excess of £200 million of new investment every five years for the next 20 years. This assumes no further protection against flooding is invested in and although some of this will be at the company's expense wider flood protection will be required to protect wide ranging coastal assets.
- The risks to Pennon's infrastructure are affected by risks to the natural environment, and therefore South West Water continues to invest heavily in natural capital schemes, catchment management, partnerships, and research and development in this area, as well as implementing our comprehensive Biodiversity Strategy and Environment Plan 2050.

Strategic response

Our strategy for managing physical climate risks and financial impacts can be summarised as: adapt to climate change, enhance resilience, innovate, become more efficient, and balance investment, in order to maintain and improve the Company's performance to the year 2050. This will require significant action and investment by the Company, as well as action by supply chain partners and wider actors.

Longer term investment, as outlined in the strategic plans, will be needed to manage future risks to acceptable/tolerable levels. The long-term risk is significant and will require additional investment to mitigate their effect. To achieve this regulatory and government support within their policy frameworks will be needed.

The combined characteristics of low population density, high coastline to land area ratio and tourism-based seasonal flux on water demand, present a unique set of challenges. Through the years, by innovating, investing, and adapting, we have achieved industry-leading results in many areas of the business. The extensive programme of environmental improvement has resulted in some of the finest bathing waters in Europe to meet these challenges and the expectations of our customers having seen record visitors following the COVID-19 pandemic it is expected further investment will be required to maintain the progress made by Pennon Group to protect the environment and our bathing waters.

Compared to today, overall our revenue is unlikely to be impacted significantly as we operate in a regulated environment funded through Price Reviews. However, there is a higher risk of reduced regulatory rewards and increased penalties (ODIs) due to climate change. Our operating costs are likely to increase compared to today, and additional capital investment will be required. The value of our assets and our cost of capital would remain relatively unchanged compared to today.

Key assumptions

Scenarios focus on the UK policy and regulatory context and are semi-independent of global action, and temperature pathways It is assumed hat the current high energy prices remain high throughout the decade.

Environmental ambition is not strongly coupled to the pace of transition.

No significant change to Pennon Group's business activities.

Population in our region increases by 0.4 million, overall water demand remains unchanged from today (due to leakage reduction and water efficiency measures), and overall volume of wastewater treated remains unchanged from today (due to actions taken to reduce surface water flows to sewers).

Impacts

UK Slow Transition Scenario

This scenario provides a challenging context for meeting our 2030 operational Net Zero target. In this scenario we have identified the following main impacts for the business:

- **The cost to the business of achieving the 2030 target rises, and there is less ability to recover costs through the regulatory pricing system.** This is compounded by higher costs for access to low carbon technologies and related skills (due to the UK's underinvestment in this scenario), and increased costs related to both our own renewable energy generation, and the purchasing of green electricity from external suppliers (where demand is likely to outstrip supply).
- **Meeting our 2030 target requires greater use of carbon offsets.** The enabling environment for decarbonisation is weaker and costs are higher, which leads to slower progress in emissions reductions across our business. As a result the residual emissions that need to be offset rise, which adds to the cost.
- **Environmental targets require additional energy use.** New guidance on targets for both nutrients and stormwater overflow will require a significant increase in energy use and associated capital and operational carbon. While nature-based solutions will form part of the solution, there will be significant reliance on engineered solutions due to potential inflexibility in regulation and deadlines to improve outcomes. The increased energy and carbon use compounds impacts 1 and 2 above.
- **Reputational risks are significant and require careful management.** Some of our customers and stakeholders may have differing priorities and preferences for actions to meet the 2030 target, for example regarding the increased use of carbon offsets. Some may be highly sensitive to affordability, and increasingly scrutinise our investments choices.
- **Opportunities are lower than the Fast Transition scenario.** Opportunities for our business remain, however, they are in general more limited, and with lower return than in the fast transition scenario. Increasing energy and resource use efficiency, and pursuing low carbon energy alternatives , is the primary opportunity and can help to offset some of the additional energy and carbon costs. There is also an opportunity to clearly identify and communicate the synergies between environmental objectives and the transition to a Net Zero business in order to increase support from customers, stakeholders, and regulators.

Compared to today, overall our revenue is unlikely to be impacted significantly in this scenario, but also our non-water revenue is less able to grow. Our costs to achieve operational Net Zero may increase relative to our current plans, however, early investment in decarbonising the business to meet the 2030 target remains more cost-effective in the long-term (post 2030), and reduces the risk to the company and our customers from measures such as carbon pricing, as well safeguarding our reputation on environment and climate change. The value of our assets and our cost of capital would remain relatively unchanged compared to today.

UK Fast Transition Scenario

This scenario is more favourable to our business and to the UK's Net Zero goals, as it creates a more supportive enabling environment to achieve our 2030 operational Net Zero target. In this scenario we have identified the following main impacts for our business:

- **Cost to the business is lower than the Slow Transition scenario.** There is much greater regulatory support in order to support the step-change in investment required, with an increase in costs which can be recovered through customers' bills. The maturity of technology and associated business models progresses rapidly, and helps to drive down cost across many areas, including in renewables, resource efficiency, and demand-side measures.
- **Access to the skills and resources needed is costly.** There is very high demand for low carbon technologies, skills, and expertise across the economy in this scenario, which significantly outpaces supply (partly due to the UK's past underinvestment and the time required to develop supply chains). This adds to our costs associated with decarbonisation, and risks delaying key projects.
- **Environmental targets require additional energy use.** This impact is the same as the Slow Transition scenario, however the regulatory environment may be more favourable for nature-based solutions which can also sequester carbon.
- **Enhanced support to low income customers maybe needed.** Fairness in the distribution of the costs of the UK's transition to Net Zero is a key concern among stakeholders. Increased support to customers may be required, and our investments will need to be carefully planned and phased to ensure they are efficient and avoid sudden price impacts.
- **Opportunities are higher than the Slow Transition scenario.** The more favourable enabling environment means that our opportunities are enhanced in this scenario and they are easier to realise. There are particular opportunities to further invest and innovate on energy and resource efficiency, and to attract further investment through sustainable finance opportunities.

Compared to today, overall our revenue is unlikely to be impacted significantly in this scenario, but our non-water revenue has greater potential to grow. Our costs to achieve Net Zero may remain largely unchanged compared to today. The value of our assets may increase as we decarbonise and enhance natural capital, and our cost of capital may decrease compared to today.

Our Strategic Response

Although there are important differences in the impacts between the different scenarios, there are a number of common elements which will require us to implement a common strategic response. The relative importance of each, and specific elements within the response, will vary across the two scenarios, but we have identified six key focus areas which will enhance resilience to transition risks, and better position the Group to take advantage of opportunities:

- **Investing in efficiency.** Under both scenarios there are major carbon savings that can be achieved by increasing efficiency, both in energy use (for example more efficient pumping), reducing water losses, and through the use of smart technology to enable more efficient water supply and transmission systems. Some of these opportunities will also reduce costs. We will invest in programmes to further reduce energy use and carbon across our operations. This will allow us to more rapidly progress to operational Net Zero, and reduce the cost of the transition.
- **Enhancing our energy resilience.** We will continue to invest in generating our own renewable energy to reduce our exposure to energy prices and to enhance our options for energy supply, which is favourable under both scenarios.
- **Enhancing our access to Green Economy resources.** Across both scenarios there will be a shortage of skills and resources across key areas of the Green Economy that we will need to support our transition. To manage this we will diversify our supply chain of low carbon suppliers, and invest in a programme of internal capacity-building to ensure access to the skills needed. We will also work with partners across the industry and engage with peers, regulators, and government to enable rapid investment in the skills and capacity needed to support Net Zero.
- **Engage and influence environmental targets and trade-offs.** New ambitious targets on nutrients and stormwater overflows will require increased energy use and new infrastructure, and subsequently higher operational and capital carbon. There is a trade-off between action to meet these targets and action on decarbonisation, with implications for the balance between nature-based, and engineering solutions. We will engage in ongoing consultations on environmental targets and strategies for meeting them, and seek clear guidance on managing different trade-offs. We will advocate for policies which enable flexibility and time to scale up nature-based solutions so we can maximise co-benefits for our customers and the environment.
- **Enhance our stakeholder and customer engagement.** There are significant reputational risks associated with both scenarios, although the balance of concerns will vary. We will develop plans for enhanced programmes of engagement and communication with our customers and stakeholders, in particular focussing on explaining the costs and benefits of the investments we are making, potential trade-offs and synergies between Net Zero and other environmental targets, and affordability.
- **Pursue opportunities to deliver more value for customers and shareholders.** We will continue to pursue opportunities to reduce costs and enhance sustainability. This includes reducing our financing costs through our sustainable finance framework, investing in our environmental programme which includes restoring ecosystems to capture carbon, and working with partners and suppliers to enhance our resilience and reduce emissions across our supply chain. We will also continue to explore opportunities to enhance our revenue through water resource options, and markets for bioresources and natural capital.

Statement of resilience

There are clear impacts on the business under different transition scenarios, and in particular higher costs for the business in the short-term to meet our operational Net Zero target by 2030 under the slow transition scenario. Several of the strategic responses outlined above are already included in our Net Zero Plan, and we have confidence that the company has a range of strategic options to manage the impacts, take advantage of opportunities, and remain resilient under the different transition scenarios considered.

Following on from our analysis in 2021 of the physical risks, there will be the requirement to invest more to improve our resilience to climate change, assets are likely to require additional protection and planning for new assets will require a greater level of embedded climate related resilience. This will require significant action and investment by the Company, as well as action by supply chain partners and wider actors.

Risk Management

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

Recommended disclosures

- **Describe the organisation's processes for identifying and assessing climate-related risks.**
- **Describe the organisation's processes for managing climate-related risks.**
- **Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organisation's overall risk management.**

The risk management of climate related risks follows the same considerations as all our principal risks, the identification, assessment and management of ESG risks and opportunities, including the potential impact of climate change on our business, is integrated into the Group's overall risk management framework and methodology, with the outcomes reflected within the assessment of relevant principal and business level risks. This includes the potential impact of physical and transitional climate change risks on our assets and operations. Further information can be found in our risk report on pages 96 to 105

Short, medium and long-term horizons

In determining our strategy, we have processes in place for identifying, assessing and responding to climate-related risks and opportunities. In shaping the strategy, we consider short, medium and long-term horizons.

Short-term – 1 to 10 years	These are designed for annual sustainability targets, budgeting and financial control. The five-year short-term horizon aligns to the water business regulated business plan period. Operational risks will be planned and budgeted for over this time frame though planning begins during this period for the next regulatory period. The operational Net zero commitment to 2030 is also included in this time horizon with work already underway for PR24.
Medium term – 10 to 30 years	Water and wastewater treatment assets have a typical life of up to 30 years and will therefore be reviewed during this period. Major projects and operational plans will be renewed and managed over this time frame to ensure projects meet the correct regulatory period plans.

Long-term – 30 to 100 years	Typically for longer-term strategic direction, risk and resilience planning, asset planning and capital investments requirements. These are considered over the long-term horizon for assets such as pipework and reservoirs which will be aligned to longer-term climate impact projections.

Impact and likelihood

A consistent methodology is applied in the assessment of the Group's risks (including climate change related risks), which considers both the likelihood of the risk occurring and the potential impact. Risks are assessed on both a 'gross' (without the consideration of existing control measures) and 'net' (with consideration of existing control measures) basis.

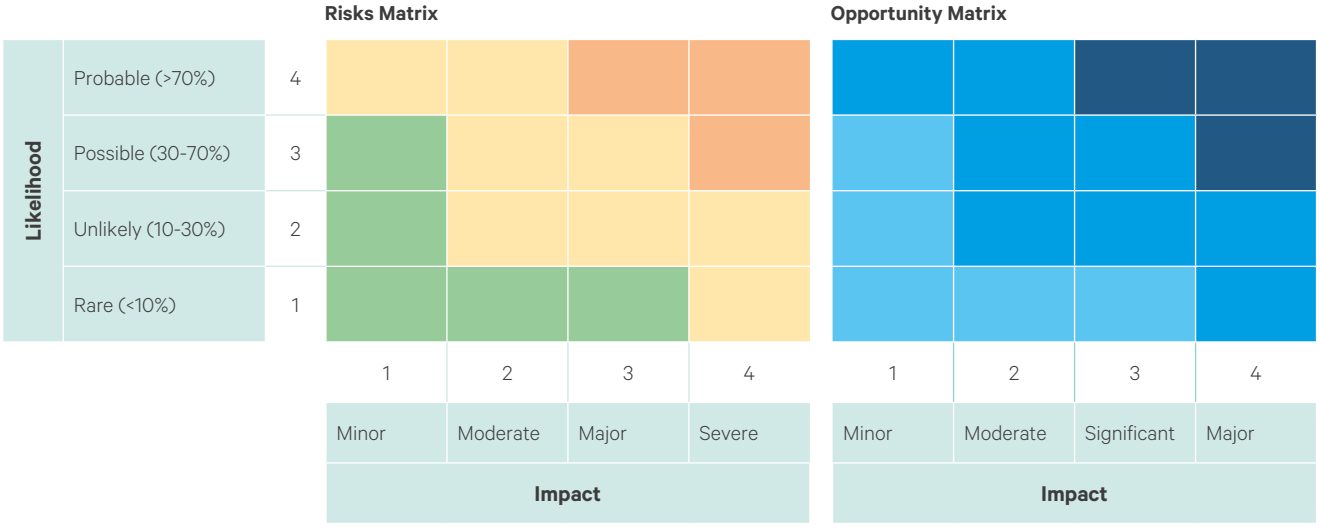
The impact and likelihood is then multiplied and plotted on a 4x4 matrix to determine the overall Red, Amber, Green (RAG) risk rating. Where the net risk is considered to be Red then it is considered to have a substantive financial or strategic impact on the Group.

The RAG rating of the net risk is then used to drive the prioritisation of action.

The risk matrix below illustrates the combinations of likelihood versus impact that generate an overall risk score. Impact is assessed across a range of categories including financial, safety, environmental and customer impact. Likelihood is defined as likelihood over the next 5 years under four categories (probable, possible, unlikely or rare) with defined probability thresholds. Scores range from 1 through to 16. The colour coding applied to the matrix denotes the categories of risk, from low (green), medium (amber) through to high (red).

Likelihood	Risk Rating	Opportunity rating
Probable: more than 70% likelihood of the risk occurring	**Minor:** Impact is assessed across a range of categories including financial, safety, environmental, customer and reputational impact. E.g possible intermittent impact on service to customers or damage to assets requiriing some repair or maintenance. Flat revenue growth or <1% of PBT.	**Minor:** No material change to key areas such as Environment, Safety, Quality or Customers and Stakeholders.
Possible: 30-70% likelihood of the risk occurring	**Moderate:** Impact is assessed across a range of categories including financial, safety, environmental, customer and reputational impact. E.g hosepipe ban or flooding of assets. Reduction of revenue up to 1% or 1-3% of PBT.	**Moderate:** Moderate opportunities to enhance the Environment and Quality, improve safety and build confidence from Customers and stakeholders. Improve company reputation through support from local and regional media outlets.
Unlikely: 10-30% likelihood of the risk occurring .	**Major:** Impact is assessed across a range of categories including financial, safety, environmental, customer and reputational impact. E.g prolonged impact on service to customers in a small region. Reduction of revenue up to 3% or 3-5% of PBT.	**Significant:** Significant opportunities to enhance the Environment and Quality, improve safety and increase confidence from Customers and stakeholders. Noteable improvement in the company's reputation through support from regional and national media outlets. Increasing trust in Group's strategy from stakeholders.
Rare: Less than 10% likelihood of the risk occurring	**Severe:** Impact is assessed across a range of categories including financial, safety, environmental, customer and reputational impact. E.g prolonged impact on service to customers in a large region. Reduction of revenue up to 3% or more than 5% of PBT.	**Major:** Major opportunities to enhance the Environment and Quality, improve safety. Company seen as industry leaders by stakeholders. Improve company reputation through sustained positive support through media.

Pennon Group 4x4 Matrix



Metrics and Targets

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

Recommended disclosures

- **Disclose the metrics used by the organisation to assess climate-related risks and opportunities in line with its strategy and risk management process.**
- **Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.**
- **Describe the targets used by the organisation to manage climate-related risks and opportunities and performance against targets.**

The Group's key metrics and targets are still being developed to provide a comprehensive data set going forward. This year has seen the Group publish a databook in conjunction with the annual report and the annual report includes SASB reporting on pages 93 to 95. The Group is committed to improving its sustainability and climate change related disclosures and will continue to enhance this over the next year.

	Description of the Metric	Trend	Related Targets
GHG Emissions	Scope 1, 2, and 3 GHG emissions (in TCO_2e)	↓	Operational Net Zero by 2030, Total Net Zero by 2045.
	Carbon intensity of our water services (in tonnes of CO_2e per megalitre of water supplied to customers)	↓	
Transition Risks (Selected metric for a material risk)	Risk of increased energy costs: annual average price of electricity (£/kWh)	↑	• Purchase 100% renewable electricity by 2022 (SWW) • Up to 50% self-generated renewable energy by 2030.
Physical Risks (Selected metrics for some material risks)	Proportion (%) of customers at risk of sewer flooding in 2050 in a 1-in-50 year storm	↓	
	Proportion (%) of customers currently at risk of severe restrictions in a 1-in-200 year drought	↓	Our 2050 year target will be to achieve 0% of customers at risk of severe restrictions in a 1-in-500 year drought. This is to meet latest Government planning guidance.
Climate-Related Opportunities (Selected metric for a material opportunity)	Amount of renewable energy we've generated (kWh)	↑	Up to 50% self-generated renewable energy by 2030.
Capital Deployment (Selected metric for a material capital investment)	Value (£) of our renewable energy generation capital plans to 2030	↑	
Remuneration	Portion of Executive remuneration linked to ESG outcomes, including climate change	↑	For the FY 2021/22, the majority of Group annual incentive schemes for employees and leadership were amended, reflecting best practice, to incorporate ESG measures. ESG targets will account for 20% of the weighting.
Internal carbon price	The Group is currently exploring the approach and implications of using internal carbon pricing.		

In the adaptation report provided to Defra it shows intolerable levels of risk if left unmitigated. In addition, at least 17 of the top 20 physical climate risks (>60 risks identified) would exceed this threshold by 2080 **without further adaptation**. This signals the need for further investment in climate resilience in future planning rounds.

Our Net zero carbon commitments will provide a step change to how we run our business and look to manage the risks of climate change, an update on our progress during the last year is found in page 39. The metrics and targets associated with this help to show the investment in the area and the planned future investment to meet this goal.

All projects being put forward to the planning committee have a focus on both their carbon impacts and the ESG impacts which will used to manage the decision making process.

Read more:

Mitigating the impact of climate change – page 37

Net Zero – page 39

Streamlined Energy and Carbon Report (SECR) – page 89

Key Achievements and Targets

Continued investment in natural capital schemes	**Comprehensive Biodiversity Strategy and Environment Plan 2050**	**Net Zero by 2030 with our Net Zero Strategy**	**South West Water commitment to 100% renewable energy from 2022**

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