

Our Approach to Climate Change

We are committed to the recommendations of the Task Force on Climate-related Financial Disclosures ('TCFD'), providing our stakeholders with transparent information on climate-related risks and opportunities that are relevant to our business. This is our third disclosure, in full, and an update to what was published in our 2020/21 Annual Report and Accounts ('ARA').

Science Based Targets

We are one of only two water companies in the UK to have verified and approved Science Based Targets ('SBTs') in line with the 1.5°C pathway to reduce absolute Scope 1 and 2 Greenhouse Gas ('GHG') emissions by 46.2% by FY2031 from a FY2020 base year.

2030

We are a signatory to the UN Climate Change Race to Zero campaign, pledging to deliver a net zero water supply for customers by 2030

Triple Carbon Pledge

- Net zero operational carbon emissions by 2030
- 100% energy coming from renewable sources by 2030
- 100% electric fleet by 2030, where available

We seek to put sustainability at the heart of everything we do and this publication sets out our approach to implementing the recommendations of the TCFD, including how we think about governance, strategy, risk management and the metrics and targets which underpin our approach.

Our strategy focuses on the positive impact we can have on the communities we serve and on the environment that we rely on and interact with every day.

Our Sustainability Framework (see page 50 of the 2020/21 ARA or our Sustainability Report) is fully embedded into our overall strategy and draws together our environmental, social and governance ambitions which are delivered as part of our Business Plan.



Board Statement on its Commitment to a 1.5°C Pathway

The Severn Trent Plc Board recognises the undeniable risks from climate change as set out in the IPCC's sixth assessment report and understands the roles that business, government and communities need to play to mitigate and adapt to our changing world. That's why we have set our own Triple Carbon Pledge, of net zero operational emissions, 100% energy coming from renewable sources, and 100% electric fleet (where available) by 2030.

We also now have approved and verified Science Based Targets in line with a 1.5°C pathway (defined as holding temperature rises of no more than 1.5°C above pre-industrial levels). These targets will drive an ambitious reduction in our Scope 1 (direct emissions arising from owned or controlled sources), and Scope 2 emissions (indirect emissions arising from energy purchase). We're now producing over 50% of our electricity needs from renewable sources, have reduced net carbon emissions by 40% since 2015 and invested £350 million in improving a third of the rivers in our region. We're also delighted to have already planted nearly a quarter of the 1.3m trees targeted for 2025 and enhanced biodiversity of over half of the 5,000 hectares of land that we have committed to for 2027.

In January 2021, we signed up to the UN Climate Change Race to Zero campaign, pledging to deliver a water supply for customers that has net zero carbon emissions by 2030. Led by the United Nations Framework Convention on Climate Change ('UNFCCC'), we joined other companies from around the world to rally leadership across businesses, cities, regions and investors for a healthy, resilient and zero carbon recovery. Our net zero scope, definition and journey align with the wider water industry commitment to reach net zero as a sector by 2030. Our Scope 3 emissions (indirect emissions arising within the value chain) make up a significant part of our overall emissions. As such, we have set a Science Based Target to reduce Scope 3 GHG emissions from use of sold products by 13.5% by FY2031 from a FY2020 base year¹ and a target for 70% of our suppliers (by emissions covering purchased goods and services, capital goods, upstream transportation and distribution and waste generated in operations) to have set a carbon target in line with Science Based Target criteria by FY2026.

We will continue to build understanding of our Scope 3 emissions, gain a more accurate and complete picture of our current position, and use this insight to work with and support our supply chain and deliver our targets. The information provided in this section, in conjunction with our wider ARA and separate Sustainability Report (which is signposted throughout), demonstrate how we have embedded climate-related risks and opportunities into our strategy and business model; the progress we're making on our journey; the metrics and targets we have set ourselves over the next several years; and our approach to understanding and mitigating the risks posed. We will continue to evolve and enhance our reporting against the framework provided by the Task Force on Climate-related Financial Disclosures, and we welcome feedback on our approach.

Climate-related Strategy



Overview

Climate change is one of the key challenges our society will face this century and we are well placed to understand the scale of the problem. The water sector is facing significant challenges and will need to ensure resilience against the predicted impacts of increased population growth and climate change, and fulfil our industry-wide pledge to become net zero by 2030, all while continuing to deliver the quality and quantity of water our customers demand at a price they can afford.

Providing water and treating waste water is an energy-intensive process that requires a sector-wide approach, innovation and long-term strategic thinking to ensure that the risks affecting our ability to provide these services are mitigated.

Our strategy to climate change

 As part of our Triple Carbon Pledge, we will ensure that our own direct and indirect operations meet net zero by 2030, as part of the combined UK water sector's net zero 2030 road map. This gives us and the rest of the sector a shared goal. We've also committed to reduce absolute Scope 1 and 2 emissions by 46% (from a FY2020 base year) by 2031, which includes working with our suppliers to measure and reduce emissions along the value chain.

- 2. We will play our part in the UK's Green Recovery and contribute to a clean energy system.
- 3. We will maximise the benefits from mitigating and adapting to climate change through our role as a major land owner. From FY 22/23 we are applying a carbon tax of £18 / tCO $_2$ e to each of our directorates' budgets. As well as encouraging GHG reduction, this contribution will generate a fund we will use to invest in new ideas and innovations to achieve our net zero target (the pricing is broadly in line with BEIS assumptions and will be reviewed annually). In addition, Capital Delivery schemes will build a carbon cost into their business case assessment, using the central government shadow price of carbon each year, to inform full life cost decisions.

Over the next 25 years, we anticipate a period of increased investment across the sector to build a more resilient and flexible infrastructure that can cope with greater overall demand and volatility, and lessen our impact on the natural environment.

Severn Trent Plc

Climate-related Governance

Our Sustainability Governance Framework

Our governance processes are aligned with the Group's Sustainability Framework to ensure we are a company you can trust. This means the Board being effective in its oversight of the Group's Sustainability Framework; consideration of climate-related risks and opportunities; and scrutiny of management's assessment and management of climate-related risks and opportunities.

The Board delegates certain sustainability and climate-related risk oversight activity to its Board Committees to support the continued delivery of the Group's Sustainability Framework. Detail is provided on the following page, including cross-reference to where you can find additional information in our ARA and in our Sustainability Report.

Severn Trent is committed to making decisions for the long-term that add value for our customers, the communities we serve and the environment, and treating all of our employees and other stakeholders fairly. This means we work to achieve our outcomes in a sustainable way – be it through taking care of the environment, helping people thrive or being a company you can trust. This is integral to the way we operate.

Addressing the challenge of climate change is core to our strategy and is therefore at the centre of many Board considerations and its decision-making throughout the year. This requires robust governance to empower business areas in the management of climate-related risks and opportunities. This extends below the Board to a number of management committees and our TCFD working group, as shown in the infographic on the following page.



Sustainability Governance Framework

Strong governance of sustainability issues, including over climate-related risks and opportunities specifically, extends below the Board to a number of Board and management committees, as outlined below. Read more on page 59 of our 2020/21 ARA.

THE BOARD

The Board's role is to ensure the long-term sustainable success of Severn Trent by setting our strategy through which value can be created and preserved for the mutual benefit of our shareholders, customers, employees and the communities we serve. The Board, led by our Chair Christine Hodgson, has ultimate responsibility for sustainability. Oversight of the Group's sustainability strategy is a matter reserved for the Board. The Board provides rigorous challenge to management on progress against goals and targets, and ensures the Group maintains an effective risk management and internal control system, including over climate-related risks and opportunities.

Sustainability-related discussions take place at all Board meetings and the Chair of the Corporate Sustainability Committee provides a detailed update on sustainability matters at every Board meeting, through a standing agenda item. The Board possesses a high level of sustainability expertise, with individual Directors possessing a variety of skills and experience relating to areas such as environmental science, climate change and social responsibility.



Corporate Sustainability Committee

Meeting frequency: At least four times per year

Supports the Group's sustainability strategy by scrutinising progress and providing guidance and direction to the Sustainability Framework.

Responsible for reviewing the Group's non-financial risks and opportunities. including climaterelated risks.

Three members of the Board sit on the Committee, including the Chair, and the CEO has a standing invitation to attend meetings.

Nominations Committee

Meeting frequency: At least four times per year

Supports the Group's sustainability strategy through monitoring the Board's overall structure, size, composition and balance of skills.

Sustainability expertise is given sufficient prominence in Board succession planning and recruitment activity.

Sustainability expertise is listed as a key skill for Board appointment long-lists in our selection processes.

THE BOARD DELEGATES CERTAIN SUSTAINABILITY OVERSIGHT MATTERS TO ITS PRINCIPAL COMMITTEES **Remuneration Committee**

Meeting frequency: At least four times per year

Supports the Group's sustainability strategy through alignment of the Group's remuneration policies and procedures to reinforce achievement of our sustainability aims.

In addition to ESG measures which already form part of the annual bonus scheme metrics, this year the Committee has agreed the development of a carbon reduction performance measure in the LTIP (in addition to the existing RoRE measure).

Treasury Committee

Meeting frequency: At least four times per year

Supports the Group's sustainability strategy through incorporation of sustainability into the Group's financing strategy.

A key area of focus for the Treasury Committee has been the recent introduction and subsequent monitoring of our Sustainable Finance Framework, under which the Group can raise debt to support the financing and/or refinancing of assets and expenditures of a sustainable nature

Audit and Risk Committee

Meeting frequency: At least four times per year

Supports the Group's sustainability strategy through ensuring that risk is effectively managed across the Group, including climate-related risks and opportunities.

The Committee is also responsible for overseeing the Group's financial statements and nonfinancial disclosures. including climate-related financial disclosures

THE CHIEF EXECUTIVE AND THE SEVERN TRENT EXECUTIVE COMMITTEE ('STEC')

The Chief Executive has overall responsibility for climate change and environmental matters. Responsibility for the development and implementation of the Group's strategy, including in relation to sustainability, rests with the Chief Executive, who is supported by STEC.

STEC DELEGATES CERTAIN CLIMATE-RELATED RISK AND OPPORTUNITY OVERSIGHT MATTERS TO ITS MANAGEMENT COMMITTEES

Sustainability Steering Committee

Facilitated by Severn Trent's dedicated Sustainability Team. Executive and senior management oversee performance and progress against our Sustainability Framework.

The Committee is responsible for identifying and reviewing climaterelated risks and opportunities.

Energy Steering Committee

Sets the Group's overall energy strategy and targets, ensuring that robust plans are in place to deliver them. Monitors progress and performance against plans.

Strategic Risk Forum

A cross-business group which takes a holistic view of ERM risks and focuses on horizon scanning to identify new and emerging risks, including climaterelated risks.

Disclosure Committee

An Executive Committee responsible for overseeing the Group's compliance with its disclosure obligations, considering the materiality, accuracy, reliability and timeliness of information disclosed and assessment of assurance received

The Committee is also responsible for overseeing the Group's financial statements and nonfinancial disclosures, including climate-related financial disclosures

TCFD Working Group

The TCFD working group was established in 2020 to provide oversight and drive implementation of the TCFD recommendations and the Group's wider climate change strategy.

The Group reports to the Severn Trent Executive Committee Disclosure and the Severn Trent Corporate Sustainability Committee. It includes representatives from business areas including strategy, risk. finance, treasury and compliance.

Risk Management – Our risks, mitigating activities, and associated opportunities

How we identify and understand risks from climate change

The impacts of climate change are closely linked to many of the key risks of our business. We have undertaken a review during the year to assess how our overall risks are driven by a range of climate impacts. We operate a well-established Enterprise Risk Management ('ERM') framework, underpinned by standardised tools, practices and risk management methodologies to ensure consistency across the Severn Trent Group. It is implemented through the business at a number of levels, with different groups exploring and examining risks through various lenses, and the recently formed Strategic Risk Forum ('SRF') provides a crossbusiness holistic view of ERM risks, challenging the existing risk

landscape as well as identifying new and emerging risks, including climate-related risks. The Board has overall responsibility for ensuring that risk is managed effectively across the Group and that there is an effective risk management framework in place.

Management of climate-related risks is embedded in our everyday business activities and aligns with the way we approach all other Company risks through our ERM framework. Our specific approach to managing climate-related risks is shown below, highlighting how we think about climate-related risks over differing time horizons.

Managing climate-related risks

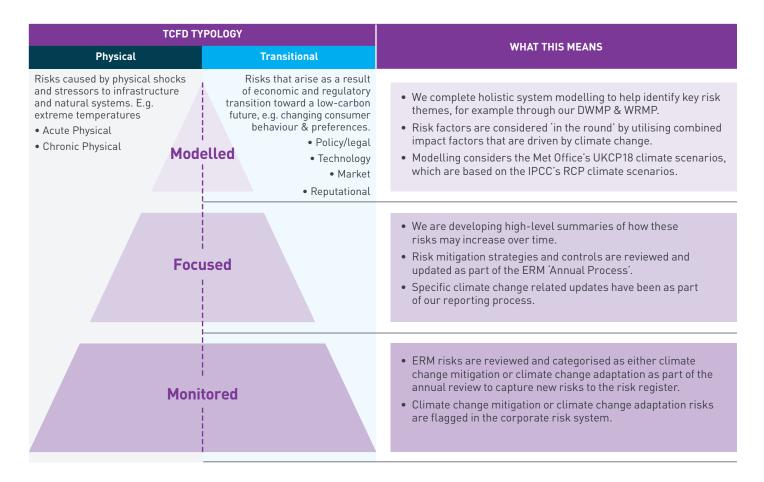
MANAGEMENT CATEGORY	Tactical response	Regulatory review & engagement	Strategy
TIME HORIZONS	0 – 2 years	Up to 5 years (with considerations for up to 25 years)	Up to 25 years
SUMMARY	 Implementing tactical response plans for delivery of our annual performance targets in the face of acute physical risks Evaluate and make recommendations for future improvements 	Our business plan describes the improvements that we will commit to deliver in the next Asset Management Plan ('AMP') cycle	 Long term plans exploring & accounting for the future potential risks we may face, including climate change uncertainty How we will meet future challenges, and the steps that need to be considered
APPROACH TO MANAGEMENT	 Incident Management plans & Process Driven response plans Drought Plan (triggers optimised and aligned with WRMP) Root Cause Analysis outputs Localised response strategies ERM Framework 	 Regulator approved Asset Management Plan investment approach Rolling 5-year Business Planning approach ERM Framework 	Water Resources Management Plan ('WRMP') produced every five years Drainage and Waste water Management Plan ('DWMP') – first full publication due 2022/23 ERM Framework
KEY ELEMENTS	 Undertake a granular and dynamic appraisal of the health of our assets Data collection to drive longer term approach Assess operational tasks / operation & maintenance of assets Localised delivery of improvement plans Small scale OPEX & CAPEX spending Asset Health Dashboard 	 Engagement with key stakeholders to agree response plans including EA, Ofwat and local communities Modelling of scenarios to determine response strategies Capital investment & promotions for delivery of large-scale capital upgrades 	Considers the potential long-term impacts of climate change on our essential services Analysis of longer-term trends utilising UKCP18 datasets combined with internal modelling Data-focused review through technical assessments and modelling Risk strategies
FEEDBACK	 	Continuous review and feedback	\

Severn Trent Plc

Integrating climate-related risks within our ERM system

We have reviewed all our existing risks to consider the interaction of climate-related risks with our overall risk management and concluded that our risk management system incorporates important climate-related risks. TCFD typology has been assigned to these risks and key causes were assessed where the likelihood could be exacerbated by climate change drivers.

We have developed a three-tiered system which we will use to ensure appropriate actions given the relative risk to the enterprise.



What are our key climate-related risks and opportunities?

Several of our key risks are highly sensitive to the physical impacts of climate change. The two risks most vulnerable to climate change are our ability to supply drinking water and our ability to take away waste water, and hence these have been quantitatively modelled as described in our 'Physical risks scenario analysis' on page 10. In addition, as a highly regulated water utility, transition risks and most particularly changes to the political and regulatory environment, are likely to have a significant impact on the way that we operate.

Our ability to mitigate and adapt to climate change will also impact upon our reputation and upon our attractiveness to investors. The following table shows detail on our key risks and opportunities and whether they are modelled or focused risks.



RISK AND OPPORTUNITY	DRIVERS AND CAUSES	IMPACT ON BUSINESS (RISK CONSEQUENCES)	RISK MITIGATIONS / METHODS TO REALISE OPPORTUNITIES
ACUTE AND CHRONIC PHYSICAL RISKS			
Key Risk			
Failure to provide a safe and secure supply of drinking water to our customers and the potential for reduced public confidence in our water supply Short-, medium- and long-term (modelled)	Increased population will increase demand Chronic higher temperatures, hotter, drier summers, and increased frequency and intensity of droughts will increase demand and reduce water availability Acute physical risks such as storms and floods may impact upon our infrastructure, or increase the risk of water contamination	Impacts our financial penalty/reward position Additional operational costs to ensure delivery Additional infrastructure investment to secure supply	Comprehensive resilience plans such as our Water Resources Management Plan (WRMP) and Drainage and Waste water Plan (DWMP) feed into our capital investment programme and Business Plan Strategic modelling to assess potential changes to supply and demand on our water network and the impact of climate change
Linked Opportunities	'	'	'
Minimising water usage and leakage Enhanced consumer awareness New technology	Regulatory requirements could drive down water use Increased awareness over the value of water in an increasingly resource-stretched world may improve the effectiveness of customer engagement programmes The implementation of new technology and innovation will improve network operations and detect leaks	Increased headroom available to meet water demand Enhanced reputation with customers Reduced infrastructure requirements	Educational programmes to reduce water usage Leakage reduction programmes including early leak detection technology
Key Risk			
Failure to effectively transport and treat waste water and the potential for reduced public confidence in our waste water system (modelled) Short-, medium- and long-term (modelled)	Increased population and land cover leading to increased runoff More intense bursts of rainfall increasing volumes of water to waste water systems Additional demands on waste water systems and increased risk of flooding both to properties and the environment Potential damage to infrastructure	Impacts to our financial penalty/reward position Environmental penalties Alternative actions to ensure safety of waste water removal Additional infrastructure investment to ensure adequate systems	Comprehensive resilience plans such as DWMP feed into capital investment programme and Business Plan Strategic modelling to assess potential changes to population and climate change on our waste water network
Linked Opportunities			
• Enhanced consumer awareness • New technology	Increased awareness over the value of water in an increasingly resource-stretched world may improve the effectiveness of customer engagement programmes The implementation of new technologies and innovation to improve our water treatment processes and network operations will enable us to meet or exceed targets	 Reduced pressure on waste water network Reduced infrastructure requirements Enhanced reputation with customers 	Educational programmes with customers to promote safe use of the waste water system, including appropriate disposal of wet wipes and cooking fat
Key Risk			
As significant landowners, we fail to positively influence natural capital in our region Medium- and long-term (focused)	Increased precipitation may increase the risk of agricultural runoff and sewer overflows, leading to pollution of the waterways Human impacts of a growing population and increased pressure on natural resources may impact upon biodiversity and our ability to manage natural resources effectively	Impacts to our financial penalty/reward position Changes to valuation of natural capital may have financial impacts in future periods Pollution events may result in fines or penalties Investment required in resilient solutions	Commitments to protect our local environment Modelling to estimate the impact of increasing pressures on nature such as abstraction and environmental pollution as part of our WRMP and DWMP
Linked Opportunities			
 Adopting a catchment management approach will be more inclusive, reduce costs and the need for additional investment Improved resilience and river quality Addressing and enhancing biodiversity and eco-system services Engagement with supply chain 	Strong engagement with our supply chain and customers will promote biodiversity and effective use of our redundant land to lead the way in our region	 Reputational benefits acting as steward of natural capital Intangible benefits of natural capital 	 Strategic plans to enhance biodiversity in our region A catchment management approach with landowners in our region to mitigate the effect of pesticides, fertilisers and organic nutrients Extensive in-house ecology expertise to enhance the Group's capability to work towards enhancing biodiversity
LEGAL AND REGULATORY RISKS			
Key Risk			
Accelerating changes in the political, legal environment and environmental obligations increase the risk of non-compliance Short-, medium- and long-term (focused)	 Highly regulated sector with KPIs set by Ofwat Increased focus on environmental protection/enhanced climate mitigation targets could change the regulator's target-setting approach National regulatory changes around costs of carbon (our operations are energy intensive and the waste we deal with has a high GHG impact) 	Changes to penalty/reward position Increased risks of fines from environmental risk events (e.g. flood events) Increased costs associated with carbon emissions	Strong engagement with our supply chain to drive environmental leadership Ongoing engagement with the UK Government, MPs, the Welsh Government, regulators and other stakeholders about the future shape and direction of the water sector Our established governance framework, policies and training ensuring our ongoing compliance with all applicable laws and regulations.
Linked Opportunities			
Engagement with regulators and potential funding to address impacts from climate change	Opportunities to fast-track positive changes alongside regulatory change for our communities and the environment	Readiness for legal and regulatory changes	Control frameworks are subject to regular review, on at least an annual basis, to take into account changes to legislation and regulation External legal advisors provide detailed reviews in respect of upcoming legislation that may affect the Group

8 Severn Trent Plc

Understanding the impact

Our approach to understanding physical risks from climate change

Climate-related scenario analysis helps us to understand the potential impact of climate change on our business to inform our strategy and financial planning. We undertake scenario modelling against the two risks that are of potentially greatest vulnerability to climate change: our ability to provide water when it is needed and our ability to take waste water safely away. This forms part of our WRMP and DWMP respectively.

Whilst the climate models applied are bespoke and tailored for the specific risks assessed, the range of climate scenarios considered broadly align with the future worlds considered within the WWF Water Risk Filter Scenarios outlined below, with the physical risks assessed in line with the "pessimistic" world view, and the transition risks assessed in line with the "optimistic" and "current trend" world views.

Our bespoke assessments consider a range of climate models as outlined below.

We also consider how different levers of change may impact upon our ability to provide services in developing our Strategic Direction Statement.

OPTIMISTIC SCENARIOS	CURRENT TREND SCENARIOS	PESSIMISTIC SCENARIOS
The optimistic scenarios represent a world with sustainable socio-economic development (SSP1) and ambitious reduction of GHG emissions (RCP2.6/RCP4.5) leading to an increase of a global mean surface temperature of approximately 1.5°C by the end of the 21st century.	The current trend scenarios represent a world similar to current socio-economic development trends (SSP2) and intermediate GHG emission levels (RCP4.5/RCP6.0), leading to an increase of global mean surface temperature of approximately 2°C by the end of the 21st century.	The pessimistic scenarios represent a world with unequal and unstable socio-economic development (SSP3) and high GHG emission levels (RCP6.0/RCP8.5), leading to an increase of global mean surface temperature of approximately 3.5°C by the end of the 21st century.

Physical risks scenario analysis

Key outputs from our modelling looking out to 2050

The table below provides a summary of the assessments carried out to date, but does not take into account the regional complexities, bespoke investment decisions and collaboration with wider agencies and water bodies. A full analysis of the problems we face and the solutions to address those problems will be issued as part of our WRMP and DWMP in 2022. The case study on p11 shows in more detail our approach to modelling.

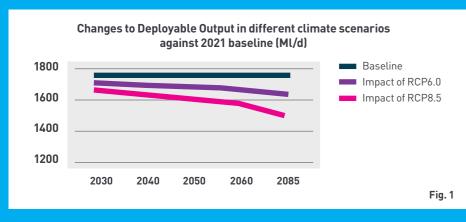
	OUTCOMES AFFECTED					
	Water alv Good t	Waste taken away				
	Risk	Opportunity	Risk			
Key risk	Failure to provide a safe and secure supply of drinking water	Minimising water use and leakage	Failure to effectively transport and treat waste water			
Climate driver	Hotter, drier summers and changes to precipitation will reduce water availability and the amount of water available for distribution	Regulatory commitments to reduce leakage	Increased rainfall and intensity of rainfall increases risk of sewer flooding, runoff and the amount of waste water needing treatment			
Climate model	RCP6.0, RCP8.5 and 32 climate-related scenarios reflecting the different UKCP18 climate model outputs	We have made a commitment to reduce leakage by 15% by 2025 and 50% by 2045. In addition, we have a number of water use minimisation programmes which are incorporated into our future modelling, to ensure we understand how the benefits of these programmes may protect us against climate-related risks.	As part of our DWMP assessments we have used industry derived rainfall uplifts for 2050s based on RCP8.5 as indicated by the Met Office Hadley Centre, as well as sensitivity analysis using RCP 6.0, to align our work with that for the WRMP. Across our region we have modelled present day flood risk during one in 10-year, 30-year and 50-year rainfall events (i.e. a rainfall event with a 10%, 3.3% or 2% probability of occurring in a year). We then use rainfall uplifts derived from climate change projections to understand how the future climate is likely to affect rainfall intensities			
Timeframe assessed	Current modelling is to 2070s and then extrapolated to 2100	Current modelling is to 2070s and then extrapolated to 2100	Current modelling is to 2050, the below impact looks at a 2050 snapshot			
Key outputs from modelling work	Modelling indicates a reduction in the amount of water available for distribution (Deployable Output 'DO'). In 2050, the expected reduction of DO is: • 4% in a RCP6.0 climate scenario • 9% in a RCP8.5 climate scenario	Our water demand mitigation proposals will help reduce the total amount of water we abstract. Our two key programmes (customer demand and leakage reduction) are expected, by 2050 to: • reduce demand by 6% • reduce leakage by 8% from our distribution system	Our modelling suggests that there will be increased risk of sewer flooding in 2050. The increased likelihood (probability of a flood event) of sewer flooding in 2050 is expected to be as follows: Increased risk of flood in the event of a 1 in 10 year storm: 41% Increased risk of flood in the event of a			
Key impacts	Key financial impacts include increased remediation and investment needs, and enhanced capital spend, which will be outlined in detail in our WRMP	Key financial impacts include an increased overhead in the water available for distribution, reducing the amount of investment and capital required to ensure a consistent supply of water	1 in 30-year storm: 38% Key financial impacts include increased remediation and investment needs, and enhanced capital spend, which will be outlined in detail in our DWMP			

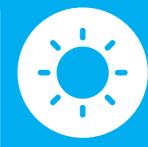
10

Case study - Results of quantitative modelling

Hotter, drier summers

Hotter, drier summers will have a significant impact on future water availability when compared to 2021 water availability (see below graph for an indication of how water availability (otherwise known as deployable output) will reduce in RCP6.0 and RCP8.5 to 2085) [Fig. 1].





Different regions may also have particular attributes that make them more or less sensitive to climate – we also therefore carry out sensitivity analysis (on central estimates of Climate Change) looking at the impacts of the wettest and driest weather on Climate Impacted Deployable Output. As you can see from Fig. 2, our region will become progressively more sensitive to the driest weather conditions over time.

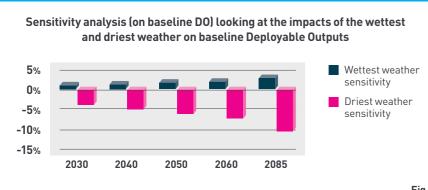
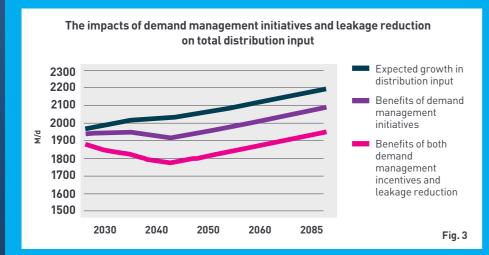




Fig. 2

Our regulatory commitments to reduce leakage and water consumption do however, help to provide us with additional headroom to increase water available for supply.

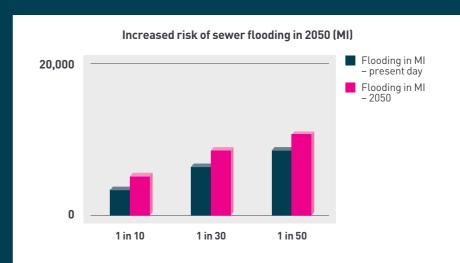




Changing precipitation

Traditional climate models such as UKCP18 look more at seasonality changes over time, and so further analysis is needed to determine sub-daily uplifts to assess impacts of summer extreme rainfall events to assess sewer flooding and storm overflow performance.

If our entire region was subject to one in 10-year, 30-year or 50-year rainfall events (i.e. a rainfall event with a 10%, 3.3% or 2% probability of occurring in a year) our hydraulic sewer models provide an indication of the volume of spills that could escape from our sewers. We then use rainfall uplifts derived from climate change projections to understand how the future climate is likely to affect rainfall intensities. The graph below shows the increased volumes of water that could be expected in 2050 as a result of climate impacts, population changes and changes to land use.





It is important to consider the influence of inlet capacity restrictions (i.e. road gully and roof drainage) which can limit the amount of water that enters our systems. To reflect this, the most intense storms we model are a 1 in 50-year storm (rather than the 1 in 1000-year storms which are more often associated with extreme river flood events).

Find out more – published in:

WRMP

Severn Trent's Water Resources Management Plan will be published in Summer 2022 and will set out our approach for ensuring an effective water supply network which is resilient against the impacts of climate change.

DWMP

Severn Trent's DRAFT Drainage and Waste water Management Plan will be published in June 2022, with the final DWMP due for publication in March 2023. The DWMP will set out our approach to ensuring an effective waste water network which treats and removes waste from properties, and which reduces the likelihood of sewer flooding.



Transition risk scenario analysis

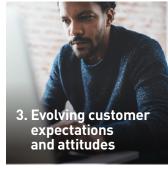
During 2021 we are refreshing our Strategic Direction Statement ('SDS'), which was last published in 2007. As part of this process, we investigated which trends we believed would be most influential in shaping the next 30 years and considered different alternate visions for how 2050 might look. These alternate visions considered how the key levers of change (technological, behavioural, and regulatory)

may develop and broadly covered a range of warming outcomes between 1.5°C and 4°C by 2050. These visions were used to ensure consistent interpretation of trends and understand how our priorities and level of ambition might differ if alternate scenarios were to occur.

8 Key trends

















By looking at trends and different levers of change, we built a picture of the stressors that may arise in a low-carbon transition, looking out to 2050. This allowed us to identify the most important challenges which we would face in an optimistic and current-trend scenario. Additional challenges (such as population growth, reduced water availability, more extreme weather and affordability are discussed as part of the SDS). Those of most relevance from a climate perspective are outlined below.

Concern about climate will drive a shift in attitudes towards the environment

Our customers will look for us to inform and support their endeavours to use less water and make it cheaper to be more environmentally friendly. We will need to adopt more innovation, more principles of the circular economy and reduce the impact of effluent returned to the environment. We will need to ensure we make the best use of our land and improve natural capital.

Combating climate change could lead to more regulation and policy interventions

We will need to be prepared for more stringent laws, regulations and standards centred around environmental matters. We will need to ensure resilience around changes to carbon taxes and ensure readiness to act with nature-based solutions or new markets (hydrogen, carbon).

Mitigating climate change will require rapid decarbonisation

We will need to focus our efforts to reduce our total annual operational emissions from 102,113 tonnes CO_2e to zero through using less carbon and finding renewable energy alternatives.

Resilience of our approach

In our SDS, we identify priority areas for our business which we believe are key to delivering for our customers, ensuring resilience against the challenges of the future, and fulfilling our wider environmental and societal goals. Our Sustainability Report, net zero ambition, SDS and ARA outline a whole host of activities being undertaken to ensure we succeed in our eight priority areas. Further information can also be found in our Environmental Plans and Social Plans.

Find out more

A consultation document on our Strategic Direction Statement will be published by the end of 2021 and will outline more detail on how we intend to respond to these challenges.

Climate-related Metrics and Targets



Measuring our progress

We measure and manage a wide range of metrics which help us assess how well we are doing to minimise our risks in a changing future. These include a range of metrics that measure our ability to provide and take away water, our influence and impact on natural capital, our adaptation measures and any changes in the regulatory environment. These are reported annually in our Annual Performance Report which provides a transparent assessment of our performance. Further information on the time-specific and

quantitative targets can be found within our 2021 Annual Performance Report. Our metrics go above and beyond what the Sustainability Accounting Standards Board ('SASB') recommends, and the table in the Appendix shows how our measures map across.

More detail around how our reporting maps to the recommendations of SASB can be found within our Sustainability Report (p.72).

Mitigating climate change – reducing our Greenhouse Gas ('GHG') emissions – measuring our progress

Scope 1, 2 and 3 targets¹

We have committed to achieving net zero operational carbon emissions by 2030 (Scope 1 and 2), building on our long track record of making year-on-year reductions in our emissions. We have also set Science Based Targets which include a commitment:

- to reduce absolute Scope 1 and 2 GHG emissions by 46.2% by FY2031 from a FY2020 base year
- to reduce absolute Scope 3 GHG emissions from use of sold products 13.5% by FY2031 from a FY2020 base year²
- for 70% of our suppliers (by emissions covering purchased goods and services, capital goods, upstream transportation and distribution and waste generated in operations) to have set a carbon target in line with Science Based Target criteria by FY2026

Our operational reduction is in line with a 1.5°C temperature rise scenario.

We have held the Carbon Trust Standard continuously since 2009, which recognises our consistent emissions reductions and effective carbon management processes. We continue to report to the Carbon Disclosure Project ('CDP') each year which means our climate change information is publicly accessible. CDP requests information about climate change from companies on behalf of investors and scores each company on the quality and completeness of responses. This year, we are disclosing more information about our GHG emissions and energy use, greater detail on our key risks and opportunities, and our Scope 3 data going beyond the mandatory requirements and including supply chain emissions for the first time.

- ¹ SBT criteria do not allow for the use of offsets or the net benefit of exported renewable energy, both of which will be used to reach our net zero 2030 commitment.
- $^2 \quad \text{The target boundary includes biogenic emissions and removals from bioenergy feeds tocks}$

Our key emissions areas

Our top 5 challenges across scope 1, 2 and 3 emissions are

Supply chain emissions

While we do not control our supply chain, we can influence it to change and find solutions. For example, at present we need chemicals to treat water to meet drinking water standards. We must work with and support our supply chain to innovate and find zero-carbon ways of manufacturing and delivering these chemicals or find alternatives in order to achieve zero-carbon treatment processes.





Process emissions

Emissions of nitrous oxide and methane from waste and sludge treatment are now our largest source of GHG emissions. There are currently no feasible or affordable alternatives to our current method of treatment and capturing will be expensive.



Biogenic emissions

 ${\rm CO_2}$ is produced from sewage treatment, the combustion of biogas and the production and combustion of biomethane. Currently, we estimate but don't report these emissions because the equivalent carbon is taken in by the food grown which ultimately becomes the waste we treat and they are therefore 'short-cycle' emissions.



Offsets

By 2030 it is unlikely we will avoid all current emissions and an element of balancing through offsets will be necessary. Our first priority in this instance will be to utilise the resources we have to sequester carbon with nature based solutions and increase our renewable energy capacity generating local and credible offsets. If necessary, we will then explore further offsetting opportunities.

Beyond 2030, In order to achieve zero carbon in the long term, carbon removal technologies will need to be available on the market which are not currently affordable or feasible



Market

For some areas of our work, there are no feasible alternatives or technology readily available on the market. Where we can't develop the solutions alone, we need markets to innovate, adapt and make these available so we can find the best way to adopt the solutions.

Our key emissions (scope 1 and 2) areas are



11% from the fuel to power vehicles

Changing to electric vehicles will be key to eliminating our emissions. All new company cars will now be electric and we have begun to replace our vans. Electric HGVs and tankers may not be available by 2030, so we are looking into alternative low-carbon options such as hydrogen and biogas. We are installing over 350 charging points over 65 sites, which will be completed by the end of 2021. We continue to join global and UK industry partnerships to both learn from and support other companies with a similar approach for their fleets. We encourage efficient driving, eliminating unnecessary journeys, and have launched a scheme to encourage employees to switch to electric vehicles.

We are transitioning our fleet from fossil fuels to electric vehicles with the aim of 100% by 2030, where available. 5% of our company cars are now electric and we continue to deploy more dedicated site charging points.



18% emissions from on-site fossil fuel use

We will appraise options and invest to replace fossil fuels before offsetting any remaining emissions. For example, we use diesel generators and gas oil in our anaerobic digestors. Alternatives could include use of biofuels, ground-source and solar-thermal heating and green hydrogen to replace diesel.

We reduced net operational emissions by 61% during 2020/21, largely due to using renewable sourced electricity. We generate equivalent to over half of the electricity Severn Trent Water uses, from our own renewable assets, which include anaerobic digesters, and solar, wind and hydro-power plants.

By 2030, we have the potential to cover 100% of our electricity needs from our own renewable sources or through Power Purchase Agreements that provide capital for new projects while guaranteeing stable future energy prices.



Energy Efficiency

We continually invest in improving energy efficiency and we have a dedicated Energy Management Team focused on driving operational change to reduce energy. This is supported by a network of energy champions across our business, overseen by an Energy Steering Group.

We have invested £5.6m over 2020/21 and £26m over the last six years in energy efficiency. This includes proactive maintenance on our energy-intensive assets, such as pumps and air blowers, and investment in improved controls and monitoring to reduce energy use.

To reduce our operational emissions further we will continue to focus on improving our energy efficiency to offset the additional demands of a growing population.



71% emissions from waste and sludge

Methane and nitrous oxide emissions from our sewage and sludge treatment processes make up 71% of our direct emissions, and have respectively 28 and 265 times higher global warming potential than CO_2 over a 100-year period. Emissions from waste water treatment represent 1.3% of all anthropogenic emissions.

This issue is one of the major challenges in our path to net zero and requires new science, technology and innovation to understand and solve. Minimising unintended escapes of biogas, and making improvements to processes, would improve the figures only slightly. To make significant headway, we need deeper technological innovation, as well as changes to future asset design and strategy. We are establishing our options, often in partnerships, based on impact, cost, likelihood and timing, with many innovations and solutions not yet ready for full-scale deployment.

More information about the activities can be found within the Journey to net zero (see pages 54 to 55) and Carbon and Energy Performance (see pages 65 to 67) sections of the 2020/21 ARA, and within our 2020/21 Sustainability Report. Details of how sustainability-focused performance measures are included in our LTIP can be found on pages 123 and 131 of the 2020/21 ARA.

15 Severn Trent Pic Severn Trent Pic

Greenhouse Gas Performance

2020/21 is the eighth year Severn Trent has been required to report GHG emissions. For Severn Trent Water, which accounts for 93% of our total Group emissions, we have been publicly reporting on our emissions since 2002. For the second year, we are also reporting our energy use and generation data and provide more detail on how we manage energy use.

Our GHG emissions are reported in tonnes of carbon dioxide equivalent (tCO $_2$ e), for the period 1 April 2020 to 31 March 2021. We report our location-based and market-based emissions separately and for the first time we also report on five Scope 3 categories – goods and services, capital goods, waste generated in operations, business travel and upstream transportation and distribution. We will disclose more of our Scope 3 emissions from next year, in line with our new SBTs.

The GHG data we report is reported internally during the year to the Corporate Sustainability Committee and to the Board. We have subjected our GHG data and processes to external assurance by Jacobs.

Our approach to reporting is subjected to the GHG Protocol Corporate Accounting and Reporting Standard. In Scope 1 and 2, we have included the emissions from the assets which we own and operate and which we can directly influence and reduce, known as the

financial control boundary. Emissions from our supply chain and from assets which we do not own but operate on behalf of others are included in our Scope 3 category. We have now baselined our Scope 3 emissions and this year we report on Scope 3 emissions from business travel, energy transmission and distribution losses and outsourced sludge tanker activity as part of our operational footprint. These are areas where we have robust data collection processes already. We report on emissions from our other Scope 3 categories in a separate table. We are collecting more data on the remainder of our supply chain and will report on more of our Scope 3 emissions next year.

For our net operational carbon footprint, we include the benefit of renewable electricity which we export and also a carbon benefit from the biomethane we export to the grid, but only where we have not sold an associated green gas certificate. Where we have sold a green gas certificate, we do not include the carbon benefit in our net number overleaf.

Our emissions are calculated using the updated 'Carbon accounting in the UK Water Industry: methodology for estimating operational emissions, Version 15' (released April 2021). This is a peer-reviewed calculation tool developed and used by all the major water companies in the UK. It is updated each year to include the latest available emissions factors. All emissions arise in the UK.



Annual Operational Emissions – Location and Market Based

	2020/	'21	
Operational Greenhouse Gas Emissions (Tonnes CO ₂ e)	Location based	Market based	
Scope 1 Emissions (Combustion of Fossil Fuel on Site)	29,945	29,945	
Scope 1 Emissions (Process Emissions)	116,257	116,257	
Scope 1 Emissions (Transport Fleet)	17,914	17,914	
Scope 2 Emissions (Electricity Purchased for Own Use)	182,768	1	
Scope 3 Emissions (Business Travel)	343	343	
Scope 3 Emissions (Outsourced Sludge Tankers)	3,340	3,340	
Scope 3 Emissions (Electricity Transmission and Distribution)	15,718	-	
Total Annual Gross Operational Emissions	366,285	167,800	
Emissions benefit of the renewable electricity we export	40,648	40,648	
Emissions benefit of the renewable biomethane we export (for which we retire green gas certificates)	21,354	21,354	
Total Annual Net Operational Emissions	304,282	105,797	

Supply Chain Emissions

The table below shows our estimated Scope 3 emissions which are not included as part of our operational footprint. These emissions are part of our new SBTs. We will be disclosing more data on these areas in future. Our primary source of emissions is capital work and we have developed a tool to estimate carbon from capital schemes which we will be using in future to estimate emissions impacts and use in decision making.

Other Scope 3 Greenhouse Gas Emissions (Tonnes CO ₂ e)			
Chemicals purchased (2020/21 volumes using Carbon Accounting Workbook)	52,783		
Upstream Well to Tank Emissions from Gas and Fuel Use (2020/21 volumes using Carbon Accounting Workbook)	8,715		
Capital Goods (2019/20 Baseline Estimate)	250,546		
Other Purchased Goods and Services (2019/20 Baseline Estimate)	107,927		
Upstream transportation and distribution (2019/20 Baseline Estimate)	17,140		
Disposal of waste generated in operations (2019/20 Baseline Estimate)	6,440		

Operational Greenhouse Gas Emissions – Historic Trend

This table shows our historic emissions data alongside the current year in a comparable format to demonstrate our reduction trend. This also shows our total Scope 1 and 2 emissions normalised by total Group revenue.

O	nerational	Greenhouse	Gas Emissions
_	pei ationat	OI CCIIIIOU3C	Odd Ellilddiolid

(Tonnes CO ₂ e)	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21
Scope 1 Emissions (Combustion of fuel and operation of facilities)	132,535	132,406	134,584	138,131	134,307	132,360	156,014	164,115
Scope 2 Emissions (Electricity purchased for own use)	330,679	357,756	337,028	294,426	279,393	217,726	199,635	182,768
Total Annual Gross Operational Emissions	463,214	490,163	471,612	432,557	413,700	350,086	355,649	346,883
Emissions benefit of the renewable energy we export (including biogas for which we hold green gas certificates)	21,672	38,878	45,085	42,069	45,333	46,986	59,878	62,003
Market-based carbon accounting benefit from supply of REGO*-backed renewable energy	_	_	_	_	_	34,818	35,784	182,768
Total Annual Net Operational Emissions	441,542	451,285	426,527	390,488	368,367	268,283	259,987	102,113
Annual GHG intensity ratio (tCO ₂ /unit)	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21
Gross Location-Based Operational GHG emissions of Severn Trent per £m turnover	260.8	277.1	259.5	237.0	244.2	198.1	192.9	190.0

 $[\]ensuremath{^{*'}}\ensuremath{\mathsf{REG0'}}$ – Renewable Energy Guarantees of Origin scheme.

Further work is underway on our ongoing assessment of our Scope 1 and Scope 3 emissions, which we will continue to report on annually in our ARA.

Appendix

KEY:

WRMP: Water Resources Management Plan
DWMP: Drainage and Waste water Management Plan
ARA: Annual Report and Accounts
APR: Annual Performance Report
SR: Sustainability Report

SUSTAINABILITY ACCOUNTING STANDARDS BOARD STANDARD		EQUIVALENT REPORTING	LOCATION OF REPORTING	DESCRIPTION OF REPORTING
Energy Management	1)Total energy consumed, (2) percentage grid electricity, (3) percentage renewable	1)Total energy used 3) Electricity generated from renewable sources and used on site; Biogas generated and combusted on site	ARA	We report on the change in energy usage expressed in GWh over three years from a 2018/19 baseline
	Water main replacement rate	Length of new mains requisitions, Length of new mains - SLPs	APR	We report on our water main replacement rates expressed as a percentage
Distribution Network		Leakage	APR	Our reporting considers the percentage reduction of three year average leakage in megalitres per day (Ml/d) from the 2019-20 baseline
Efficiency	Volume of non-revenue real water losses	Mains bursts	APR	Our reporting considers the number of mains bursts per thousand kilometres of total length of mains
		Speed of response to visible leaks	APR	We report the time taken to fix customer reported significant visible leaks on Severn Trent Water's network
	Percentage of water utility revenues from rate structures that are designed to promote conservation and revenue resilience	Number of water meters installed	APR	Our reports outline the number of customer water meters installed
End-Use Efficiency	Customer water savings from efficiency measures, by market	Inspiring our customers to use water wisely	APR	We report the number of people who have agreed to change their behaviour as a result of our educational activities
		Per capita consumption ('PCC')	APR	Our reporting outlines the average amount of water used by each person that lives in a household property (litres per head per day). Reported as a three-year average
	Total water sourced from re- gions with High or Extremely High Baseline Water Stress, percentage purchased from a third party	Reported in EA Water Scarcity Status report ('WSSR')	EU Water Scarcity Strategy	Our reporting on sourcing from high stress regions is outlined within the WSSR
	Volume of recycled water delivered to customers	Not reported		We do not currently report on the volume of recycled water delivered to customers
	Discussion of strategies to manage risks associated with the quality and availability of water resources	Discussion around risks associated with quality and availability of water resources	APR/WRMP/SR	Discussion around risks associated with quality and availability of water resources is included in our APR, WRMP and SR. We also report against specific, associated metrics and targets, as outlined below
Water Supply Resilience		Resilient supplies	APR	Resilient supplies - We report on the percentage of customers whose service to the tap can be restored within 24 hours of a single failure event in their normal supply route
		Abstraction incentive mechanism	APR	Our reporting is around reducing water abstraction at environmentally sensitive sites to prevent environmental deterioration
		Risk of severe restrictions in a drought	APR	We report on the percentage of the population that would experience severe supply restrictions (e.g. standpipes or rota cuts) in a 1-in-200 year drought
		Increasing water supply capacity	APR	We report the increase in sustainable water supply capacity needed to maintain our projected end AMP8 supply / demand balance ('SDB')

SUSTAINABILITY ACCOUNTING STANDARDS BOARD STANDARDS		EQUIVALENT REPORTING	LOCATION OF REPORTING	DESCRIPTION OF REPORTING		
	Waste water treatment capacity located in 100-year flood zones	Waste water treatment works in 100-year flood zones	DWMP	Within the resilience section of the DWMP we consider our waste water treatment works to assess whether they're within a 100-year flood zone and whether current mitigation levels are adequate		
		Annual operation of storm overflows	Environment Agency reporting	We report information relating to the annual operation of storm overflows to the Environment Agency as part of Event Duration Monitoring		
		Public sewer flooding	APR	We report on the number of sewer flooding incidents caused by equipment failures, blockages or collapses (collectively grouped as other causes) affecting public highways and footpaths		
		External sewer flooding	APR	We report around the number of external sewer flooding incidents per year		
	(1) Number and	Internal sewer flooding	APR	We report on the number of internal sewer flooding incidents per year, including sewer flooding due to severe weather events per 10,000 sewer connections		
	(2) volume of sanitary sewer overflows (SSO), (3) percentage of volume recovered	Risk of sewer flooding in a storm	APR	Our reporting considers the percentage of the population served that are at risk of sewer flooding in a 1-in-50 year storm, split into 5 vulnerability bands		
		Blockages	APR	Our reporting outlines the total number of sewer blockages on Severn Trent Water's network (including sewers transferred in 2011)		
Network Resiliency &		Sewer collapses	APR	Our reporting outlines the number of sewer collapses per thousand kilometres of all sewers causing a reported impact on service to customers or the environment		
Impacts of Climate Change		Collaborative flood resilience	APR	Our reporting considers the number of properties and areas benefiting from a reduced risk of flooding from our sewer network achieved by working in collaboration with other Risk Management Authorities ('RMAs') or other organisations		
	1) Number of unplanned service disruptions, and (2) customers affected, each by duration category	Water supply interruptions	APR	We report the average minutes of interruption each connected property experiences for interruptions of 3 hours or greater		
		Resolution of low-pressure complaints	APR	We report the percentage of customers who report a low pressure or poor supply issue and have their complaint resolved without having to contact us for a second time		
		Persistent low pressure	APR	We report the number of low pressure days experienced by properties which have exceeded the persistent low pressure threshold. The persistent low pressure threshold is more than 25 days of low pressure in a 5 year rolling period		
		Green communities	APR	Our reporting considers the amount of natural and social capital value that we create for local communities through the construction of sustainable drainage and water management features		
		Unplanned outage	APR	Our reporting considers unplanned outage. The annualised unavailable flow based on the peak week production capacity ('PWPC')		
	Description of efforts to identify and manage risks and opportunities related to the impact of climate change on distribution and waste water infrastructure	Annual operation of storm overflows	WRMP and DWMP	Our efforts to management risks and opportunities related to the impact of climate change on distribution and waste water infrastructure is reported extensively as part of our WRMP and DWMP		