Severn Trent - Climate Change 2021

C0. Introduction

C0.1

(C0.1) Give a general description and introduction to your organization.

Severn Trent PLC is a FTSE 100 company and provides clean water and wastewater services in the UK and internationally through our regulated and non-regulated businesses – Severn Trent Water, Hafren Dyfrdwy and Severn Trent Services.

Severn Trent Water and Hafren Dyfrdwy are two of the 11 regulated water and sewerage companies in England and Wales and provides high-quality services to more than 4.6 million households and businesses in the Midlands and Wales.

Severn Trent Services is our non-regulated business offering a range of services to UK and global municipal, industrial and commercial customers for design, build and operation of water and wastewater treatment facilities and networks. This business also generates renewable energy from food waste, crop, solar, wind and hydro schemes as part of our Green Power business, sludge treatment as part of Bioresources and also has a Property Development arm.

C0.2

(C0.2) State the start and end date of the year for which you are reporting data.

	Start date	End date	Indicate if you are providing emissions data for past reporting years	Select the number of past reporting years you will be providing emissions data for
Reporting year	April 1 2020	March 31 2021	No	<Not Applicable>

C0.3

(C0.3) Select the countries/areas for which you will be supplying data.

United Kingdom of Great Britain and Northern Ireland

C0.4

(C0.4) Select the currency used for all financial information disclosed throughout your response.

GBP

C0.5

(C0.5) Select the option that describes the reporting boundary for which climate-related impacts on your business are being reported. Note that this option should align with your chosen approach for consolidating your GHG inventory.

Financial control

C1. Governance

C1.1

(C1.1) Is there board-level oversight of climate-related issues within your organization?

Yes

C1.1a

(C1.1a) Identify the position(s) (do not include any names) of the individual(s) on the board with responsibility for climate-related issues.

Position of individual(s)	Please explain
Board-level committee	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. The Board and Audit Committee continually review our principal risks, and related controls, including the impact of extreme and unpredictable weather due to climate change. Our sustainability framework, including action on climate change, is signed off by the Chair of the Board. The Corporate Sustainability Committee is responsible reviewing the Group's non-financial risks and opportunities. In 2020-2021, the board oversaw (ARA 2021, P.92): 1) Green Gas strategy - Discussed the Group's green gas strategy for the non-regulated business, including biomethane and green hydrogen. Considered the contribution of the green gas strategy to the Group's 2030 net-zero carbon ambitions and broader environmental commitments. 2) Green recovery - Reviewed the business cases to be included in the Group's Green Recovery ahead of submission to the regulators, in consideration of stakeholder benefits. On 17 May 2021, Ofwat proposed to award the Company £565 million (2017/18 prices) across all of its Green Recovery project proposals. Read more on page 13.
Board-level committee	The Corporate Sustainability Committee provides an overview of the Group's approach to Corporate Sustainability and provides an oversight of the Group's key non-financial risks and opportunities which includes climate change risks and opportunities. The Committee regularly reviews performance against targets and indicators against our sustainability framework including key environmental performance such as climate-related issues i.e. resource productivity (leakage, water efficiency, waste), carbon reduction, energy management and renewable energy generation. The Committee was also involved in the decision to publish the Group's first standalone Sustainability Report in 2020, a commitment set to continue with the release of the 2021 Sustainability Report. During 2019, the Corporate Sustainability Committee reviewed our approach to environmental leadership, including our triple carbon pledge and our plans for climate change adaptation. The Committee also supported the decision to develop science-based targets. During 2020/2021, the committee submitted our Scope 1, 2 and 3 Science Based Targets to the Science Based Targets initiative, launched our employee electric vehicle scheme and Agreed the approach to the Group's Task Force on Climate-related Financial Disclosures ('TCFD') reporting (ARA 2021, p118). The Chair of the Board is a member of this Committee and it is chaired by a Non-Executive Director, who brings both climate change and wider environmental leadership experience to the Board. The Chair of the Corporate Sustainability Committee reports to the Board on its proceedings after each meeting. Membership of the Corporate Sustainability Committee comprises four non-executive Board members. The Board Skills Matrix sets out that the Chair of the Board and Chair of the Corporate Sustainability Committee possess significant Climate-related experience (ARA 2021, p97).
Chief Executive Officer (CEO)	Our CEO develops and implements the Group's strategy, including our focus on carbon and climate change through our triple carbon pledge. In March 2021, we submitted our proposed Scope 1, 2 and 3 emissions targets to the Science Based Targets initiative, committing us to significantly reducing our greenhouse gas emissions by 2030 (ARA 2021, p43). The CEO is invited to attend Corporate Sustainability Committee meetings.
Chief Financial Officer (CFO)	Our CFO manages the Group's financial affairs and supports the CEO in the implementation and achievement of the Group's strategic objectives, including investment in, and managing the financial risk of, climate change, carbon reduction and energy management. The CFO is involved in activity such as the decision in 2019 to purchase 100% of our energy needs from renewable sources.
Board Chair	Our appointed Chair sits on the Corporate Sustainability Committee. The Chair is responsible for signing off our sustainability framework, which sets out our approach to climate change – both adapting and mitigating against it. The Board approved the Chair's role specification and one of the key skillsets sought was sustainability expertise. The current Chair possesses such experience and was previously Head of Corporate Social Responsibility in a former role. This experience was confirmed to all Shareholders in the RNS announcing her appointment. Between 2020-2021, the Corporate Sustainability committee agreed on the approach to TCFD, oversight of climate change mitigation through science based targets etc. and reviewed progress of our "Great Big Nature Boost". (ST ARA 2021, P.118.)
Other, please specify (C-Suite committee)	The Severn Trent Executive Committee regularly reviews company performance against the business plan, which includes our embedded approach to climate change mitigation and adaptation. As of May 2021, the Executive Committee elected to invest in Severn Trents Green recovery programme to support the regions environment. Work on the new investments, aimed at supporting the wider national agenda on climate change, delivering long-term flooding resilience, addressing national river quality, reducing water consumption, improving additional water supply resilience and acting as a leader on removing lead from customer-owned supply pipes (ST ARA 2021, p78).

C1.1b

(C1.1b) Provide further details on the board's oversight of climate-related issues.

Frequency with which climate-related issues are a scheduled agenda item	Governance mechanisms into which climate-related issues are integrated	Scope of board-level oversight	Please explain
Scheduled – all meetings	Reviewing and guiding strategy Reviewing and guiding major plans of action Reviewing and guiding risk management policies Reviewing and guiding business plans Setting performance objectives Monitoring implementation and performance of objectives Monitoring and overseeing progress against goals and targets for addressing climate-related issues	<Not Applicable>	The Board meets review regularly strategic matters and broader environmental commitments. 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 In addition to the detailed sustainability discussions at every Board meeting, the Board also considered the following sustainability topics as part of the formal business of Board meetings during the year (further detail on page 93 of the 2021 Annual Report): - Green recovery; - Green gas strategy for the non-regulated business, including biomethane and green hydrogen. - Considered how the Group can continue to create value in a regulatory context whilst maintaining a leading approach to ESG matters Our Enterprise Risk Management ('ERM') process establishes target risk positions for each of our significant risks. The Board formally discusses the progress towards this position and the mitigating actions being undertaken during risk review meetings every six months – a large number, such as resource productivity, are climate related. A dedicated ERM Board workshop was held in March 2020, focused on the ERM process. Our Board skills matrix in the 2021 Annual Report (page 97) and Accounts sets out which Directors possess sustainability – and, in particular, climate change – experience and expertise. The Corporate Sustainability Committee (a Board Committee) has oversight of Severn Trent's key non-financial risks. In 2021, the Committee's Terms of Reference were updated and deemed that these terms remained appropriate (to include a greater focus on climate change). Oversight of environmental leadership including mitigating climate change through our Triple Carbon Pledge, Green Fleet and Science Based Targets has continued from the previous year. The approach for the principles for the Task Force on Climate-related Financial Disclosures (TCFD) was decided and approved. Sustainability performance reports are reviewed by the Committee – quarterly update on all strategic elements to monitor our progress. The Committee is updated by Executive-led steering groups such as the Sustainability Steering Group and the Energy Steering Group.

C1.2

(C1.2) Provide the highest management-level position(s) or committee(s) with responsibility for climate-related issues.

Name of the position(s) and/or committee(s)	Reporting line	Responsibility	Coverage of responsibility	Frequency of reporting to the board on climate-related issues
Chief Executive Officer (CEO)	<Not Applicable>	Both assessing and managing climate-related risks and opportunities	<Not Applicable>	More frequently than quarterly
Corporate responsibility committee	<Not Applicable>	Assessing climate-related risks and opportunities	<Not Applicable>	Quarterly
Sustainability committee	<Not Applicable>	Both assessing and managing climate-related risks and opportunities	<Not Applicable>	Quarterly
Other, please specify (Energy Steering committee)	<Not Applicable>	Managing climate-related risks and opportunities	<Not Applicable>	More frequently than quarterly
Other committee, please specify (Executive Committee)	<Not Applicable>	Both assessing and managing climate-related risks and opportunities	<Not Applicable>	More frequently than quarterly
Other, please specify (TCFD Working group)	<Not Applicable>	Assessing climate-related risks and opportunities	<Not Applicable>	More frequently than quarterly

C1.2a

(C1.2a) Describe where in the organizational structure this/these position(s) and/or committees lie, what their associated responsibilities are, and how climate-related issues are monitored (do not include the names of individuals).

- **he Board,**
- The Board, as part of its consideration of Section 172 of the Companies Act 2006, has regards to the impact of the Company's operations on the environment when making decisions.
- The Board understands clearly the risks we face as a result of climate change and therefore receives regular updates on environmental matters from the CEO and other Executive Committee members.
- Sustainability-related discussions (including climate-related topics) take place at all Board meetings (ARA 2021, p59). The Chair of the Corporate Sustainability Committee provides a detailed update on sustainability matters at every Board meeting, through a standing agenda item.
- Each year, the Board reports on how the Group is reducing its carbon footprint in the Annual Report (ARA 2021, p66-67).
- In addition to the detailed sustainability discussions at every Board meeting, the Board also considered the following sustainability topics as part of the formal business of Board meetings during the year (further detail on page 93 of the Annual Report):
- Green recovery.
- Green gas strategy for the non-regulated business, including biomethane and green hydrogen.
- Considered how the Group can continue to create value in a regulatory context whilst maintaining a leading approach to ESG matters
- **Corporate Sustainability committee**
- Our overall approach to climate change is overseen by our Corporate Sustainability Committee, which comprises the Chair of our Board and three Non-Executive Directors and meets at least once a quarter. As stated in the Committee's terms of reference, the duties of the Committee are to consider and recommend to the Board: The approval of Group policies e.g. Group Environmental Policy; develop and recommend to the Board Corporate Sustainability targets and key performance indicators; and receive and review reports on progress towards the achievement of such targets and indicators. This ensures the creation of environmental standards, particularly those that relate to activities that have the most significant environmental impact e.g. climate change and energy use.
- The Committee regularly reviews a performance report against key sustainability KPIs. Current climate-related KPIs include water resource management, energy management, carbon metrics and biodiversity. The Committee will challenge and make recommendations to the Board if improvement on operational delivery of metrics is required.
- Corporate sustainability committee signs off our external sustainability report which incudes our carbon and climate change reporting
- **CEO and CFO -** develop and implement the Group's strategy as approved by the Board, with climate change being a key strategic focus.
- Our CEO is also accountable for delivering against Customer Outcome Delivery Incentives (ODIs). These are performance metrics, reported to our regulator that are one measure of the success of implementing the Group strategy. The CEO led discussions focusing on general business performance, key strategic initiatives underway, environmental matters such as biodiversity, environmental leadership and climate change.
- **Executive Committee**
- Our Executive Committee supports our CEO by reporting and managing the group strategy implementation at the business unit level.
- Assessing and managing climate-related risks and opportunities forms an integral part of our business planning process. Both mitigation and adaptation are integrated into performance objectives and business plans.
- **Sustainability Steering Committee and Energy Steering Group**
- These executive-led steering groups were established to assess and manage our performance against our wide-ranging sustainability commitments including climate change commitments – providing an overview of our performance.
- Membership of these committees include key roles such Head of Sustainability, Head of Environment, Energy Manager and Climate Change Lead.
- Steering groups are fed information and data updates by individual work streams across the business, who are best placed to provide the detail
- Quarterly we track progress against our carbon targets through the energy steering committee

Our sustainability governance structure is set out on page 59 of our 2021 Sustainability Report.

C1.3

(C1.3) Do you provide incentives for the management of climate-related issues, including the attainment of targets?

	Provide incentives for the management of climate-related issues	Comment
Row 1	Yes	All of our people share in our success by participating in our all-employee bonus plan, ensuring all employees are aligned with the same measures and rewarded for achieving our key objectives. 35% of this bonus is made up of performance against our customer Outcome Delivery Incentives which, through a mechanism of reward or penalty, measure performance against the areas that customers have told us matter most as well as our broader environmental responsibilities. A large proportion of these key metrics are climate-related, such as leakage, water efficiency and biodiversity. The Company's Policy remains to attract, retain and motivate its leaders and to ensure they are focused on delivering business priorities within a framework designed to promote the long-term success of Severn Trent and aligned with shareholder interests. Page 126-131 in our 2020/21 Annual Report sets out our remuneration framework, illustrating how performance linked pay is linked to our strategic framework.

C1.3a

(C1.3a) Provide further details on the incentives provided for the management of climate-related issues (do not include the names of individuals).

Entitled to incentive	Type of incentive	Activity inventivized	Comment
Chief Executive Officer (CEO)	Monetary reward	Emissions reduction target	90% CEO's bonus and LTIP remuneration is linked to company performance, including a specific target on carbon emission reduction. More can be read on page 51 of our 2020 annual performance report https://www.stwater.co.uk/content/dam/stw/regulatory-library/annual-performance-report-2020.pdf
Chief Executive Officer (CEO)	Monetary reward	Energy reduction target	One example of incentivising energy reduction comes from the PBIT element of CEO's annual bonus (see page 126 of 2021 Annual Report and Accounts). Energy is one of the businesses highest cost units. Our CEO is incentivised to reduced energy costs, improving PBIT and in turn, her annual bonus. The threshold between 0% and 100% outturn of the PBIT element of the CEO's annual bonus is around £26 million. The total cost of powering our operations came to £90 million pounds this year. This creates a highly incentivised energy reduction target.

C2. Risks and opportunities

C2.1

(C2.1) Does your organization have a process for identifying, assessing, and responding to climate-related risks and opportunities?

Yes

C2.1a

(C2.1a) How does your organization define short-, medium- and long-term time horizons?

	From (years)	To (years)	Comment
Short-term	0	1	Short term risks include dynamic risk assessments and assessments during schemes, which are generally limited to a year ahead. These include the principal risks reported in our annual report which are tested as part of our long-term viability assessment, to assess the ability of the organisation to meet its funding commitments over the short-term. Several of these will be exacerbated by the immediate and longer-term impacts of climate change, such as those relating to the provision of water, treatment of waste, regulatory change and meeting our environmental and climate change commitments. Our short-term climate-related risks are also considered as part of our ongoing stakeholder engagement, which includes extensive customer engagement, materiality assessments, and also as part of our Net Zero transition plan.
Medium-term	1	10	Our medium-term risks are assessed in line with our business planning period - we set a plan in 2018/19 which will deliver through to 2025. Our medium-term risks are also assessed within the framework of our medium-term Science Based Targets and medium-term sustainability materiality assessments.
Long-term	10	80	Generally, our risk assessment approach limits to a 25 year-look ahead - but as many of our assets have asset lives longer than that, risk can be assessed much further in some instances (e.g. scheme design). Specifically, for our WRMP we have tested climate scenarios within a range of potential warming futures, forecasting 80 years ahead to identify any gaps or shortfalls in our schemes, which contributes to our decision making when considering future capital schemes. Long-term risks are also assessed within the framework of our long-term Science Based Targets and our emerging risk horizon scanning.

C2.1b

(C2.1b) How does your organization define substantive financial or strategic impact on your business?

We operate a well-established Enterprise Risk Management (ERM) process across the Severn Trent group. This process assesses and helps manage our significant risks across the risk portfolio. These risks are linked to our corporate objectives, key processes and legal and regulatory obligations. The largest potential sources of risk, or combination of risks that can seriously affect the performance, future prospects or reputation of the group are reported as Principal Risks and are published in our Annual Report.

The Central ERM team control the ERM process which is underpinned by standardised tools and methodology to ensure consistency. Our ERM framework ensures all risks are scored against a standard scoring criteria, which incorporates an “impact” and “likelihood” assessment and is summarised on a 5 by 5 risk matrix. Risks which meet the set thresholds for Board or EXEC oversight on the 5 by 5 matrix are reported to the Severn Trent Board and Exec respectively for oversight and discussion on a regular basis. The Board and EXEC have oversight across our most critical risks, whether they are within our risk appetite or not. The Board keeps the relationship between our strategic ambitions and the management of risk under continual review. The ERM process establishes target risk positions for each of our risks. The ERM process is controlled by the central ERM team and underpinned by a standardised methodology to ensure we have undertaken a detailed and rigorous review of all our risks and how they interrelate ‘in the round’. These include corporate and financial risks as well as operational risks which were more traditionally the focus.

Principal risks facing the company are those which would threaten its future business model, future performance, solvency or liquidity, including those that could

- Adversely impact the safety or security of the Group’s employees, customers and assets

- Have a material impact on the financial or operational performance of the Group

- Impede achievement of the Group’s strategic objectives and financial targets and/or

- Adversely impact the Group’s reputation or stakeholder expectations

In financial terms, any risk with a financial impact of great than £25 million has the potential to be subject to Board or EXEC oversight.

The indicative financial values we give for risks relate to gross cost impacts for our business. In practice, the costs of both adaptation and mitigation measures will be shared between customers and shareholders, through the economic regulatory framework our appointed businesses operate under. Our statutory duties to provide clean and waste water services will endure under all climate change scenarios, and our regulator has a statutory duty to ensure that (i) water companies can properly carry out their statutory duties and (ii) water companies are financeable when doing so.

Climate change is a key factor that influences many of our risks. During the year, our ERM was reviewed to consider the interaction of climate-related risks with our overall risk management. Each risk was considered within a range of climate futures to determine the potential increased severity of that risk over time. Physical risks are more likely to impact risks around failure to provide a safe and secure supply of water, failure to effectively transport and treat waste, failure to respond to the shifting material climatic environment and maintain our essential services and failure to influence natural capital in our region. Transition risks are more likely to accelerate risks relating to changes in the political and legal environment, and regulation relating to environment. These key risks are documented and assessed within our principal risk register.

Our TCFD risk review, and the requirement to report against the UK Climate Change Adaptation Reporting Power ensures that our climate-related risks are also undertaken within a focused climate-risk review.

Each climate-related risk identified has been scored for three different proximities (short, medium and long-term), using UKCP18 climate projections as a scenario reference. For each risk we have assessed the likelihood of occurrence in any given year at each proximity, and the impact of the risk at each proximity. Our scoring criteria assesses risks on a 1-point to 5-point basis with 1-point being the lowest level of likelihood/impact, and 5-points being the greatest level. Our methodology also lays out different options for our impact criteria, dependent on which areas of the business or business service is impacted by each risk. Relevant impact criteria is selected for each risk, with support from subject matter experts (SMEs), to ensure risk impacts are assessed accurately.

As part of the impact assessment for climate change related risks, we consider factors such as; customer impact, strategic objectives, business disruption, environmental effects, regulation/compliance impact, regulatory impact and media impact.

C2.2

(C2.2) Describe your process(es) for identifying, assessing and responding to climate-related risks and opportunities.

Value chain stage(s) covered
Direct operations

Risk management process
Integrated into multi-disciplinary company-wide risk management process

Frequency of assessment
More than once a year

Time horizon(s) covered

Short-term
Medium-term
Long-term

Description of process

OVERALL RISK SYSTEM We have a fully integrated risk process that covers our entire group. As part of our continuous process the central ERM team works with the individual business units across the organisation to ensure the process is being applied. 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. Climate change is a key factor that influences many of our risks. Several of our principal risks are expected to heighten in the medium-long term. These key risks are documented and assessed within our principal risk register which includes physical risks relating to water availability, our ability to transport and treat wastewater, failure to respond to the shifting climatic environment and failure to influence natural capital, and transition risks relating to climate-related regulation and policy. RISK IDENTIFICATION In order to ensure that our ERM manages climate-related risks as identified by TCFD, a TCFD review was undertaken within a range of different climate scenarios to ensure that we are managing and assessing climate-related risks appropriately. In addition, our current risks were reviewed to understand how different climate scenarios may exacerbate or accelerate our risks. Overall, our review found that our risk management system incorporates our key climate-related risks which are monitored and assessed as part of our business-as-usual risk management. Climate-related risks are also identified as part of business unit specific workshops, ongoing stakeholder and customer engagement surveys and by our employees as part of working groups (such as our TCFD working group). From a top-down perspective, the central risk team conduct risk sessions with the exec, and we carry out strategic reviews, taking into account a world with different levels of change (technological, social, market) etc. to ensure that our strategy is resilient in a changing future. During our business planning process we also engage with our established network of regional stakeholders to understand the challenges they face over the next 25 years and help inform where we target resources to improve resilience. Our sustainability materiality assessments also take into account our climate-related risks and opportunities, and assess our impact on the environment. Our sustainability framework, including action on climate change, is signed off by the Chair of the Board. RISK ASSESSMENT Identified risks are incorporated within our risk management system. The key components of this is the centralised ERM system, and our Asset and Infrastructure risk management processes which include processes around the Water Resources Management Plan and Drainage and Wastewater Management Plan. The Central ERM team control the ERM process. Each risk incorporated within the risk register has a risk owner who regularly assesses the impact against our scoring criteria which includes assessing the “impact” and “likelihood”. The central risk team monitors and tracks compliance with risk assessment in line with the risk assessment process. Risks which are ranked as ‘High’ scoring (substantive) risks are reported to the Severn Trent Board and formally discussed on a regular basis. These may be reported as principal risks, which are defined as those which would threaten its future business model, future performance, solvency or liquidity. The Board keeps the relationship between our strategic ambitions and the management of risk under continual review. Our significant risks are reported to our Executive Committee, Audit Committee and Board every half year, while specific risk topics are discussed at the Board throughout the year. Assessment of the influence that climate change has on our significant risks form part of our ERM process. TREATMENT The ERM process establishes target risk positions for each principal risk. Risks meeting Board or EXEC oversight thresholds are formally discussed by the Board every six months to review progress towards these positions and the mitigating actions undertaken for these risks. There are 5 distinct risk responses: Treat, Terminate, Transfer, Tolerate and Take. MONITORING REPORTING AND INDEPENDENT REVIEW Monitoring the reporting are crucial steps in any Risk Management process. Regular meeting are held to monitor progress and different reports are run on a monthly, quarterly and 6-monthly basis all serving designated purposes and for a select audience. Independent challenge: The central team along with a select panel of senior management from different departments, which form the Strategic Risk Forum, provide both independent scrutiny and support of our ERM processes. CASE STUDY - PHYSICAL RISKS As a highly regulated water utility, we are required to specifically assess the ability of our organisation to provide waste water, and to treat and transport wastewater. There are several regulatory requirements in which this climate-specific risk assessment takes place – firstly as part of the UK Climate Change Adaptation Reporting, which requires us to consider climate-related risks and opportunities on the business. Secondly, we are required to produce detailed water resources plans to ensure that our strategy is resilient against the impacts of climate and increased population growth within a range of climate futures. Specifically, our modelling considers the Met Offices UKCP09 and UKCP18 climate scenarios, which are based on the IPCCs RCP climate scenarios. Our reporting for these projects takes place in 5 yearly reporting cycles and is reviewed independently by our regulators. Our TCFD-aligned risk-assessment process has supported our view that our key risks are identified, monitored and assessed as part of these in-depth climate models which take into account a range of climate futures, looking at 40 to 80 years in the future. CASE STUDY - TRANSITION RISKS The Board meets 10 times a year to review strategic matters and in 2019 held a session focused specifically on carbon. The Corporate Sustainability Committee (a Board committee) has oversight of Severn Trent’s key non-financial risks. In 2019/20, the Committee’s Terms of Reference were updated to include a greater focus on climate change. Throughout the year the Committee discussed our approach to climate change adaptation and approved the commitment to develop Science Based Targets in line with the goal of the Paris Agreement to limit global warming to below 1.5°C. As part of the TCFD risk assessment, an exercise was undertaken to understand the impact of increased carbon pricing ($140/tonne CO2e) on the company in a "do nothing scenario". This is discussed further in Risk 3.

Value chain stage(s) covered

Direct operations

Risk management process

A specific climate-related risk management process

Frequency of assessment

Every three years or more

Time horizon(s) covered

Short-term
Medium-term
Long-term

Description of process

WATER RESOURCES MANAGEMENT PLAN, DRAINAGE AND WASTEWATER MANAGEMENT PLAN AND UK CLIMATE CHANGE ADAPTATION REPORTING As a highly regulated water utility, we are required to specifically assess the ability of our organisation to provide waste water, and to treat and transport wastewater. There are several regulatory requirements in which this climate-specific risk assessment takes place – firstly as part of the UK Climate Change Adaptation Reporting, which requires us to consider climate-related risks and opportunities on the business. Secondly, we are required to produce detailed water resources plans to ensure that our strategy is resilient against the impacts of climate and increased population growth within a range of climate futures. Specifically, our modelling considers the Met Offices UKCP09 and UKCP18 climate scenarios, which are based on the IPCCs RCP climate scenarios. Our reporting for these projects takes place in 5 yearly reporting cycles and is reviewed independently by our regulators. Our TCFD-aligned risk-assessment process has supported our view that our key risks are identified, monitored and assessed as part of these in-depth financial models which take into account a range of climate futures, looking at 40 to 80 years in the future. We have participated in the first two rounds of Climate Change Adaptation reporting under the Climate Change Act 2008, and are updating our full risk assessment this year, which we will embed within our risk management process. We are developing a separate climate change risk and going forwards, aim to further understand potential financial implications of climate risk. This will be focus as we continue to evolve our disclosures.

C2.2a

(C2.2a) Which risk types are considered in your organization's climate-related risk assessments?

	Relevance & inclusion	Please explain
Current regulation	Relevant, always included	As a regulated company this is highly relevant to us and we consider risks of regulation, for example that weather events may make us unable to meet current regulatory targets, leading us exposed to regulatory risk under the current system. Our approach to managing climate-related risks reflects our status as a regulated utility providing essential services and operating as part of the Critical National Infrastructure for the UK. The understanding we gain from our ERM process allows us to put in place effective mitigation strategies. We have also participated in the first two rounds of Climate Change Adaptation reporting under the Climate Change Act 2008, and are updating our full risk assessment this year, which we will embed within our risk management process. CASE STUDY - short-term The Climate Change Act 2008 gives the Secretary of State the power to direct reporting water utilities to produce reports on what they are doing to adapt to climate change. The power is referred to as the Adaptation Reporting Power and Severn Trent is required to produce Adaptation Reports as a result of this regulation. Our last Adaptation report was produced for the period 2015-2020 and our next report (for the period 2020-2025 will be released later in 2021. The report sets out key risks relating to the physical impacts of climate change and how Severn Trent is resilient against those risks. https://www.stwater.co.uk/about-us/climate-responsibility/climate-change/adapting-to-climate-change/
Emerging regulation	Relevant, always included	As a regulated company this is highly relevant to us and we consider risks of regulation, for example that future price review methodologies may not take climate change impacts into account. We have issued our sustainable finance framework and sustainable bond which is good practice for issuing debt under EU taxonomy. In a Paris-aligned scenario, it is expected that regulation around climate mitigation and environmental protection may become more stringent, and as water utility with a key role in land stewardship and natural resource management, changes could significantly impact our operations. CASE STUDY short-medium- term There is a risk that we do not comply with our future raw water abstraction licenses to produce sufficient potable water from to meet network demand causing environmental damage. Risk Detail: We require full abstraction licenses from the Environment Agency to take to take more than 20 cubic meters a day from a source of supply such as rivers or an underground source. The licenses allows a certain and quantity of water to be abstracted and are set at a level to protect both water supplies and the environment. The license level granted ensures that water resources are safeguarded and the environment is not damaged in the long term. In the future it is anticipated that there will be a reduction in the volume of water allowed to be abstracted to protect the environment. The impact of this needs to be considered as part of our overall business planning to ensure that we can provide water in the medium-long term. Over abstraction could lead to water supply shortages in the future, increased river pollution by reducing the dilution factor, damage to wildlife habitats and ultimately to the loss of rivers for all of us to use and enjoy.
Technology	Relevant, always included	As an asset driven business this is very relevant to us, for example the opportunity (which we have pursued over recent years) that new renewables technology will enable us to reduce carbon emissions and generate more renewable energy from our existing feed stocks. We are closing down our current data centres and migrating to 'The Cloud', which will enable us to reduce energy demands through our servers and reduce e-waste. We are exploring carbon capture at our largest wastewater recycling plant (Minworth) which will contribute towards our net-zero target. We have committed to converting to a 100% electric vehicle fleet by 2030. There is also a risk that we will not achieve technological advances, particularly with regard to renewable energy generation, and that we will need to further invest in latest technologies to achieve our goals. CASE STUDY short-medium- term Investment in technology: In 2020 we received permission from the EA to vary our existing environmental permit for our Stoke Bardolph Sewage Treatment Works enabling us to construct a new Thermal Hydrolysis Plant ('THP') and biogas upgrading unit. Commissioning of the new plant is almost complete and the THP plant is being used for the pre-treatment of all sludges prior to digestion, facilitating the production of an enhanced sludge product at this site. The biogas plant upgrades the biogas produced on-site through anaerobic digestion and makes it suitable for injection into the National Gas Grid for onward use by end consumers. The new plant increases the efficiency of our gas production and our contribution to a net-zero carbon UK. Further investments in the latest and most advanced technologies are likely to be required in a changing future.
Legal	Relevant, always included	Legal risks, like current regulations, are compliance risks which we must always consider. With a changing climate there could be differing cyber threats that emerge impacting our legal duties on data protection. We have already experienced as shift in the threats throughout the COVID-19 global pandemic. CASE STUDY short-medium- term There is a risk of increasing expectations from the public to disclose more information relating to climate change resulting in accelerating regulatory changes. Risk Detail: The UK Government has stated that climate-related financial disclosures (in line with the recommendations of the Task Force on Climate-related Financial Disclosure) are to become mandatory for the majority of UK companies, and the FCA has announced that they are obligatory for publicly listed companies with a premium listing for accounting periods on or after 1 January 2021. As a water utility which is highly sensitive to the impacts of climate change, we regularly carry out scenario analysis to ensure that we can continue to provide clean and safe water, and have reported against the recommendations of TCFD in our 2020 Annual Report. In order to anticipate upcoming legal changes, we complete regular horizon scanning sessions to defect emerging risks as early as possible. This has identified that there has been a trend over the last few years highlighting the changing demands and expectations of our key stakeholders. Furthermore, we have recognised the need to act in this space and have already made several ambitious sustainability targets. In 2021 ST will also be publishing our full and enhanced TCFD report.
Market	Relevant, always included	Market risk exists because of changes in market conditions such as price changes or customer expectations. We monitor energy import prices and renewable energy export prices and incentive rates to help inform decision around potential investment which are considered as part of our business planning process. CASE STUDY medium-term In a Paris-aligned future, it is possible that there will be changes to the market price of energy derived from fossil-fuel sources, in a bid to reduce harmful CO2 emissions. As a water utility, we require a lot of energy to treat water, pump water and take wastewater away. As such, in a unmitigated scenario, we may be subject to fluctuations in fossil fuel energy prices. This year we reduced our net operational emissions on the market basis, primarily through our switch to procuring 100% renewable backed energy via our import contracts. We continue to generate more renewable energy than any other UK water company and now generate the equivalent of 53% of Severn Trent Water Limited's energy needs, up from 51% in 2019/20. The UK overall has a desire to increase the amount of energy generated through renewable sources. This is shared by Severn Trent and we have made several commitments that by 2030 we will achieve net zero carbon emissions, that 100% of our energy will come from renewable sources and we will have 100% electric vehicles, availability of vehicles permitting. Being less reliant on the National Grid by self-producing green energy, we will be able to better predict operational expenditure and also help reduce greenhouse emissions, lowering our carbon footprint as a business.
Reputation	Relevant, always included	Reputational risks are important for us to consider as a FTSE 100 company. For example, the reputational benefit opportunity of consistently achieving reductions in carbon emissions and holding the carbon trust standard for future years. There will also be a reputational benefit of the company committing to and achieving Science Based Targets. There will be a reputational risk and benefit opportunity of attracting ESG investors. CASE STUDY short-medium term Management considers changing, new or emerging risks through regular review and discussion. More locally, our network of ERM Co-ordinators, ERM Champions and risk owners use techniques such as cross-functional workshops and PESTLE (Political, Economic, Social, Technological, Legal and Environmental) analysis. This culminates in an Emerging Risk horizon map reported annually to the Audit Committee and Board. In our 2020 Annual Report, we reported a shift in customer expectations and will need to be flexible in adjusting our plans over the coming years. Key to our understanding of how we are perceived by our customers is the extensive stakeholder engagement undertaken across the Group. At Board level • Customer-shareholders engage with the Board and submit questions in advance of our Annual General Meeting. • Customer delivery performance is discussed at every Board meeting. • Customer perceptions of value for money reported to our Corporate Sustainability Committee. • Extensive customer engagement shapes our strategy and business plan. We also engage across the company, as outlined at p68 of the Annual Report: https://www.severntrent.com/content/dam/stw-plc/shareholder-resources/ara-annual-report-2021.pdf
Acute physical	Relevant, always included	Due to the nature of our operations, acute physical risks are highly relevant to us and something we consider when developing our investment plans for our AMP periods and are integrated with our long-term planning such as the Drainage and Waste Water Management Plan ('DWMP') and Water Resources Management Plan ('WRMP'). Physical risks are considered routinely during our business as usual operations such as operating during storm conditions CASE STUDY medium-long- term Increased risks of acute drought conditions and heatwaves may increase in a warming climate and impact upon our ability to provide water. Severn Trent's Water Resources Management Plan ("WRMP") sets out the Group's approach to providing a sustainable and resilient water supply for the next 25 years. We carry out in-depth modelling which considers increased demand side pressures from increasing population and behavioural change, and also the impact of short-term high demand events such as drought. The WRMP also looks at supply side pressures, considering the impact of climate change on water availability from our water resources. This climate scenario analyses is based on the Met Office's UKCP18 models. In addition, we assess multiple climate-related scenarios overall to understand the impact of climate on water availability to ensure that the sensitivity of our projections is understood.
Chronic physical	Relevant, always included	Chronic physical risks are longer-term shifts in climate patterns (e.g. sustained higher temperatures) that may cause sea level rise or chronic heat waves. Severn Trent has a 'goal zero' policy on safety and we aim that no one is or made unwell by what we do. Longer-term physical risks are considered routinely - such as operating during hot weather and the risk of freeze/thaw events in the winter. Due to the nature of our operations, chronic physical risks are highly relevant to us and something we consider when developing our investment plans for our AMP periods and are integrated with our long-term planning such as the Drainage and Waste Water Management Plan ('DWMP') and Water Resources Management Plan ('WRMP'). Physical risks are considered routinely during our business as usual operations such as operating during storm conditions CASE STUDY medium- long-term Increased risk of chronic higher temperatures may decrease water availability and impact upon our ability to provide water. Severn Trent's Water Resources Management Plan ("WRMP") sets out the Group's approach to providing a sustainable and resilient water supply for the next 25 years. We carry out in-depth modelling which considers increased demand side pressures from increasing population and behavioural change, and also the impact of short-term high demand events such as drought. The WRMP also looks at supply side pressures, considering the impact of climate change on water availability from our water resources. This climate scenario analyses is based on the Met Office's UKCP18 models (which align with the IPCC's RCP models. Most modelling projections are assessed using RCP8.5, which translates to warming of between 3.2*c and 5.4*c by the end of the century which is expected to result in the most significant physical changes from a climate perspective. We also assess the impact of RCP6.0 which translates to warming of between 2.0*c and 3.7*c by the end of the century. In addition to these key scenarios, we assess 32 climate-related scenarios overall to understand the impact of climate on water availability to ensure that the sensitivity of our projections is understood.

C2.3

(C2.3) Have you identified any inherent climate-related risks with the potential to have a substantive financial or strategic impact on your business?

Yes

C2.3a

(C2.3a) Provide details of risks identified with the potential to have a substantive financial or strategic impact on your business.

Identifier
Risk 1

Where in the value chain does the risk driver occur?
Direct operations

Risk type & Primary climate-related risk driver

Chronic physical	Rising mean temperatures

Primary potential financial impact
Increased indirect (operating) costs

Climate risk type mapped to traditional financial services industry risk classification
<Not Applicable>

Company-specific description
RISK DRIVER As a highly regulated water utility it is imperative that we provide clean and safe drinking water to our consumers. Climate change will increase pressure on our ability to secure water supply by reducing water availability and increasing demand during peak periods of hot weather. Hotter, drier summers in particular are expected to increase the pressure on our services which are more likely to occur in a high-warming scenario (the IPCC's RCP8.5 scenario) COMPANY SPECIFIC CASE STUDY Hot weather events can impact our business operations. For example, a hot weather event in 2018 affected the West of England and part of Severn Trent's supply area. An extra 300 megalitres water above our usual supply levels was required to be treated and pumped into our water network for our customers. This hot weather event also affected other water utilities in a similar manor. Severn Trent took a proactive approach, in line with our Drought Action Plan, to preserve raw water by spending £1.3m on bottled water, putting an extra £2m into moving water around by tanker to top up strategic reservoirs and boosting our tanker fleet with 25 additional vehicles. These actions also helped us protect the natural environment by reducing the amount we were abstracting from these local areas experiencing the hot weather. Throughout this period, additional costs to the business of £22m (£10m in direct costs and £12m in recovery costs) were incurred. However, this is partly offset by the increased demand for water, resulting in additional revenue of £5m. The net cost to the business was therefore £17m. CLIMATE ACCELERATOR AND FINANCIAL IMPACT UKCP18 Met Office projections (which are based on the IPCC's RCP climate scenarios) show that by mid-century, UK summers as warm as 2018 are expected to become the norm (about a 50% chance) and by the end of the century the chance could increased to over 90% under a high greenhouse gas emission scenario (RCP8.5 which aligns with c.4.3*c warming by the end of the century). Based on the probability of a drought event similar to the 2018 drought event occurring in 2050 before any mitigating activities, a 50% probability of occurrence could result in £8.5m in 2050. It should be noted that Severn Trent have extensive mitigating activities in place which are expected to significantly reduce this expected impact.

Time horizon
Medium-term

Likelihood
Very likely

Magnitude of impact
Medium-high

Are you able to provide a potential financial impact figure?
Yes, a single figure estimate

Potential financial impact figure (currency)
8500000

Potential financial impact figure – minimum (currency)
<Not Applicable>

Potential financial impact figure – maximum (currency)
<Not Applicable>

Explanation of financial impact figure
The financial figure is based on the net cost to the business in 2018 of £17m, multiplied by a probability of occurring in 2050 at 50% (£17m x 50% = £8.5m). Please note that this estimation is not discounted to present value and does not account for any mitigating activities.

Cost of response to risk
74626000

Description of response and explanation of cost calculation
MANAGEMENT OF RISK Water availability and water demand is modelled extensively within our Water Resources Management Plan. In line with UKCP09 and UKCP18 climate models (which look at thousands of potential climate futures), we can understand which particular regions within our network will be subject to water stresses and increased demand. This enables us to assess whether current and future expected supply will be sufficient to meet demand. Due to the long-term time horizon over which some of our modelling takes place and the inherent uncertainty in climate change projections there is significant uncertainty over whether the climate scenarios tested will occur. This means that our regions could be impacted by more or less hot weather extremes. We therefore test the sensitivity of the modelling so that we can understand what could happen if the impact, speed of onset and rate of warming was different. Our adaptive planning and continual reassessment enables us to for an investment plan resilient to all future climate pathways, but which does not overinvest. As part of the WRMP, we have various mitigation activities which are expected to reduce demand overall (thus reducing the impact of hotter, drier summers) such as leakage reduction, demand management (water efficiency measures and metering), increasing the capability of our water sources by increasing capacity of abstractions, transferring water around the UK wide network from high demand to low demand areas, improving existing assets to increase deployable output etc. Alternatively, if our modelling suggests that these mitigation measures are insufficient, we may develop new water resources, such as a reservoir. Our WRMP assesses hundreds of different options to ensure that the most effective response is proposed within our plans. CASE STUDY Our WRMP has significant detail on the potential options available, but as a specific example from the Strategic Grid (the largest Water Resource Zone within our network), the NPV capex cost of enhancing Stanford Reservoir would be £1,020,000. EXPLANATION OF COSTS OF MANAGEMENT The total cost included within the "management of response to risk" cost is the £74.626m awarded by Ofwat to repair/replace 26,000 supply pipes across two trial areas to remove lead and reduce leakage.

Comment
Our management of this risk is extensive and comprises the following measures: • reducing leakage on our network; • helping customers to use less water through water efficiency activities and education; and • increasing the coverage of water meters across our network to further reduce consumption and to improve our understanding of

water demand patterns. While making the best use of our sustainable sources of supply by: • reducing abstraction from those water sources that have a detrimental impact on the environment; • making sure our future water abstractions do not pose a risk of environmental deterioration, as required by the Water Framework Directive; • increasing the flexibility and resilience of our supply system; • increasing or optimising deployable output from existing, sustainable sources where possible; • using catchment restoration techniques to improve habitats and ecological resilience to low flows; • using catchment management measures to protect our sources of drinking water supply from pollution risks; and • exploring trades in and out of our region to optimise national use of resources. Between now and 2025, we will invest £47 million in feasibility work on two options for an interconnector that could deliver an extra 1,500 million litres per day to the South East, developing a 'spade ready' solution by 2025. This interconnector could play a vital role in securing the UK's water sources into the middle of the century.

Identifier
Risk 2

Where in the value chain does the risk driver occur?
Direct operations

Risk type & Primary climate-related risk driver

Acute physical	Increased severity and frequency of extreme weather events such as cyclones and floods

Primary potential financial impact
Increased direct costs

Climate risk type mapped to traditional financial services industry risk classification
<Not Applicable>

Company-specific description
RISK DRIVER Heavy rainfall can result in an inability of sewers to collect wastewater, or an inability of our sewers to cope with additional water. This could in turn cause sewer flooding or surface flooding which affects customers and causes river pollution. Sewer flooding is likely to increase in a business as usual scenario, where there is expected to be significant changes to meteorological changes, including wetter winters and increased storms. Flooding volumes from sewers nationally are predicted to increase by more than 50% over the next 30 years, and by 2050, an estimated 3.2m people across the country will be at risk of flooding caused by surface water an urban drainage. COMPANY SPECIFIC CASE STUDY Increased flooding in the UK could result in penalties or fines, especially in a more highly regulated future. As an example, Severn Trent were fined £800,000 in 2020 for a Shropshire sewage pollution event which took place in 2016, and this nature of event may become more likely in the event of a climate with increased rainfall. We may also face either penalty or reward based on our performance against our ODIs. Increases in sewer flooding would lead to increased ODI penalties. For example, in 2019/20 we faced a penalty of £15.637m due to under-performance against both internal and external sewer flooding targets. If this risk were to increase by 50% on 2050, an estimated cost to the business could be XX (£15.6m* 1.5) CLIMATE ACCELERATOR AND FINANCIAL IMPACT We assess the probability and likelihood of flooding within our Drainage and Wastewater Management Plan. This looks at variables such as sewer capacity, flood risk from rivers and sea, and potential changes to the speed, duration and volume of water from rainfall events. Whilst climate change is not considered specifically within this modelling, it is aligned with the modelling undertaken as part of the Water Resources Management Plan (based on the UKCP19 and UKCP09 climate scenarios). The financial impact on the business has been measured based on the 2020 ODI for under-performance on flood event risk, uplifted by 50% to take into account expected increases in the level of flooding across the UK.

Time horizon
Medium-term

Likelihood
Likely

Magnitude of impact
Medium-high

Are you able to provide a potential financial impact figure?
Yes, a single figure estimate

Potential financial impact figure (currency)
7820000

Potential financial impact figure – minimum (currency)
<Not Applicable>

Potential financial impact figure – maximum (currency)
<Not Applicable>

Explanation of financial impact figure
A simplistic method to outline potential risk to the business is to consider the ODI penalties in 2020 from under-performance on pollution targets, and uplift these by 50% to consider the potential unmitigated impact in 2050. In reality, the modelling work we undertake is significantly more complex and takes many additional variables into account, such as height of property, spill event frequency and spill event duration etc. However, as an indicative risk, we have considered X * X = X [need to get the 2020 data. NB: Anglian have included the Equivalent Annualised Benefit over 40 years which represents the cost of managing existing sewer flooding problems - made up of financial penalties, clean-up as well as societal values determined through a willingness to pay - can we get that figure?]

Cost of response to risk
85000000

Description of response and explanation of cost calculation
MANAGEMENT OF RISK Flooding and flood resilience is extensively modeled within our Drainage and Wastewater Management Plan which looks at hundreds of different potential management options, assesses the benefits to community and our stakeholder, and which select the best investment opportunities, ensuring flood resilience, but solutions which don't overinvest. As part of our plans, we include proposals for increasing sewer network capacity and developing sustainable drainage solutions to increase the capacity of the natural environment to absorb wastewater. We also have a programme of works to clean or replace sewers, and educational programmes on sewer misuse etc (see more depth in the comments section below). The costs to manage comprise a significant proportion of our business activities, and we therefore include an indication of costs relating to one significant enhancement project as an indication of our costs to manage. CASE STUDY We are proposing to build the UK's first city catchment scale flood resilience programme which will radically change our approach to managing surface water and developing flood resilient communities. Assuming our modelled forecasts are robust, it is likely that we will need to deliver network capacity improvements in Mansfield in AMP8 or 9 (2025-2035). We are planning to deliver the equivalent of up to 60% (58,000m3) of future network storage up to 2050 (equivalent to more than 23 Olympic swimming pools) through the installation of more than 15,000 blue-green infrastructure features such as planted detention basins, permeable paving, street planters and bioretention tree pits, verge rain gardens and rainwater downpipe planters. EXPLANATION OF COSTS OF MANAGEMENT The proposed cost of the project is £85m (with Ofwat funding of £75.675 secured) and will manage holistic future surface water flooding pressures in Mansfield and our sewerage duties. The full business plan for flooding solutions in Mansfield is set out in our Business case https://www.stwater.co.uk/content/dam/stw/regulatory-

library/09_Business%20case%2003_Building%20sustainable%20flood%20resilient%20communities_FINAL_R.pdf NB - there is a cost of "doing nothing" disclosed in this report but it has been redacted - could we include this as an example (it would also be a great disclosure for TCFD)

Comment
We have a range of management activities which include: •Doubling the number of sustainable urban drainage solutions. By improving surface water management as part of retrofit solutions we will be able address current capacity issues and improve future resilience in our networks. •Focusing R&D on technologies to develop resilient drainage solutions for the future •We use our asset deterioration model to predict pipes most likely to suffer blockages resulting in sewer flooding and pollution of watercourses. The model suggests interventions, such as cleaning or replacing sewers. •We have a programme of customer education on sewer misuse, aiming to reach 125,000 customers by 2020. •We are developing a Drainage and Wastewater Management Plan (DWMP), including climate projections and 2D flood risk management modelling. This covers the investments we plan to make over the next five-year period, 2020-25, as well as setting out a long-term (25-year) strategy for how we are going to deliver a reliable and sustainable wastewater service. [This data needs to be updated]

Identifier
Risk 3

Where in the value chain does the risk driver occur?
Direct operations

Risk type & Primary climate-related risk driver

Emerging regulation	Carbon pricing mechanisms

Primary potential financial impact
Increased direct costs

Climate risk type mapped to traditional financial services industry risk classification
<Not Applicable>

Company-specific description
RISK DRIVER It is possible that the UK Government will introduce a carbon tax which sets a price for emitters on each tonne of greenhouse gas emissions that are produced. Whilst the specifics of which organisations may be targeted and how a carbon tax could operate are unclear, it is possible that a "carbon tax" would be directly applied to the emissions of an emitting entity. Under the IEA's Sustainable Development Scenario, which limits warming to below 2degrees, in line with the Paris Agreement, it is expected that a carbon price of $140 could apply to certain industries. Whilst it is not currently expected that the water industry would be impacted, we have used this value as a proxy to understand how a carbon tax or similar could impact upon the organisation should it be introduced. In reality, it is not expected that such a carbon tax will be applied in the near future, and shorter term implications for the organisation are considered as part of our emerging risks horizon scanning. COMPANY SPECIFIC CASE STUDY The majority of our operations and supply chain's operations are located in the UK, we have therefore considered the IEA's expected carbon price in 2040 for advanced economies. It should be noted that this carbon price is currently expected to only apply to high emitters in advanced economies (power, industry and aviation). As such the Group considers it highly unlikely that the financial impact materialised would crystallise. The exercise to assess carbon emissions has been used to assess the resilience of our strategy in a range of climate futures, rather than for the purposes of financial forecasting. CLIMATE ACCELERATOR AND FINANCIAL IMPACT Our total Annual Net Operational Emissions in 2020 (market based) were 105,797 tonnes/CO2e. Applying a simplifying assumption that our operational activities do not change, and assuming that a carbon tax of $140 applied in 2040 (in line with the IEA's Sustainable Development Scenario which limits warming to below 2 degrees), the potential carbon tax applicable is $14.8m, or £10.8m using an exchange rage of GBP1: USD1.375

Time horizon
Short-term

Likelihood
Unlikely

Magnitude of impact
Medium

Are you able to provide a potential financial impact figure?
Yes, a single figure estimate

Potential financial impact figure (currency)
10800000

Potential financial impact figure – minimum (currency)
<Not Applicable>

Potential financial impact figure – maximum (currency)
<Not Applicable>

Explanation of financial impact figure
Our total Annual Net Operational Emissions in 2020 (market based) were 105,797 tonnes/CO2e. Applying a simplifying assumption that our operational activities do not change, and assuming that a carbon tax of $140 applied in 2040 (in line with the IEA's Sustainable Development Scenario which limits warming to below 2 degrees), the potential carbon tax applicable is $14.8m, or £10.8m using an exchange rage of GBP1: USD1.375 (105,797 * 140)/1.375 = £10.8m

Cost of response to risk
139841000

Description of response and explanation of cost calculation
MANAGEMENT OF RISK In 2019 we announced our Triple Carbon Pledge, committing to net zero operational carbon emissions, 100% renewable energy, and an all-electric fleet by 2030, subject to the availability of vehicles. In 2020, we also announced our decision to invest £1.2bn in environmental initiatives including planting 1.3m trees and boosting the biodiversity of 5,000 hectares of land in our region. In March 2021 we submitted our proposed Scope 1, 2 and 3 emissions targets to the Science Based Targets initiative, committing us to significantly reduce our greenhouse gas emissions by 2030. A significant proportion of our emissions arise from electricity purchased for own use (182,768 tonnes/CO2e in 2020). Our renewable energy initiative alone would therefore reduce the 2040 sustainable development cost by £18.6m. Our full range of initiatives are expected to reduce the anticipated 2040 cost by 100%. CASE STUDY As a case study example of the funding provided to meet our 2030 goals, in May 2021 Ofwat (our regulator) approved our proposals to invest £565m (in 2017/18 prices) in an ambitious Green Recovery Programme to support the UK's green economic bounce back and create 2,500 new jobs in the midlands. EXPLANATION OF COSTS OF MANAGEMENT £139.841m of the funding has been earmarked to create new low carbon water resources to help improve drought resilience and water supplies in a low-carbon, reduced-chemical way, through a combination of supply- and demand- side solutions. The investment will satisfy a number of our other regulatory requirements in addition to providing low-carbon solutions. Metrics and targets to measure effective management We annually monitor and measure our carbon emissions and set annual targets [what are the targets for 2025 and 2030]

Comment

Identifier
Risk 4

Where in the value chain does the risk driver occur?
Direct operations

Risk type & Primary climate-related risk driver

Reputation	Increased stakeholder concern or negative stakeholder feedback

Primary potential financial impact
Increased indirect (operating) costs

Climate risk type mapped to traditional financial services industry risk classification
<Not Applicable>

Company-specific description
RISK DRIVER It is expected that investors will become increasingly interested in sustainable product investing and there will be increased awareness around an organisations sustainability credentials, which may drive investment alongside more traditional financial indices. If Severn Trent fails to achieve its sustainability commitments, or does not lead on sustainability (and carbon reduction) initiatives, this may translate to reduced investor interest and reduced share price. COMPANY SPECIFIC CASE STUDY According to a Schroder's Global Investor study in 2017, 67% of UK respondents acknowledged that sustainable investing was more important to them now than 5 years ago, citing the potential for long-term returns as a greater factor than ethical considerations, indicating that there is a preference for investing in organisations with strong green credentials. One meta analysis showed that 80% of studies show a positive effect on stock price performance where the company adhered to social or environmental standards. Failure to meet our environmental targets (including our carbon targets) and failure to act in a sustainable way could therefore detrimentally impact upon our reputation with stakeholders, investability and ultimately our share price. CLIMATE ACCELERATOR AND FINANCIAL IMPACT We expect that consumer trends toward green investing and increased awareness of corporates' green credentials are more likely to increase in a sustainable development scenario where there is increased trends towards decarbonisation. At 2 July 2021, our market capitalisation was £6.31bn. A 1% reduction in value could equate to £63.1m

Time horizon
Medium-term

Likelihood
Likely

Magnitude of impact
Medium

Are you able to provide a potential financial impact figure?
Yes, a single figure estimate

Potential financial impact figure (currency)
63100000

Potential financial impact figure – minimum (currency)
<Not Applicable>

Potential financial impact figure – maximum (currency)
<Not Applicable>

Explanation of financial impact figure
Share fluctuations can occur as a result of market factors, financial performance and a range of other influencing factors. In the unlikely event that our share price would be negatively impacted by non-achievement of our environmental and climate performance targets, this could result in a reduction to our share price. As an indication of the impact on our company, a 1% drop in share price would equate to £63.1m. (£6.31bn * 1% = £63.1m)

Cost of response to risk
78484000

Description of response and explanation of cost calculation
MANAGEMENT OF RISK As a company taking care of one of life's essentials, water, we know that the resilience of our business is intrinsically linked to the resilience of our region, its communities and the natural environment. Our long-standing commitment to sustainability is demonstrated in our leadership on renewable energy generation, sustainable management of our land, and dedicated programmes to support our people and communities. By 2025 we will invest £1.2bn in our sustainability ambitions including climate and biodiversity initiatives such as planting 1.3m trees and boosting biodiversity of 5,000 hectares of land. We have also committed to deliver our Triple Carbon Pledge, by 2030, where available. We regularly engage with customers and stakeholders to assess the "willingness to pay" of our stakeholders for climate and environmental initiatives, assess the NPV of carbon impacts regarding our infrastructure investments, and consider the value of natural capital alongside our financial performance indicators. We anticipate that our management methods will position the organisation as a climate leader, resulting in an attractive investment for stakeholders. We hold the Carbon Trust Standard and report to CDP each year ensuring our climate change information is publicly accessible and to ensure that we are benchmarked against our peers. This year, we also reported against the Task Force on Climate-related Financial Disclosures and will be updating our Climate Change Adaptation Report for 2021, in line with reporting under the Climate Change Act 2008 and Defra guidelines, ensuring that we are aware of, and resilient against our climate-related risks and opportunities, within a range of climate scenarios. CASE STUDY AND COSTS OF MANAGEMENT As a case study example of the funding provided to meet and exceed our environmental performance obligations, Severn Trent have recently received regulatory endorsement to invest £78,484,000 in creating bathing rivers, to eliminate harm from 25 storm overflows by reducing spills in the area during the bathing season, and create two inland bathing water trials via two large-scale pilots to deliver bathing-quality water. The trial scope will address all 25 storm overflow and storm tanks identified on the Rivers Teme Avon and Leam (£69.537m), and three wastewater treatment disinfection upgrades (£6.948m) for Itchen Bank and Frankton on the River Leam, and Ludlow on the River Teme.

Comment

C2.4

(C2.4) Have you identified any climate-related opportunities with the potential to have a substantive financial or strategic impact on your business?
Yes

C2.4a

(C2.4a) Provide details of opportunities identified with the potential to have a substantive financial or strategic impact on your business.

Identifier
Opp1

Where in the value chain does the opportunity occur?
Direct operations

Opportunity type
Markets

Primary climate-related opportunity driver
Access to new markets

Primary potential financial impact
Increased revenues through access to new and emerging markets

Company-specific description
NATURE OF OPPORTUNITY We recognise the opportunities from generating both renewable electricity and heat and making best use of heat which we already generate. We already take advantage of renewable energy incentives which are on offer to maximise the income from our renewable energy generation. We will continue to take advantage of these to support our ongoing renewable energy expansion investment schemes. We aim to maximise the conversion of sludge into biogas and other useful resources and ensure the safe disposal of the remaining biosolids . We will upgrade our technology from conventional digestion to Thermal Hydrolysis Plants ('THPs'). We will explore carbon capture from our AD processes in order to decarbonise our energy generation. APPLICATION TO COMPANY Our operations throughout the UK generate renewable energy from anaerobic digestion, crop, hydropower, wind turbines and solar technology. As a case study example, our Anaerobic Digestion (AD) and Composting facilities exist across Derby, Birmingham, Oxfordshire, Hertfordshire, Surrey and South Wales, and provide enough green energy to power 50,000 local homes each year Our 33 solar parks, 6 wind turbines and 5 hydro-electric turbines produce 58MW of renewable energy, enough to power 115,000 homes each year. In 2020, we generated 267GHh renewable energy. CASE STUDY Under the IEA's Sustainable Development Scenario which limits warming to below 2 *c, it is expected that renewable energy generation will increase from 1,438TWh in 2018 to 2,967TWh in 2040 (i.e. generation will more than double)

Time horizon
Short-term

Likelihood
Likely

Magnitude of impact
Medium-high

Are you able to provide a potential financial impact figure?
Yes, a single figure estimate

Potential financial impact figure (currency)
77500000

Potential financial impact figure – minimum (currency)
<Not Applicable>

Potential financial impact figure – maximum (currency)
<Not Applicable>

Explanation of financial impact figure
Our turnover from Green Power in 2020 was £77.5m. Under the IEA's Sustainable Development Scenario, it is expected that renewable energy generation will more than double. Using simplifying assumptions, if demand for renewable energy also doubled, there could be an additional revenue benefit in 2040 of £77.5m. £77.5m * 200% - £77.5m = £77.5m

Cost to realize opportunity
120000000

Strategy to realize opportunity and explanation of cost calculation
REALISING OPPORTUNITY The renewable energy market also has growth potential for us. We see scope to increase our electricity generation from sources such as food waste digestion and solar, allowing us to sell any electricity not used by our regulated business to National Grid. Similarly, we can sell surplus gas generated by our waste treatment works to the grid. APPLICATION TO COMPANY Increased production from renewable sources is expected to arise from expansion of existing renewable energy plants and processes and also from acquisitions. The cost represented below is the indicative cost of our most recent acquisition in this sector - Agrivert Holdings Ltd, which substantially added to our ability to generate renewable energy and which significantly increased revenue. Our strategy to date has taken our self-generation of renewable energy from the equivalent of 33% of Severn Trent's gross energy consumption over 2015/26 to 53% in 2020/2021. Costs to realise will depend on the options available and will vary with different solutions. EXPLANATION OF COST OF MANAGEMENT As a case study example, in November 2018 Severn Trent Green Power completed its acquisition of Agrivert Holdings Ltd which operates five food waste AD plants and other facilities, achieving on average 97% electrical power output from its operations, processing 450,000 tonnes organic material per year. The takeover was widely reported to be a £120m takeover.

Comment

Identifier
Opp2

Where in the value chain does the opportunity occur?
Direct operations

Opportunity type
Resource efficiency

Primary climate-related opportunity driver
Other, please specify (Investor confidence)

Primary potential financial impact
Increased access to capital

Company-specific description
NATURE OF OPPORTUNITY It is expected that investors will become increasingly interested in sustainable product investing and there will be increased awareness around an organisations sustainability credentials, which may drive investment alongside more traditional financial indices. Demonstrating our robust and responsible approach to climate change - both adaptation and mitigation - gives us the potential to differentiate ourselves and achieve reputational benefits as well as reassuring investors that we understand risks and opportunities associated with climate change and are planning and acting appropriately. APPLICATION TO COMPANY According to a Schroder's Global Investor study in 2017, 67% of UK respondents acknowledged that sustainable investing was more important to them now than 5 years ago, citing the potential for long-term returns as a greater factor than ethical considerations, indicating that there is a preference for investing in organisations with strong green credentials. One meta analysis showed that 80% of studies show a positive effect on stock price performance where the company adhered to social or environmental standards. Meeting and exceeding our environmental targets (including our carbon targets) and acting in a sustainable way could therefore positively impact upon our reputation with stakeholders, investability and ultimately our share price. CASE STUDY We expect that consumer trends toward green investing and increased awareness of corporates' green credentials are more likely to increase in a sustainable development scenario where there is increased trends towards decarbonisation. At 2 July 2021, our market capitalisation was £6.31bn. A 1% increase in value could equate to £63.1m

Time horizon
Short-term

Likelihood
Likely

Magnitude of impact
Medium

Are you able to provide a potential financial impact figure?
Yes, a single figure estimate

Potential financial impact figure (currency)
63100000

Potential financial impact figure – minimum (currency)
<Not Applicable>

Potential financial impact figure – maximum (currency)
<Not Applicable>

Explanation of financial impact figure
Share fluctuations can occur as a result of market factors, financial performance and a range of other influencing factors. In the event that our share price would be positively impacted by leading on environmental and climate performance targets, this could result in a increase to our share price. As an indication of the impact on our company, a 1% increase in share price would equate to £63.1m. (£6.31bn * 1% = £63.1m)

Cost to realize opportunity
78484000

Strategy to realize opportunity and explanation of cost calculation
REALISING OPPORTUNITY: As a company taking care of one of life's essentials, water, we know that the resilience of our business is intrinsically linked to the resilience of our region, its communities and the natural environment. Our long-standing commitment to sustainability is demonstrated in our leadership on renewable energy generation, sustainable management of our land, and dedicated programmes to support our people and our local communities. By 2025 we will invest £1.2bn in our sustainability ambitions, including climate and biodiversity initiatives such as planting 1.3m trees and boosting biodiversity of 5,000 hectares of land. We have also committed to deliver our Triple Carbon Pledge, by 2030, where available. We regularly engage with customers and stakeholders to assess the "willingness to pay" of our stakeholders for climate and environmental initiatives, assess the NPV of carbon impacts regarding our infrastructure investments, and consider the value of natural capital alongside our financial performance indicators. We anticipate that our management methods will position the organisation as a climate leader, resulting in an attractive investment for stakeholders. We hold the Carbon Trust Standard and report to CDP each year ensuring our climate change information is publicly accessible and to ensure that we are benchmarked against our peers. This year, we also also reported against the Task Force on Climate-related Financial Disclosures and will be updating our Climate Change Adaptation Report for 2021, in line with reporting under the Climate Change Act 2008 and Defra guidelines, ensuring that we are aware of, and resilient against our climate-related risks and opportunities, within a range of climate scenarios. CASE STUDY AND COSTS As a case study example of the funding provided to meet and exceed our environmental performance obligations, Severn Trent have recently received regulatory endorsement to invest £78,484,000 in creating bathing rivers, to eliminate harm from 25 storm overflows by reducing spills in the area during the bathing season, and to create two inland bathing water trials via two large-scale pilots to deliver bathing-quality water. The trial scope will address all 25 storm overflow and storm tanks identified on the Rivers Teme Avon and Leam (£69.537m), and three wastewater treatment disinfection upgrades (£6.948m) for Itchen Bank and Frankton on the River Leam, and Ludlow on the River Teme.

Comment

Identifier
Opp3

Where in the value chain does the opportunity occur?
Direct operations

Opportunity type
Resource efficiency

Primary climate-related opportunity driver
Use of more efficient production and distribution processes

Primary potential financial impact
Reduced direct costs

Company-specific description
NATURE OF OPPORTUNITY AND APPLICATION TO COMPANY In England and Wales, leakage is treated as water lost from the distribution system. It includes water lost from the companies' distribution networks and supply pipe losses from consumers' pipes. Severn Trent has a significant programme in place to reduce leakage, as it is an important part of ensuring there are resilient water supplies in the future. Reducing leakage throughout our network will also increase headroom over water availability, decreasing the requirement for investment in additional water resources structures such as reservoirs. Reducing water leakage is a regulatory requirement set by Ofwat, our regulator and we gain financial rewards from meeting or exceeding our targets. Continuing to meet our regulatory targets will therefore result in financial gain for Severn Trent. CASE STUDY In our Water Resources Management Plan "WRMP", which considers our ability to provide water in a range of climate futures and with future demands such as increasing population, we consider how our leakage reduction proposals could impact upon our ability to provide a safe and secure supply of water.

Reducing leakage will increase the water available for supply and so increase our ability to meet demand and the complexities of our modelling is outlined within our WRMP. In addition, we have a regulatory target to reduce our leakage by 15% by 2025. In 2020/2021 we achieved a £1.17m financial reward from meeting our leakage reduction targets. We could therefore estimate that a meeting our future leakage reduction targets could equate to £1.17m annually.

Time horizon
Short-term

Likelihood
Likely

Magnitude of impact
Medium

Are you able to provide a potential financial impact figure?
Yes, a single figure estimate

Potential financial impact figure (currency)
1170000

Potential financial impact figure – minimum (currency)
<Not Applicable>

Potential financial impact figure – maximum (currency)
<Not Applicable>

Explanation of financial impact figure
In 2020/2021 we achieved a £1.17m financial reward from meeting our leakage reduction targets. We could therefore estimate that a meeting our future leakage reduction targets could equate to £1.17m annually.

Cost to realize opportunity
5000000

Strategy to realize opportunity and explanation of cost calculation
REALISING OPPORTUNITY: We proactively reduce leakage across our network by pressure management, focusing and finding leaks through data loggers and client engagement to enable efficient reporting and diagnosis for leaks. We have also optimised pressure reducing valves across the network, which was successful in reducing leakage by 35% in one area alone. We use dynamic pressure modelling to identify potential leaks and use satellite technology, partnering with electricity distribution firms who survey the grid from the air - a great vantage point to spot rural leaks. We're exploring innovative ways to use information, including the potential to overlay our pipe network data into the video software to support automation from the analysis. We have committed to reduce leakage by 15% over the next 5 years and stated our ambition to aim for a 50% reduction by 2045. CASE STUDY AND EXPLANATION OF COSTS OF MANAGEMENT To achieve this, we must find new, more innovative and cheaper ways to prevent leaks occurring and to find and fix them when we do. As a case study example, we have invested £5m into the World Water Innovation Fund, pooling resources to accelerate new technologies. In February 2020 we launched the UK's first fibre optical trial by installing cables in 750m of live network to test the capabilities to "listen" for leaks - the first step to developing a lift and shift process that can be installed allowing us to monitor sections of pipe around the clock to spot potential leaks faster and more efficiently

Comment

C3. Business Strategy

C3.1

(C3.1) Have climate-related risks and opportunities influenced your organization's strategy and/or financial planning?
Yes, and we have developed a low-carbon transition plan

C3.1a

(C3.1a) Is your organization's low-carbon transition plan a scheduled resolution item at Annual General Meetings (AGMs)?

	Is your low-carbon transition plan a scheduled resolution item at AGMs?	Comment
Row 1	Yes	

C3.2

(C3.2) Does your organization use climate-related scenario analysis to inform its strategy?
Yes, quantitative

C3.2a

(C3.2a) Provide details of your organization's use of climate-related scenario analysis.

Climate-related scenarios and models applied	Details
RCP 2.6 RCP 4.5 RCP 6 RCP 8.5 Other, please specify (UKCP09)	Specific description summary of the results of the conducted scenario analysis: The Environment Agency's 2017 Water Resources Planning Guidelines (WRPG) require companies to assess the risk and possible impact of climate change on the deployable output of their current and future sources of water. Companies can use their 2014 Water Resources Management Plan (WRMP14) assessment of climate change, or a method outlined in: • Environment Agency (2013) Climate change approaches in water resources planning – Overview of new methods • Environment Agency (2017) We carried out a vulnerability assessment to identify which of our water resource zones (WRZs) are most sensitive to the potential impacts of climate change. 10,000 climate scenarios were assessed and a Latin Hypercube Sampling was applied to select a sub-sample of 100 projections on which to base our assessments (a Drought indicator was then used to select a subset of 20). This confirmed our findings from our WRMP14 assessment, which demonstrated that our largest WRZs (the Strategic Grid and Nottinghamshire) were both vulnerable to potential changes in rainfall and temperature. With the exception of groundwater sources in the Forest and Stroud WRZ, the majority of groundwater sources were considered to be low vulnerability. However, in order to maintain spatial coherence across our WRZs (especially zones containing both surface water and groundwater sources), we have opted to apply a "high" vulnerability method to all zones to assess the potential impacts on deployable output. This approach uses the UKCP09 projections (medium emission scenario) directly.
Other, please specify (UKCP09)	A description of how the results of the scenario analysis have informed our business objectives and strategy: In our draft WRMP we did not explicitly consider the climate change uncertainty associated with our demand management measures. Instead, we focussed on the more significant climate change uncertainty associated with our supply side options. Our WRMP uses demand forecasts that reflect our assumptions around 'dry-year' demand for water, and so they reflect the impacts of hot, dry weather conditions on customers' water consumption. We also make a further allowance for the likely climate change impacts on household water consumption using the data and guidance given in UKWIR 13/CL/04/12 Impact of Climate Change on water demand . In the UKWIR study, median percentage climate change impacts on household demand at 2040, relative to 2012 are published for each river basin within the UK - the Severn and South Humber basins are used for Severn Trent. For our WRMP, the annual average forecasts use the average of the factors for these basins, therefore have a 0.905% increase in consumption over that period. As the base year for our modelling is now 2015/16 and the final forecast year is 2044/45 the percentage change is shifted along as there has been no further evidence since this report. As per the UKWIR technical guideline, the additional demand caused by climate change has been added to the external use micro-component only, which means that the overall effect is relatively small. The volumetric demand management benefit of our metering strategy indicates that a climate change impact equivalent to 0 .9% increase in demand by 2045. Consistent with the conclusions of the UKWIR study, because the impacts of our water efficiency activities on our demand forecasts already reflect the impacts of hot, dry weather any additional effects of climate change are small and only apply to external use of water. Therefore, in our WRMP we assume that climate change has no impact on our internal household water efficiency measures .
Other, please specify (UKCP09)	A case study of how the results of the scenario analysis have directly influenced our business objectives and strategy: During the consultation phase of our draft WRMP, the Environment Agency requested clarification regarding our WFD deterioration risk assessment of surface water abstraction licences, particularly those with a hands off flow (HOF) condition. In our draft WRMP, for our surface water abstractions with potential to cause WFD deterioration, we chose to analyse the effect of licence reductions for category 1 and 2 sources using a similar methodology as we used with groundwater reductions. We used this approach because we had not at that point received guidance from the Environment Agency on the preferred methodology to use with surface water abstractions. Due to the timing, our modelling was also conducted prior to WINEP3 and before the AMP6 RSA investigations and options appraisal conclusions were finalised. The methodology we adopted assessed the recent actual annual average abstraction and compared this with the modelled source deployable output. In line with the ground water methodology we looked at three different potential scenarios for our sensitivity modelling for the draft WRMP. These were the Low, Medium and High impact set of scenarios defined in section A5.2. For our draft WRMP we used the medium scenario from this earlier sensitivity modelling as our central estimate of the surface water abstraction reductions required to ensure no future WFD status deterioration. These were built into a combined model run with groundwater WFD no deterioration reductions and our assessment of the likely RSA licence reductions. These reduced abstraction licences were entered into our Aquator water resources model as annual constraints on the amount of water available to abstract. Specifically for our Egginton abstraction site on the River Dove, we modelled the potential effect of the WFD no deterioration licence reduction rather than the RSA removal of the lower HOF. We considered that modelling both changes at the same time would have been double counting of the risk and effect. During the Medium scenario for our draft WRMP we assumed that for WINEP1 category 1 and 2 surface water abstractions (Egginton, Ambergate & Mitcheldean) there would be no abstraction licence changes implemented before 2030. This is because the impact on zonal deployable output was so significant it would require strategic scale water supply investment to offset the effects on drought security of supply. Our WFD No Deterioration approach for surface water abstraction was changed for our final WRMP. In January 2018 we received updated guidance from the Environment Agency regarding WFD No Deterioration in the Environment Agency's publication 'Guidance on water resources investigations into the risk of WFD water body deterioration'. This guidance for the first time explicitly included information for analysing surface water abstractions in relation to compliance with the Environmental Flow Indicator (EFI). Consequently, it was clear that our draft WRMP methodology for modelling surface water reductions was unsuitable for certain sources e.g. Egginton, as it did not fully consider the EFI. Following the new guidance issued, in February 2018 we updated our process for assessing WFD no deterioration at surface water sites.

C3.3

(C3.3) Describe where and how climate-related risks and opportunities have influenced your strategy.

	Have climate-related risks and opportunities influenced your strategy in this area?	Description of influence
Products and services	Yes	1) Resilient water supply Our purpose is taking care of one of life's essentials, so ensuring a sustainable water cycle for the long term is at the very core of what we do. The strain on our water sources and expectations for river quality are both higher than they've ever been, which means we need to work harder to look after our water sources. Our customers are fully supportive of our commitment to a sustainable water cycle and 80% of them tell us that they trust Severn Trent to deliver our water services for future generations. (2020 sustainability report). 2) Low carbon water We seek to produce and deliver clean water to customers with lowest possible carbon emissions demonstrated through our carbon triple pledge and commitment to develop science based targets (2021 annual report). Our strategy combines leakage reduction, metering, customer education, home water efficiency audits, energy efficiency on water production sites and our networks and catchment management. In 2020/21, we reduced leakage by 2.2%, outperforming our target and putting us on a great trajectory for our 2025 commitment. We've now committed to an ambitious goal to reduce leakage by 15% by 2025, and by 50% by 2045. (Green recovery - Decarbonising Water resources business case) 3) Exporting Renewable energy & Bioresources The UK has ambitious plans to reduce its carbon emissions to net zero by 2050, and AD will play a critical role in achieving this goal. We are exploring carbon capture in our AD plants to help de-carbonise our energy generation. We self generated 53% of our own energy form renewables in 2021, up from 51% in 2020. (ARA 2021, p65). This ties in and aligns with our LTIP to achieve operational carbon reduction. 4) Our customer engagement and communication is focused on water efficiency and encouraging our customers to reduce their water usage. (Sustainability report 2021, p9). Our water efficiency programme has saved approximately 2.98 million litres of water a day. SASB index (Code: IF-WU-140a.2, 420a.2 and 440.a.3): Excluding leakage and metering, we delivered demand-side (water efficiency) benefits of 1087700 m3. (Sustainability report 2021, p79). 5) Biodiversity – we have made a big commitment with our great big nature boost to improve 5,000 ha of biodiversity (achieving 2,632 as of 2021 - annual report p18).
Supply chain and/or value chain	Yes	Our commitment to developing Science-Based Targets means that understanding our Scope 3 emissions is a priority. We are currently assessing our baseline position across all Scope 3 categories. This includes our supply chain emissions, where we are assessing ways to establish an effective baseline. This will enable us to work with our suppliers, particularly those with the highest impact, to help measure, report and reduce their emissions. In the next year we'll be engaging with our suppliers on waste, alongside other sustainability considerations, and building waste-related requirements into our supplier selection criteria. We have signed up over 1,000 of our suppliers to our Sustainable Supply Chain Charter (Annual report p7). with an aim of achieving 70% supplier engagement by 2025 with regards to scope 3 emission reduction. We are signed up to the Supply Chain Sustainability School to improve and our own knowledge so that where possible, we can focus on suppliers s whose carbon impact is high, and the mechanisms we need to put into place to support them with reporting and management. Our focus over the last year has been to establish our Scope 3 baseline, which has highlighted where these high-impact areas are, and we'll use this insight to improve the accuracy of our Scope 3 data. Importantly, it allows us to support suppliers (2021 Sustainability report, p59).
Investment in R&D	Yes	Carbon reduction is central in our innovation strategy. In the context of the Company's remuneration framework, the Committee decided that there was an opportunity to incorporate the delivery of Severn Trent's longer-term sustainability commitments within the LTIP. A sustainability-based performance measure has, therefore, been introduced this year with a weighting of 20%. This sustainability measure will focus on our public commitment to net-zero carbon emissions by 2030 as part of our Triple Carbon Pledge and gives us the opportunity to align the LTIP more closely with the Company's long-term strategy. It will focus on two equally weighted areas, 'Direct Contributors to Carbon Reduction' and 'Innovation for Carbon Reduction'. (ARA 2021, p123). In February 2020, Severn Trent and CCm Technologies were awarded an innovation grant of around £1 million from the Department for Business, Energy and Industrial Strategy ('BEIS') and the Carbon Trust to convert biosolids from our AD plants into a high-quality fertiliser (Sustainability Report, p22). The process also captures carbon dioxide from our combined heat and power ('CHP') plants, together with ammonia from our treatment works. The next step is to build a pilot plant to test the technology, a world first for the wastewater sector. If the project is successful, it will substantially reduce our carbon emissions and transportation costs and increase the agricultural markets we can sell to. Additional innovation plans: Upgrade our technology from conventional digestion to Thermal Hydrolysis Plants ('THPs'). We already have two of these plants, which use heat and pressure to treat sewage sludge, enabling the extraction of up to 30% more energy than conventional processes. Recover other valuable resources from sludge. Our Nottingham plant already recovers nitrogen and phosphorus. Explore carbon capture from our AD processes in order to decarbonise our energy generation. This has already begun, with a trial starting at Minworth in 2020. Resource Recovery and Innovation Centre (R2IC) for new technology demonstrations (Sustainability report 2021, p51).
Operations	Yes	In March 2020, we were the first water company in the UK to commit to developing Science-Based Targets (Sustainability report 2020, p24.) These were submitted for verification in 2021 (ARA 2021, p51). We have been running an energy efficiency programme for the last decade focused on improving the efficiency of our energy-intensive assets. In order to continue increasing energy efficiency, we are continuing to improve operational behaviours, monitor site energy performance, and maintain and improve our assets and processes. We encourage our teams to reduce their energy consumption at work including with recognition for teams and individuals who achieve the best energy saving measures. In the longer term, our focus on innovation in our treatment processes will also bring significant energy savings. Over the course of the last year (2020-2021) we have invested £5.6 million of capital in specific energy efficiency and flexibility schemes to control energy demand and reduce energy use. Over the course of the last six years we have invested £26 million in energy efficiency. (ARA 2021, p67) We have been taking action to reduce our transport carbon emissions for several years, buying low-emission diesel vehicles, trialing electric vehicles and fitting additional particulate filters to our HGVs. In 2019, we joined The Climate Group's EV100 group and committed to a fully electric fleet by 2030 – assuming specialist vehicles such as tankers become available within that time window. As part of our LTIP, we will be delivering 58% of the total car fleet and 16% of the total light commercial fleet as electric vehicles by 31 March 2024. (ARA 2021, p123). Methane and nitrous oxide are released during the biological treatment of waste water and unlike energy there are few incentives to reduce this source of emissions. We are proactively funding research into this area in collaboration with other water companies and developing monitoring approaches which will allow us to calculate emissions. Our aim is to have established effective monitoring on operational waste treatment sites responsible for 40% of our total N2O and CH4 gas emissions – this has been incentivised through our LTIP. We are also funding research into lower-emissions and lower-energy treatment technologies. (Annual report 2021, p123).

C3.4

(C3.4) Describe where and how climate-related risks and opportunities have influenced your financial planning.

	Financial planning elements that have been influenced	Description of influence
Row 1	Revenues Direct costs Capital expenditures Acquisitions and divestments Assets	Our revenues from Green Power in 2020 were £77.5m and we see renewable energy as a significant growth area requiring capital investment. As part of our Net Zero ambition, we have committed to a 2030 goal of sourcing 100% of our energy from renewable sources, with a focus on self-generated energy. This will reduce our operational energy costs (direct costs) to 2030, and in the short-, medium- and long-term will also increase our revenues from electricity sold back to the grid. In order to achieve growth in this area in November 2018 Severn Trent Green Power completed its acquisition of Agrivert Holdings Ltd which operates five food waste AD plants and other facilities, achieving on average 97% electrical power output from its operations, processing 450,000 tonnes organic material per year. The takeover was widely reported to be a £120m takeover. In April 2020 we were proud to win a five-year contract with Peterborough City Council to manage the City's food waste and convert it into renewable energy, reducing our direct energy costs and increasing revenues. Peterborough's food waste will be treated at Severn Trent Green Power's North London AD facility in London Colney, Hertfordshire, where 50,000 tonnes of household and commercial food waste is treated each year. Enough to power almost 6,000 homes. This site alone has the net carbon benefit equivalent of taking 71,000 cars off the road. Our Green Power business recycles over 600,000 tonnes of green and mixed food waste each year. The green energy produced from food waste forms part of Severn Trent's Triple Carbon Pledge – achieving net-zero operational carbon emissions, 100% renewable power and an all-electric fleet of vehicles by 2030, where available. We were proud to deliver on our commitment to self-generate the equivalent of 50% of our energy needs from renewable sources, a year earlier than targeted, and this year, we were pleased in Green Power to deliver our record level of generation at 267GWh of renewable energy from nine Anaerobic Digestion ('AD') sites as well as our wind, solar and hydro plants. We kept our eight food waste plants open throughout the national lockdown, to prevent food waste from heading to landfill. As a result, we saw a 17% increase in the amount of domestic food waste that arrived at our doors between March and July. During this period, our operational teams went the extra mile, recycling 126,000 tonnes and producing 50,000MWh of electricity – enough to power 11,900 homes. At the same time, our compost sites recycled over 17,000 tonnes of garden waste, producing around 8,500 tonnes of compost. (ARA 2021, P.30)

C3.4a

(C3.4a) Provide any additional information on how climate-related risks and opportunities have influenced your strategy and financial planning (optional).

Climate-related risks and opportunities are fully addressed in our various reports,

including:

Annual Report – 2021: https://www.severntrent.com/content/dam/stw-plc/shareholder-resources/ara-annual-report-2021.pdf

Sustainability report 2021: https://www.severntrent.com/content/dam/stw-plc/interactive-sustainability-report/index.html#page=1

Climate Change Adaptation Report – 2015: https://www.severntrent.com/content/dam/stw/about_us/documents/Full-Climate-change-adaptation-report-2015-2020.pdf

Greenhouse Gas Reports (also in annual report) - https://www.severntrent.com/content/dam/stw-plc/sustainability-performance-disclosure.pdf

Green Bonds - https://www.severntrent.com/content/dam/stw-plc/investors-02/Sustainability%20Financing%20Framework%202020.pdf

Water Resources Management Plan - https://www.severntrent.com/content/dam/stw-plc/water-resource-zones/2019/FWRMP19-Appendix-A.pdf

Flood resilience - https://www.severntrent.com/content/dam/stw/regulatory-library/05_Building%20sustainable%2c%20flood-resilient%20communities%20-%20Summary_FINAL.pdf

C4. Targets and performance

C4.1

(C4.1) Did you have an emissions target that was active in the reporting year?

Absolute target

C4.1a

(C4.1a) Provide details of your absolute emissions target(s) and progress made against those targets.

Target reference number
Abs 1

Year target was set
2019

Target coverage
Company-wide

Scope(s) (or Scope 3 category)
Scope 1+2 (market-based)

Base year
2019

Covered emissions in base year (metric tons CO2e)
259987

Covered emissions in base year as % of total base year emissions in selected Scope(s) (or Scope 3 category)
100

Target year
2030

Targeted reduction from base year (%)
46

Covered emissions in target year (metric tons CO2e) [auto-calculated]
140392.98

Covered emissions in reporting year (metric tons CO2e)
164116

% of target achieved [auto-calculated]
80.1637071820146

Target status in reporting year
Underway

Is this a science-based target?
Yes, and this target has been approved by the Science-Based Targets initiative

Target ambition
1.5°C aligned

Please explain (including target coverage)
This is our science-based target reduction trajectory - we have now submitted our science based targets for verification by the SBTi.

C4.2

(C4.2) Did you have any other climate-related targets that were active in the reporting year?
Target(s) to increase low-carbon energy consumption or production

C4.2a

(C4.2a) Provide details of your target(s) to increase low-carbon energy consumption or production.

Target reference number
Low 1

Year target was set
2019

Target coverage
Company-wide

Target type: absolute or intensity
Absolute

Target type: energy carrier
All energy carriers

Target type: activity
Consumption

Target type: energy source
Renewable energy source(s) only

Metric (target numerator if reporting an intensity target)
Percentage

Target denominator (intensity targets only)
<Not Applicable>

Base year
2019

Figure or percentage in base year
11

Target year
2030

Figure or percentage in target year
100

Figure or percentage in reporting year
77

% of target achieved [auto-calculated]
74.1573033707865

Target status in reporting year
Underway

Is this target part of an emissions target?
Assumptions on renewable energy production and energy use are consistent with our emissions targets.

Is this target part of an overarching initiative?
RE100

Please explain (including target coverage)
Target is 100% renewable energy which means all imported energy (electricity and fuel) will be from a renewable source, from a renewable-backed source or offset with a renewable credit (e.g. a green gas certificate)

C4.3

(C4.3) Did you have emissions reduction initiatives that were active within the reporting year? Note that this can include those in the planning and/or implementation phases.
Yes

C4.3a

(C4.3a) Identify the total number of initiatives at each stage of development, and for those in the implementation stages, the estimated CO2e savings.

	Number of initiatives	Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)
Under investigation	26	100000
To be implemented*	4	48700
Implementation commenced*	2	15430
Implemented*	5	247670
Not to be implemented	0	0

C4.3b

(C4.3b) Provide details on the initiatives implemented in the reporting year in the table below.

Initiative category & Initiative type

Energy efficiency in production processes	Wastewater treatment

Estimated annual CO2e savings (metric tonnes CO2e)
1600

Scope(s)
Scope 2 (location-based)

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in C0.4)

Investment required (unit currency – as specified in C0.4)

Payback period
Please select

Estimated lifetime of the initiative
Please select

Comment

Initiative category & Initiative type

Energy efficiency in production processes	Process optimization

Estimated annual CO2e savings (metric tonnes CO2e)
1300

Scope(s)
Scope 2 (location-based)

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in C0.4)

Investment required (unit currency – as specified in C0.4)

Payback period
Please select

Estimated lifetime of the initiative
Please select

Comment

Initiative category & Initiative type

Other, please specify	Other, please specify (Purchase of renewable energy)

Estimated annual CO2e savings (metric tonnes CO2e)
182768

Scope(s)
Scope 2 (market-based)

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in C0.4)

Investment required (unit currency – as specified in C0.4)

Payback period
Please select

Estimated lifetime of the initiative
Please select

Comment

C4.3c

(C4.3c) What methods do you use to drive investment in emissions reduction activities?

Method	Comment
Dedicated budget for energy efficiency	We have dedicated capital investment and operational budgets to contribute towards improving energy efficiency i.e. at our treatment works, on a consistent basis.
Dedicated budget for other emissions reduction activities	We have dedicated capital investment and operational budgets to contribute towards generation of renewable energy and optimization of this process.
Dedicated budget for other emissions reduction activities	We have a dedicated budget to help us achieve our target of 100% electric vehicle fleet by 2030.
Employee engagement	All company engagement event run by our CEO in summer 2020- providing an overview of our sustainability ambitions inlcuding our ambitious carbon targets and how each and every employee can contribute towards these.
Dedicated budget for other emissions reduction activities	We have a dedicated budget and performance commitment on Biodiversity. Many of these initiatives will also deliver reduced emissions through sequestration
Employee engagement	This year we ran a challenge cup competition with our employees to submit emission reducing ideas. We had 97 submissions which have been shortlist to 5 opportunities that are now under investigation
Employee engagement	We have developed and launched a design carbon calculator that our employees can self serve to evaluate capital design options based on their enviromental impacts
Employee engagement	We have an executive level bonus associated to our annual Net Zero performance measures
Employee engagement	We have an employee electric vehicle salary sacrifice scheme

C4.5

(C4.5) Do you classify any of your existing goods and/or services as low-carbon products or do they enable a third party to avoid GHG emissions?
No

C5. Emissions methodology

C5.1

(C5.1) Provide your base year and base year emissions (Scopes 1 and 2).

Scope 1

Base year start
April 1 2009

Base year end
March 31 2010

Base year emissions (metric tons CO2e)
178486

Comment

Scope 2 (location-based)

Base year start
April 1 2009

Base year end
March 31 2010

Base year emissions (metric tons CO2e)
412029

Comment

Scope 2 (market-based)

Base year start
April 1 2018

Base year end
March 31 2019

Base year emissions (metric tons CO2e)
182909

Comment
Prior to 2018-19 we purely used the location-based methodology for scope 2 reporting. From 2018-19 we began reporting both market and location-based scope 2 emissions in our annual report - to reflect the fact we were now purchasing a proportion of our supply from renewable-backed sources. We plan to continue to do this in future.

C5.2

(C5.2) Select the name of the standard, protocol, or methodology you have used to collect activity data and calculate emissions.
Defra Environmental Reporting Guidelines: Including streamlined energy and carbon reporting guidance, 2019

C6. Emissions data

C6.1

(C6.1) What were your organization's gross global Scope 1 emissions in metric tons CO2e?

Reporting year

Gross global Scope 1 emissions (metric tons CO2e)
164115

Start date
<Not Applicable>

End date
<Not Applicable>

Comment

C6.2

(C6.2) Describe your organization's approach to reporting Scope 2 emissions.

Row 1

Scope 2, location-based
We are reporting a Scope 2, location-based figure

Scope 2, market-based
We are reporting a Scope 2, market-based figure

Comment
As part of our efforts to reach carbon neutrality, we are now securing a proportion of our imported electricity from accredited renewable sources. We plan to increase the amount of renewable energy we procure in future to reduce our footprint further. We have therefore been reporting a market-based benefit and net emissions figure in our annual report to represent this since 2018-19.

C6.3

(C6.3) What were your organization's gross global Scope 2 emissions in metric tons CO2e?

Reporting year

Scope 2, location-based
182768

Scope 2, market-based (if applicable)
1

Start date
<Not Applicable>

End date
<Not Applicable>

Comment
Our market-based figure represents the fact that we secure all of electricity from our supplier backed by renewable energy guarantees of origin. The remainder is at the addition of monitoring the use of Electric vehicle for business mileage.

C6.4

(C6.4) Are there any sources (e.g. facilities, specific GHGs, activities, geographies, etc.) of Scope 1 and Scope 2 emissions that are within your selected reporting boundary which are not included in your disclosure?
No

C6.5

(C6.5) Account for your organization's gross global Scope 3 emissions, disclosing and explaining any exclusions.

Purchased goods and services

Evaluation status
Relevant, calculated

Metric tonnes CO2e
160170

Emissions calculation methodology
The majority of our emissions associated with this category have been estimated using Environmentally extended input-output analysis (EEIO). This was completed by experts, Small World Consulting (SWC) using spend data from the financial year 2019/20. EEIO combines economic information with environmental information about the emissions arising directly from those sectors to produce estimates of the emissions per unit of output from each sector. This specific model is the intellectual property of SWC and Lancaster University, and therefore specific emission factors have not been disclosed. Emissions calculated using this method account for 107,927 tonnes CO2e of this category. Emissions associated with the purchase of chemicals have been estimated using the UK Water Industry Carbon Accounting Workbook. 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. Due to availability of data, this estimation is based on purchases made in 2020/21. Emissions calculated using this method account for 57, 783 tonnes CO2e. We are currently exploring ways to improve the accuracy of our estimation through the collation of actual supplier emissions data in high impact areas.

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0

Please explain
Emissions have been estimated using spend data as opposed to actual supplier emissions data, with the exception of chemicals. There has been no material change in business activity and subsequently spend, and therefore emissions calculated using 19/20 spend data remain relevant.

Capital goods

Evaluation status
Relevant, calculated

Metric tonnes CO2e
250546

Emissions calculation methodology
All emissions within this category have been estimated using Environmentally extended input-output analysis (EEIO). This was completed by experts, Small World Consulting (SWC) using spend data from the financial year 2019/20. EEIO combines economic information with environmental information about the emissions arising directly from those sectors to produce estimates of the emissions per unit of output from each sector. This specific model is the intellectual property of SWC and Lancaster University, and therefore specific emission factors have not been disclosed. We are currently exploring ways to improve the accuracy of our estimation through the collation of actual supplier emissions data and through our Carbon Design Tool.

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0

Please explain
Emissions have been estimated using spend data as opposed to actual supplier emissions data. There has been no material change in business activity and subsequently spend, and therefore emissions calculated using 19/20 spend data remain relevant.

Fuel-and-energy-related activities (not included in Scope 1 or 2)

Evaluation status
Relevant, calculated

Metric tonnes CO2e
24443

Emissions calculation methodology
Emissions within this category have been calculated using DEFRA’s GHG conversion factors for corporate reporting. This includes 15,718 tonnes CO2e from electricity transmission and distribution for 2019/20, and due to availability of data, 8,715 tonnes CO2e from upstream well to tank for the financial year 2020/21.

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0

Please explain

Upstream transportation and distribution

Evaluation status
Relevant, calculated

Metric tonnes CO2e
17140

Emissions calculation methodology
All emissions within this category have been estimated using Environmentally extended input-output analysis (EEIO). This was completed by experts, Small World Consulting (SWC) using spend data from the financial year 2019/20. EEIO combines economic information with environmental information about the emissions arising directly from those sectors to produce estimates of the emissions per unit of output from each sector. This specific model is the intellectual property of SWC and Lancaster University, and therefore specific emission factors have not been disclosed.

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0

Please explain
Emissions have been estimated using spend data as opposed to actual supplier emissions data. There has been no material change in business activity and subsequently spend, and therefore emissions calculated using 19/20 spend data remain relevant.

Waste generated in operations

Evaluation status
Relevant, calculated

Metric tonnes CO2e
6440

Emissions calculation methodology
All emissions within this category have been estimated using Environmentally extended input-output analysis (EEIO). This was completed by experts, Small World Consulting (SWC) using spend data from the financial year 2019/20. EEIO combines economic information with environmental information about the emissions arising directly from those sectors to produce estimates of the emissions per unit of output from each sector. This specific model is the intellectual property of SWC and Lancaster University, and therefore specific emission factors have not been disclosed. We are currently exploring ways to improve the accuracy of our estimation through improved waste performance data and engagement with our waste management partners.

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0

Please explain
Emissions have been estimated using spend data as opposed to actual supplier emissions data. There has been no material change in business activity and subsequently spend, and therefore emissions calculated using 19/20 spend data remain relevant.

Business travel

Evaluation status
Relevant, calculated

Metric tonnes CO2e
343

Emissions calculation methodology
Emissions within this category have been calculated using Defra's GHG conversion factors for corporate reporting. This calculation is based on distance travelled by public transport or in employee-owned vehicles for company business. Due to availability of data, this calculation is accurate for the financial year 2020/21.

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0

Please explain
Travel data is captured through internal expenses reporting systems.

Employee commuting

Evaluation status
Relevant, calculated

Metric tonnes CO2e
1922

Emissions calculation methodology
Emissions within this category have been estimated using employee numbers and UK commuting statistics (miles by mode) from the 2019 National Travel Survey. In light of the pandemic's impact on office working, in 2020 we estimated that 3095 employees worked from home, and 3769 worked either in the field or on site. This equates to 1,922 tonnes CO2e. Given the working environment was largely unchanged throughout 20/21 we believe this figure accurately reflects our emissions for the 2020/21 financial year.

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0

Please explain
Emissions have been estimated using internal data on employee commuting statistics.

Upstream leased assets

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
We do not lease any assets.

Downstream transportation and distribution

Evaluation status
Relevant, calculated

Metric tonnes CO2e
3340

Emissions calculation methodology
Emissions within this category relate to outsourced Tankering of sludge from our sites to farmers land. Emissions are calculated using mileage recorded and converted into emissions using the Carbon Accounting workbook.

Percentage of emissions calculated using data obtained from suppliers or value chain partners
100

Please explain
Mileage data is provided by suppliers.

Processing of sold products

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
We do not process any sold products.

Use of sold products

Evaluation status
Relevant, calculated

Metric tonnes CO2e

Emissions calculation methodology
We estimate that the emissions arising from application of sludge products to others' land is 33,331.20 tonnes CO2e. These are calculated using the UK Water Industry Carbon accounting workbook.

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0

Please explain
Emissions are estimated using an Carbon accounting workbook.

End of life treatment of sold products

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
We do not have any sources of emissions from within this category.

Downstream leased assets

Evaluation status
Relevant, calculated

Metric tonnes CO2e
306

Emissions calculation methodology
Emissions within this category arise from Severn Trent owned property we lease or rent out. Severn Trent own a small number of properties in which we rent out and receive an income for. Emissions associated with this activity account for 306 tonnes CO2e of this category and has been calculated using information obtained from the properties Energy Performance Certificates (EPC).

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0

Please explain
Emissions have been calculated using actual data obtained from Energy Performance Certificates.

Franchises

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
We do not have any franchises.

Investments

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
We are not an investment company and own our own assets. Emissions arising from owned assets are captured within our scope 1 and 2 emissions.

Other (upstream)

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
We have not identified any other sources of emissions that are not already captured within the categories above.

Other (downstream)

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
We have not identified any other sources of emissions that are not already captured within the categories above.

C6.7

(C6.7) Are carbon dioxide emissions from biogenic carbon relevant to your organization?
Yes

C6.7a

(C6.7a) Provide the emissions from biogenic carbon relevant to your organization in metric tons CO2.

	CO2 emissions from biogenic carbon (metric tons CO2)	Comment
Row 1	184000	This emissions estimate is from the combustion of biogas on our site combined heat and power engines. the Biogas is produced from digestion of organic sewage sludge waste and is therefore short-cycle biogenic carbon.

C6.10

(C6.10) Describe your gross global combined Scope 1 and 2 emissions for the reporting year in metric tons CO2e per unit currency total revenue and provide any additional intensity metrics that are appropriate to your business operations.

Intensity figure
190

Metric numerator (Gross global combined Scope 1 and 2 emissions, metric tons CO2e)
346883

Metric denominator
unit total revenue

Metric denominator: Unit total
1826

Scope 2 figure used
Location-based

% change from previous year
1.5

Direction of change
Decreased

Reason for change
Decrease in scope 2 emissions to reflect decreased grid intensity and energy efficiency investment in clean water assets.

C7. Emissions breakdowns

C7.1

(C7.1) Does your organization break down its Scope 1 emissions by greenhouse gas type?
Yes

C7.1a

(C7.1a) Break down your total gross global Scope 1 emissions by greenhouse gas type and provide the source of each used greenhouse warming potential (GWP).

Greenhouse gas	Scope 1 emissions (metric tons of CO2e)	GWP Reference
CO2	47290.1	IPCC Fourth Assessment Report (AR4 - 100 year) *https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/901692/conversion-factors-2020-methodology.pdf*
N2O	51692.6	IPCC Fourth Assessment Report (AR4 - 100 year) *https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/901692/conversion-factors-2020-methodology.pdf*
CH4	59048.7	IPCC Fourth Assessment Report (AR4 - 100 year) *https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/901692/conversion-factors-2020-methodology.pdf*

C7.2

(C7.2) Break down your total gross global Scope 1 emissions by country/region.

Country/Region	Scope 1 emissions (metric tons CO2e)
United Kingdom of Great Britain and Northern Ireland	164115

C7.3

(C7.3) Indicate which gross global Scope 1 emissions breakdowns you are able to provide.
By activity

C7.3c

(C7.3c) Break down your total gross global Scope 1 emissions by business activity.

Activity	Scope 1 emissions (metric tons CO2e)
UK Water Business	153533
Severn Trent Services & Severn Trent Green Power (Renewable Generation Operations)	10582

C7.5

(C7.5) Break down your total gross global Scope 2 emissions by country/region.

Country/Region	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)	Purchased and consumed electricity, heat, steam or cooling (MWh)	Purchased and consumed low-carbon electricity, heat, steam or cooling accounted for in Scope 2 market-based approach (MWh)
United Kingdom of Great Britain and Northern Ireland	182768	1	783935.06	783935.06

C7.6

(C7.6) Indicate which gross global Scope 2 emissions breakdowns you are able to provide.

By activity

C7.6c

(C7.6c) Break down your total gross global Scope 2 emissions by business activity.

Activity	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)
UK Water business	182230	1
Severn Trent Services	538	0
Severn Trent Green Power (Renewable Generation Operations) - this business generates and exports, so import is negligible.	0	0

C7.9

(C7.9) How do your gross global emissions (Scope 1 and 2 combined) for the reporting year compare to those of the previous reporting year?

Decreased

C7.9a

(C7.9a) Identify the reasons for any change in your gross global emissions (Scope 1 and 2 combined), and for each of them specify how your emissions compare to the previous year.

	Change in emissions (metric tons CO2e)	Direction of change	Emissions value (percentage)	Please explain calculation
Change in renewable energy consumption	155569	Decreased	49	All electricity now purchased from renewable backed sources - evidenced by REGOs retired by our supplier. Last year 155,569 tons of CO2e were reduced by our additional purchases of renewable energy. Our total Scope 1 and Scope 2 market based emissions in the previous year was 319,685 tCO2e this year it is 164,116 therefore a reduction of 49%.
Other emissions reduction activities	0	No change	0	Emissions reductions achieved in scope 2 are included in the balance of the above.
Divestment	0	No change	0	No divestment this year.
Acquisitions	0	No change	0	None this year.
Mergers	0	No change	0	None this year.
Change in output	0	No change	0	No significant change this year 0.
Change in methodology	0	No change	0	No change
Change in boundary	0	No change	0	No change
Change in physical operating conditions	0	No change	0	No significant change - included within the balance of electricity scope 2 change.
Unidentified	0	No change	0	No change
Other	0	No change	0	No other significant changes

C7.9b

(C7.9b) Are your emissions performance calculations in C7.9 and C7.9a based on a location-based Scope 2 emissions figure or a market-based Scope 2 emissions figure?

Market-based

C8. Energy

C8.1

(C8.1) What percentage of your total operational spend in the reporting year was on energy?

More than 5% but less than or equal to 10%

C8.2

(C8.2) Select which energy-related activities your organization has undertaken.

	Indicate whether your organization undertook this energy-related activity in the reporting year
Consumption of fuel (excluding feedstocks)	Yes
Consumption of purchased or acquired electricity	Yes
Consumption of purchased or acquired heat	No
Consumption of purchased or acquired steam	No
Consumption of purchased or acquired cooling	No
Generation of electricity, heat, steam, or cooling	Yes

C8.2a

(C8.2a) Report your organization's energy consumption totals (excluding feedstocks) in MWh.

	Heating value	MWh from renewable sources	MWh from non-renewable sources	Total (renewable and non-renewable) MWh
Consumption of fuel (excluding feedstock)	HHV (higher heating value)	872314.85	223707.33	1096022.18
Consumption of purchased or acquired electricity	<Not Applicable>	783935.06	0	783935.06
Consumption of purchased or acquired heat	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of purchased or acquired steam	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of purchased or acquired cooling	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of self-generated non-fuel renewable energy	<Not Applicable>	196497.78	<Not Applicable>	196497.78
Total energy consumption	<Not Applicable>	1852747.69	223707.33	2076455.02

C8.2b

(C8.2b) Select the applications of your organization's consumption of fuel.

	Indicate whether your organization undertakes this fuel application
Consumption of fuel for the generation of electricity	Yes
Consumption of fuel for the generation of heat	Yes
Consumption of fuel for the generation of steam	Yes
Consumption of fuel for the generation of cooling	No
Consumption of fuel for co-generation or tri-generation	No

C8.2c

(C8.2c) State how much fuel in MWh your organization has consumed (excluding feedstocks) by fuel type.

Fuels (excluding feedstocks)
Natural Gas

Heating value
HHV (higher heating value)

Total fuel MWh consumed by the organization
119822

MWh fuel consumed for self-generation of electricity
27563

MWh fuel consumed for self-generation of heat
92259

MWh fuel consumed for self-generation of steam
0

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration
<Not Applicable>

Emission factor
0.18387

Unit
kg CO2e per KWh

Emissions factor source
https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2020

Comment
All gas use has been attributed to heat generation except at one site where it is used for dedicated electricity generation through CHP.

Fuels (excluding feedstocks)
Sludge Gas

Heating value
HHV (higher heating value)

Total fuel MWh consumed by the organization
872314.85

MWh fuel consumed for self-generation of electricity
872314.85

MWh fuel consumed for self-generation of heat
0

MWh fuel consumed for self-generation of steam
0

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration
<Not Applicable>

Emission factor
0

Unit
kg CO2e per KWh

Emissions factor source

Defra Outside of Scopes EMissions Factors

Comment
This is a biogenic source of carbon, so factor is zero - note that scope 1 footprint includes any methane escape from the process. Note that biogas generated and exported is not included here.

Fuels (excluding feedstocks)
Diesel

Heating value
HHV (higher heating value)

Total fuel MWh consumed by the organization
104000

MWh fuel consumed for self-generation of electricity
2033

MWh fuel consumed for self-generation of heat
0

MWh fuel consumed for self-generation of steam
0

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration
<Not Applicable>

Emission factor
2.54603

Unit
kg CO2e per liter

Emissions factor source
https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2020

Comment
This includes all diesel used for on site plant and vehicles owned by the company. Most of this is for transport, with a lesser proportion for standby generation.

C8.2d

(C8.2d) Provide details on the electricity, heat, steam, and cooling your organization has generated and consumed in the reporting year.

	Total Gross generation (MWh)	Generation that is consumed by the organization (MWh)	Gross generation from renewable sources (MWh)	Generation from renewable sources that is consumed by the organization (MWh)
Electricity	371000	196000	371000	196000
Heat	194000	126000	194000	126000
Steam	0	0	0	0
Cooling	0	0	0	0

C8.2e

(C8.2e) Provide details on the electricity, heat, steam, and/or cooling amounts that were accounted for at a zero emission factor in the market-based Scope 2 figure reported in C6.3.

Sourcing method
Green electricity products (e.g. green tariffs) from an energy supplier, supported by energy attribute certificates

Low-carbon technology type
Low-carbon energy mix

Country/area of consumption of low-carbon electricity, heat, steam or cooling
United Kingdom of Great Britain and Northern Ireland

MWh consumed accounted for at a zero emission factor
783935.06

Comment
REGO-Backed energy purchased from our contract energy suppliers. Suppliers provided certificate as evidence.

C9. Additional metrics

C9.1

(C9.1) Provide any additional climate-related metrics relevant to your business.

C10. Verification

C10.1

(C10.1) Indicate the verification/assurance status that applies to your reported emissions.

	Verification/assurance status
Scope 1	Third-party verification or assurance process in place
Scope 2 (location-based or market-based)	Third-party verification or assurance process in place
Scope 3	No third-party verification or assurance

C10.1a

(C10.1a) Provide further details of the verification/assurance undertaken for your Scope 1 emissions, and attach the relevant statements.

Verification or assurance cycle in place
Biennial process

Status in the current reporting year
Underway but not complete for reporting year – previous statement of process attached

Type of verification or assurance
Third party verification/assurance underway

Attach the statement
Severn Trent Carbon Certification Letter (updated) - Carbon v2.pdf
Severn Trent Carbon Certification Report (updated) - Carbon.pdf

Page/ section reference
Carbon Trust Certificate

Relevant standard
Verification as part of Carbon Trust standard certification

Proportion of reported emissions verified (%)
100

C10.1b

(C10.1b) Provide further details of the verification/assurance undertaken for your Scope 2 emissions and attach the relevant statements.

Scope 2 approach
Scope 2 location-based

Verification or assurance cycle in place
Biennial process

Status in the current reporting year
Underway but not complete for reporting year – previous statement of process attached

Type of verification or assurance
Third party verification/assurance underway

Attach the statement
Severn Trent Carbon Certification Letter (updated) - Carbon v2.pdf
Severn Trent Carbon Certification Report (updated) - Carbon.pdf

Page/ section reference
Carbon Trust Certificate

Relevant standard
Verification as part of Carbon Trust standard certification

Proportion of reported emissions verified (%)
100

C10.2

(C10.2) Do you verify any climate-related information reported in your CDP disclosure other than the emissions figures reported in C6.1, C6.3, and C6.5?
No, but we are actively considering verifying within the next two years

C11. Carbon pricing

C11.1

(C11.1) Are any of your operations or activities regulated by a carbon pricing system (i.e. ETS, Cap & Trade or Carbon Tax)?
Yes

C11.1a

(C11.1a) Select the carbon pricing regulation(s) which impacts your operations.
Other carbon tax, please specify (UK Climate Change Levy)

C11.1c

(C11.1c) Complete the following table for each of the tax systems you are regulated by.

Other carbon tax, please specify

Period start date
April 1 2020

Period end date
March 31 2021

% of total Scope 1 emissions covered by tax
29

Total cost of tax paid
6700000

Comment
The climate change levy is a government tax on use of fossil fuels and electricity and is passed directly onto us as end consumers. This value is reported in our financial accounts as 'environmental taxes'

C11.1d

(C11.1d) What is your strategy for complying with the systems you are regulated by or anticipate being regulated by?

We are committed to full compliance with all regulations, paying the right amount of tax at the right time and taking strategic advantage where we can of policy. Our dedicated energy management team takes an an active look ahead at proposed and forthcoming policy changes and what these mean to us, including how they change the economics of decisions we are making. As we actively weigh up the economics and carbon impacts of the various fuel sources we use for heat, power and electricity generation, carbon incentives have a direct impact on the economics. We are a supporter of this approach as changes to the economics are often the best way to encourage different decision making within a business. We are a strong supporter of policy support and incentives for renewable generation. As an example of our strategy, we have completed large scale deployment of renewable energy generation from sludge, food waste and solar and wind and these policies supported the business cases and strategy. We continue to improve energy efficiency and renewable energy self-generation as a means of mitigating our indirect carbon policy costs and reducing our own carbon impacts together.

C11.2

(C11.2) Has your organization originated or purchased any project-based carbon credits within the reporting period?
No

C11.3

(C11.3) Does your organization use an internal price on carbon?
Yes

C11.3a

(C11.3a) Provide details of how your organization uses an internal price on carbon.

Objective for implementing an internal carbon price
Drive low-carbon investment
Stress test investments

GHG Scope
Scope 1
Scope 2

Application
Our water resource management plan includes a carbon price which is combined with estimated scheme impacts and considered in the options cost benefit and modelling. We are now using prices of carbon reduction to compare different potential options across our carbon strategy to get to net zero. In addition, we are planning the use of an internal carbon price for scheme assessments, based with reference to the UK Government published traded price of carbon for policy assessment. This will also Drive carbon enhancing schemes and Drive carbon reduction behaviours.

Actual price(s) used (Currency /metric ton)
48.76

Variance of price(s) used
Shadow Price used in water resource management plan.

Type of internal carbon price
Shadow price

Impact & implication
In the case of the modelling for our 2018 water resource management plan, this price has made little impact on the priority order of schemes chosen to meet our supply demand balance of water. We expect our planned implementation of the wider carbon tax to make more difference and assist in funding of low carbon schemes.

C12. Engagement

C12.1

(C12.1) Do you engage with your value chain on climate-related issues?
Yes, our suppliers
Yes, our customers
Yes, other partners in the value chain

C12.1a

(C12.1a) Provide details of your climate-related supplier engagement strategy.

Type of engagement
Compliance & onboarding

Details of engagement
Included climate change in supplier selection / management mechanism

% of suppliers by number
100

% total procurement spend (direct and indirect)
100

% of supplier-related Scope 3 emissions as reported in C6.5
100

Rationale for the coverage of your engagement
All suppliers are assessed against standard environmental criteria, including climate change at tender. This criteria is tailored for larger contracts to ensure they are relevant and proportionate to the service provided or the goods procured and its associated climate impact. For example, for our chemicals tender, a sector we recognise as being a high contributor to climate change impact, specific tender questions around carbon management and carbon intensity of required products to allow for comparison were introduced. Terms and conditions have also been updated requiring the supplier to measure and report on their carbon footprint, and demonstrate a year on year improvement. A dedicated Contract Management team ensures supplier performance is monitored and non-compliance addressed to ensure improvements are made.

Impact of engagement, including measures of success
Responses to these questions contribute to the overall score and successful award of contract. In some cases, we introduce pass or fail questions at pre-qualification stage, meaning suppliers who do not meet our sustainability criteria do not progress to the next stage of tender. This is currently introduced on a project by project basis.

Comment
We are currently updating our standard supplier assessment criteria and contract clauses for all new suppliers to ensure they align with our corporate commitment to set a Science based target. The development of a relevancy matrix will allow for an effective yet proportionate supplier approach depending upon the level of climate impact associated with their operations.

Type of engagement
Compliance & onboarding

Details of engagement
Code of conduct featuring climate change KPIs

% of suppliers by number
100

% total procurement spend (direct and indirect)
100

% of supplier-related Scope 3 emissions as reported in C6.5
100

Rationale for the coverage of your engagement
We expect all our suppliers and their subcontractors to commit to and deliver against the principles set out in our Sustainable Supply Chain Charter. Compliance with this charter is stipulated in our standard contractual terms and conditions. In March 2020, we updated this to reflect a broader range of environmental and social impacts. This included a greater focus on mitigating climate change and includes the following: "As a minimum, we ask our suppliers to measure and report on their carbon footprint to us, and to demonstrate a clear commitment to reducing their carbon impact and using energy and fuel efficiently. Innovative low-carbon solutions should be adopted to reduce embodied carbon, and we look to you to increase renewable energy usage and use electric vehicles where appropriate. https://www.severntrent.com/content/dam/stw-plc/responsibility/Supply-chain-charter-for-web1.pdf

Impact of engagement, including measures of success
We currently track active sign-up to our Sustainable Supply Chain Charter and since September 2020 a further 649 suppliers have signed it, now making the total over a thousand since 2016. Active sign-up requires a signature from a senior lead, on behalf of their organisation, to confirm their commitment to delivering against our charter. Our aim is to ensure all contracted suppliers are actively signed-up and we are currently at 86%.

Comment

Type of engagement
Information collection (understanding supplier behavior)

Details of engagement
Collect climate change and carbon information at least annually from suppliers

% of suppliers by number
2

% total procurement spend (direct and indirect)
56

% of supplier-related Scope 3 emissions as reported in C6.5

Rationale for the coverage of your engagement
We prioritise suppliers based on spend and criticality to the business - these suppliers are referred to as our key suppliers. We ask each of these suppliers to commit to and deliver a specific CSR pledge, relevant to their sector, which is tracked monthly.

Impact of engagement, including measures of success
Currently 60 suppliers representing 56% of spend have pledged to drive targeted action. In 2020, we developed a standard set of pledges further targeted to drive action and encourage collaboration across key principles outlined in our charter. This includes the following: • % Reduction in fuel wastage against baseline. (Journey efficiency, vehicles, plant equipment & telematics). • % carbon footprint reduction against baseline. • % reduction in energy usage against baseline. • % use of renewable energy. • Best practise engagement session Specific targets associated with each pledge are set with each supplier. Currently 24 suppliers have committed to specific pledges to tackle carbon and energy use. For example, in 2020, a scaffolding supplier delivered a 15% reduction in carbon emissions through improved journey efficiency in comparison to the same month last year (March). Plans are in development to increase the number of suppliers delivering targeted action against climate change through pledges, which in turn will help reduce our scope 3 emissions.

Comment

Type of engagement
Engagement & incentivization (changing supplier behavior)

Details of engagement
Run an engagement campaign to educate suppliers about climate change

% of suppliers by number
100

% total procurement spend (direct and indirect)
100

% of supplier-related Scope 3 emissions as reported in C6.5
100

Rationale for the coverage of your engagement
We continue to regularly engage and communicate directly with our supply chain to raise awareness of climate change, our ambitions to tackle this, and identify collaborative opportunities to drive action. We've done this in a targeted way depending on impact and ability to influence.

Impact of engagement, including measures of success
Through direct engagement activities we have increased awareness and understanding of the issue we are seeking to address and help embed carbon considerations as part of the decision-making process and our ways of working. Initiatives include: • Continue to raise awareness of our commitments and identify ways suppliers can support these goals through our Supply Chain CSR Newsletter (issued to all suppliers). • Senior Leaders from over 24 supplier partners attended our supply Chain CSR Forum in July 2019 to share best practise, and identify areas for collaboration. Our Carbon expert delivered a session on what our triple carbon pledge means for our suppliers and facilitated a session to understand what suppliers are doing already and identify opportunities to innovate and work together in the future. 16 of the 24 suppliers committed to exploring this further, including a dedicated workshop on Electric Vehicles. • Capital (Construction) Supplier on-boarding events and quarterly supplier days held to share our CSR ambitions and investor insights. • At a Prior Information Notice (PIN) event for the Waste tender, we ran a dedicated CSR session for prospective suppliers for the first time. New questions were consequently introduced at tender, including delivery of our triple carbon pledge. • Stepped up internal engagement at business leader events and contract management and procurement team meetings to increase awareness and understanding of our carbon strategy and expectation of our supply chain to support this ambition. • In 2021, we partnered with the Supply Chain Sustainability School to help build knowledge and capability across key sustainability issues both internally, and with our supply chain. Proposed activities include set carbon learning pathways for high-impact suppliers and contract owners. • Set up a dedicated

Environmental Advisory Group, consisting of Environmental Leads from our largest contractors and Severn Trent representatives. The group meets monthly to share best practise and agree common approaches to addressing environmental issues including measurement and reduction of operational and embodied carbon. • Introduced sustainability into personal objectives for all Procurement and Contract Managers to work with suppliers to identify collaborative opportunities and develop plans to reduce carbon.

Comment

Type of engagement
Information collection (understanding supplier behavior)

Details of engagement
Collect climate change and carbon information at least annually from suppliers

% of suppliers by number
100

% total procurement spend (direct and indirect)
100

% of supplier-related Scope 3 emissions as reported in C6.5
100

Rationale for the coverage of your engagement
In 2020, experts Small World Consulting, completed Environmentally-Extended Input-Output Analysis (EEIO) on our spend data, enabling us to establish our estimated scope 3 upstream baseline for the first time across the Severn Trent Group.

Impact of engagement, including measures of success
This analysis highlighted high impact supplier categories which will allow us to take a targeted approach to the collection of actual carbon data and importantly engagement with those suppliers to encourage the adoption of a science-based target themselves. This will improve the accuracy of our scope 3 emissions footprint, and overall reduction in emissions associated with purchased goods and services in particular. As outlined in our 2021 Sustainability Report, we are committed to engaging with over 70% of our supply chain by emissions, to set a science based target themselves. An engagement strategy is currently in development, including exploring the feasibility of automated data collection and assessment tools such as EcoVadis and CDP's Supplier Programme. This online platform will allow us to obtain actual carbon data from our supply chain in order to replace estimates, and assess and grade suppliers based on their approach to tackling climate change. This sustainability assessment tool will also allow for supplier specific improvement plans to be created where required. We intended on launching this tool in the financial year 2021/22. In addition, Our One Supply Board, comprising of senior leads from our key tier 1 capital partners and Severn Trent representatives, are currently working on a co-ordinated carbon reduction strategy. An initial Thought Process Map (TMAP) workshop was held in June 2021 to identify opportunities for standard and consistent working practises in relation to carbon reporting, targets and site standards across our capital projects. A dedicated working group of Severn Trent and Tier 1 Capital Partners is currently being set up.

Comment

Type of engagement
Engagement & incentivization (changing supplier behavior)

Details of engagement
Other, please specify (Mandatory carbon reduction requirements introduced within our Design Manual.)

% of suppliers by number

% total procurement spend (direct and indirect)

% of supplier-related Scope 3 emissions as reported in C6.5
49

Rationale for the coverage of your engagement
In 2021, we updated our Design Manual to help reduce our environmental impact from our construction activities by mandating clear requirements for all capital contractors. Capital Goods account for 49% of our estimated scope 3 emissions baseline.

Impact of engagement, including measures of success
Our Design Manual now mandates the following requirements for all contractors: - The use of our (Severn Trent) carbon tool to calculate the embodied and operational carbon for all considered options at every stage of the project - Application of the principles of low carbon hierarchy to all design options - A mandatory 30% embodied and operational carbon reduction target to be delivered against the stated 'total carbon' figure provided in the works order – calculated using our carbon tool. These new requirements were introduced in March 2021, and will potentially lead to a significant reduction in our embodied and operational carbon emissions.

Comment

Type of engagement
Innovation & collaboration (changing markets)

Details of engagement
Other, please specify (Collaboration with University of Nottingham MBA Students)

% of suppliers by number
100

% total procurement spend (direct and indirect)
100

% of supplier-related Scope 3 emissions as reported in C6.5
100

Rationale for the coverage of your engagement
In July 2021, we set MBA students from the University of Nottingham 2 challenges to help drive carbon commitment, reporting and adoption of reduction measures across our supply chain. Feasible recommendations will be adopted and applied as standard across our supply chain processes.

Impact of engagement, including measures of success
Two separate groups were tasked with the designing and delivering a research led project to resolve the following challenges: • Supply chain engagement: How can we bring about change and get the best from our supply chain; encouraging and incentivising them to ensure they support our net zero commitments • Internal engagement: How can change be effected internally to ensure successful engagement with our supply chain, in relation to carbon? What internal and/or cultural factors influence and

impact on this strategic change? Key stakeholder interviews have been undertaken, and tangible outputs are expected to be presented later this month via presentations and follow up reports. Recommendations will be reviewed internally ahead of implementation. Successful adoption of recommendations posed could potentially lead to increased supplier engagement in setting a science-based target themselves and adoption of carbon reduction activities.

Comment

Type of engagement
Innovation & collaboration (changing markets)

Details of engagement
Run a campaign to encourage innovation to reduce climate impacts on products and services

% of suppliers by number
0.4

% total procurement spend (direct and indirect)

% of supplier-related Scope 3 emissions as reported in C6.5

Rationale for the coverage of your engagement
In June 2021, we kicked off a Triple Carbon Pledge Hackathon focused on reducing our process emissions. Over 11 of our key design and capital contractors were invited to pitch innovative solutions to address this challenge. In 2021, we had a supplier base of 2400 as outlined in our latest sustainability report.

Impact of engagement, including measures of success
We have worked closely with Leading Edge, a platform that facilitates and connects business to solve problems with innovative solutions. Our problem statement asked for solutions which deliver incremental reductions/ removal of Scope 1 process emissions, including Methane and Nitrous Oxide, through modification of our existing assets or step change reductions through the adoption of new assets. Solutions presented are currently being reviewed internally and will be reported in our next submission. Successful solutions will lead to the reduction of emissions in one of our most challenging areas - process emissions.

Comment

Type of engagement
Innovation & collaboration (changing markets)

Details of engagement
Run a campaign to encourage innovation to reduce climate impacts on products and services

% of suppliers by number
1

% total procurement spend (direct and indirect)
28

% of supplier-related Scope 3 emissions as reported in C6.5
49

Rationale for the coverage of your engagement
A research project has been commissioned to asses and understand the baseline emissions from construction materials currently used in our capital delivery programme and review potential lower carbon alternatives that could be implemented. Cost impact, carbon reduction potential, compliance with existing asset standards, technology readiness and supply chain viability will all be considered. Capital goods accounts for 49% of our estimated scope 3 emissions baseline. This activity will affect our highest impact capital suppliers. Based on 2019/20 estimated emission values (as outlined in C6.5) applied to a 20/21 spend, we estimate this to affect 26 suppliers which make up 1% of our 2,400 supplier base and 28% of our 2020/21 spend. The % of scope 3 emissions this covers will be updated when we calculate our performance for the next financial year.

Impact of engagement, including measures of success
Phase 1 of this project is currently underway to establish the baseline, priority materials and areas of focus for low carbon alternatives in phase 2. Phase 2 will involve a desk-based research exercise to identify the broadest range of low carbon alternatives available but also try and bring in practical experience of how these materials have performed on other projects where possible. We will report on the project's output in our next submission. The output of this report has the potential to significantly reduce our scope 3 footprint, in particular emissions associated with Capital Goods, through the adoption of feasible low-carbon alternative materials. We will look to quantify and report on impact over the next year.

Comment

C12.1b

(C12.1b) Give details of your climate-related engagement strategy with your customers.

Type of engagement
Education/information sharing

Details of engagement
Run an engagement campaign to educate customers about the climate change impacts of (using) your products, goods, and/or services

% of customers by number
10

% of customer - related Scope 3 emissions as reported in C6.5

Portfolio coverage (total or outstanding)
<Not Applicable>

Please explain the rationale for selecting this group of customers and scope of engagement
We want to inspire a generation to use water wisely and understand its importance to health and wellbeing, so we're taking an innovative roadshow – the Wonderful Water Tour – into playgrounds across our region. Our dedicated team of Education Officers offers every primary school in our region a visit, holding assemblies and workshops that support the Key Stage 2 water curriculum, as well as cross-curricular links to Maths, Geography and Science. (Sus report 2020, P42). The topic of climate change and

‘saving the planet’ is incorporated throughout our education programme. Key topics covered are: • Using wonderful water wisely (not wasting water) • Knowing what not to put down the toilet and the sink • Choosing tap water for a healthy you and a healthy environment (reducing plastics) We have focussed our education programme on school children in order to inspire a generation to drive behavioural change. Experts have cited that children aged between 7-11 are the most receptive to learning and embedding behaviours for life – this is support by UKWIR report and Ofwat. (ARA 2021, P18)

Impact of engagement, including measures of success
We’ll work with our customers to improve how water is valued by extending our water education programme. Our education programme has an outcome delivery incentive associated with it, and is monitored by Ofwat (155,250 behaviour change commitments by 2025 – Sus report 2020, P61). This measure has changed for AMP7. Alongside our education programme we are also engaging with customers to drive behaviour change. During the year, our Education Team launched online lessons to support our customers and communities across Severn Trent and Hafren Dyfrdwy with home schooling during lockdown. These interactive sessions ran four times a day across the week, providing children (and adults) with engaging lessons about the water cycle, the importance of looking after our sewers and caring for the environment. Since October 2020 we’ve live-streamed more than 500 hours of content and secured over 40,000 commitments. (ARA 2021, P18) As we are looking to inspire these behaviours for life, the biggest impacts will likely be felt when the children we’ve educated have grown up and we see the impact in the future. We therefore see these impacts in the round through a contribution to reducing customers water usage and blockages. From 2020 onwards, we will collect behaviour change commitments around saving water, drinking more tap water for a healthy lifestyle and a plastic-free environment, and avoiding sewer blockages – allowing us to measure the impact of our work more accurately. Educated 800,000 customers over 2015-2020, so 10% of our 8 million customers. (Sus Report 2020, P43)

Type of engagement
Collaboration & innovation

Details of engagement
Other, please specify (We plan to increase the proportion of metered households to 65% in 2020-25, with full metering by 2035. This will require us to treble our current run-rate.)

% of customers by number
48

% of customer - related Scope 3 emissions as reported in C6.5

Portfolio coverage (total or outstanding)
<Not Applicable>

Please explain the rationale for selecting this group of customers and scope of engagement
Compulsory metering can still only be undertaken in areas classified by the EA as seriously water stressed. So, we aim to achieve our targets by installing meters proactively and offering customers the opportunity to switch based on information on what their measured bill would be. We recognise that this is an ambitious target which involves real risk, it is nonetheless, the best option for customers. (Sus report 2020, P15). The roll out will be undertaken on a water resource zone basis, targeting the zones with the greatest supply and demand challenges first. Will be 65% customers by 2025 - currently 48% of billed customers have measured water consumption. Water demand will be reduced by 8Ml/d through a combination of accelerated metering (3Ml/d), tackling customer pipe leakage (1Ml/d)14 and groundbreaking partnerships with 3,000 high-use business customers in the East Midlands to set up grey water systems reducing reliance on the mains water supply (4Ml/d).

Impact of engagement, including measures of success
We expect the increase in meter coverage to deliver a demand saving of around 10 Ml/d by 2025. . (website - https://www.severntrent.com/sustainability-strategy/environment/water-management/)

Type of engagement
Education/information sharing

Details of engagement
Run an engagement campaign to educate customers about the climate change impacts of (using) your products, goods, and/or services

% of customers by number
33

% of customer - related Scope 3 emissions as reported in C6.5

Portfolio coverage (total or outstanding)
<Not Applicable>

Please explain the rationale for selecting this group of customers and scope of engagement
We provide free and discounted water efficiency devices through our partners savewatersavemoney – i.e. water butts and tap aerators. In the first 6 months of 2020 we have fulfilled over 30,000 orders for free water saving products. (Website - https://www.stwater.co.uk/wonderful-on-tap/save-water/you-can-make-a-difference/) We have had promoted our water saving messages across TV, Radio and web – reaching around 2 million people, and our social media reach has been over 130 million people. In June we ran a series of social posts across Facebook promoting water efficient behaviours and free devices. We’ve targeted our communications to particular customers – such as offering metered customers free water saving products with additional outdoor water saving tips depending on audience segmentation for example- swell gels (to reduce water use in gardening) to older generation and paddling pool alternatives to younger customers. We’ve targeted customer who have a particularly high water use, to offer them devices such as leak detection tablets and free water efficiency audits. We have promoted our environmental grant schemes to farmers to encourage them to create their own back up water supplies. We are working hard to understand our customer behaviour and are using insights from behavioural psychologists and customer and employee surveys to understand water use during hot weather – and using this insight to ensure our messaging is as targeted and effective as possible to motivate customers to change their water use. Our TV advert focused on taking care of our precious resource and was seen by over 3.5 million people in our region. In acceptability research involving over 2,000 household customers, we found that 83% supported us, and 14% didn’t mind our proposals in principle. (Life beyond the pandemic 2020, P4).

Impact of engagement, including measures of success
It takes a while for these communications to have an impact of customer water usage, but orders for our water saving devices so act as a good interim measure. We have some tracker data on ownership and consideration of water saving devices, attitudes to saving water and climate change. We have recently added questions about usage of hoses, sprinklers, paddling pools etc.

Type of engagement
Collaboration & innovation

Details of engagement
Other, please specify (Customer research to understand expectations around climate change in business planning)

% of customers by number
0.06

% of customer - related Scope 3 emissions as reported in C6.5

Portfolio coverage (total or outstanding)
<Not Applicable>

Please explain the rationale for selecting this group of customers and scope of engagement
In development of our business plan 2020-2025 we undertook large amounts of customer research, consulting with 32,000 customers to understand their views – these focused specifically on supply and demand, resilience and water trading. An output of this engagement showed customer support and awareness for climate change investment. (Sus Report 2021, P15) In additional to these research projects we keep a live dialogue with our customers through Tap Chat, to constantly build our understanding of their views. Tap Chat is our online community of around 15,000 customers. Through this we can conduct customer research. Over the last few years we have used this community to understand our customers views of climate change topics such as carbon and green energy, our triple carbon pledge and their concerns and priorities for the next 30 years. This year we have conducted more than 20 surveys and discussions on Tap Chat, exploring customer views on a wide range of topics from being a purposeful company to managing roadworks better. The community is a valuable critical friend that, together with our ongoing customer tracking research and growing data analytics capability, helps to bring the customer perspective into our daily decision making. (Serving our customers and communities 2020-2025, P54). Nearly all of this research is deliberative/qualitative – which is the right approach for topics like this, which customers are not familiar with, or are about events in the future. Only the Water Trading project and triple carbon pledge projects had numerical outputs.

Impact of engagement, including measures of success
Tap Chat our online community helps ensure we keep a live and current debate with customers, giving us the ability to get real time information and opinions. Impact of engagement, including measure of success: All of our PR19 research helped to shape our business plan, including our ODIs. We use our ongoing dialogue with customers via TapChat to influence our strategy and our approach to communication. Across PR19 research and ongoing research through tap chat we engaged with nearly 50,000 customers, which is 0.6% of 8 million customers

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Type of engagement
Collaboration & innovation

Details of engagement
Other, please specify (Working with businesses/farmers to encourage grey water recycling and reduce run offs to water bodies)

% of customers by number
66

% of customer - related Scope 3 emissions as reported in C6.5

Portfolio coverage (total or outstanding)
<Not Applicable>

Please explain the rationale for selecting this group of customers and scope of engagement
Our catchment-management programme, Farming for Water, works directly with farmers to reduce discharges, at the same time as boosting on-farm biodiversity, providing grants and free advice to help achieve our aims, and improve the farm environment. Now we are investing to expand Farming for Water further. Through extensive analysis, we've identified areas where water quality is especially sensitive to how the land and crops are managed, allowing us to prioritise. In some of our catchments we estimate we can reduce farming's contribution to phosphates in watercourses by up to 66% therefore reducing chemical use (scope 3 emissions) and energy use (scope 2) emissions on our wastewater treatment works. Our plans go beyond our regulatory commitments, covering 44 catchments across 432,000 hectares. We aim to work with two-thirds of all farmers in our region and are ahead of our 2025 regulatory target for 38% of the catchments. (Sus report 2021, P.32) We'll work with around 9,000 farmers to find sustainable ways to improve long-term water quality. (Sus report 2021, P.32) By working with farmers to install phosphate-reducing interventions like wetlands, hedgerows and grass buffer strips at the edge of fields, and by encouraging regenerative agriculture approaches, we can reduce phosphate levels by 50% more than through traditional treatment technology. (Sus report 2021, P.28)

Impact of engagement, including measures of success
Across our region, 139,000 diverse saplings were planted by farmers through our new Hedgerow and Woodland scheme, increasing carbon sequestration. (ARA 2021, P.18) At the end of year 1, we are ahead of Farming for water catchment target with six catchments, and remain on track to meet the 2025 target with a further 10 catchments (target is 16 catchments), meaning less run off into rivers which will reduce the need for infrastructure for phosphorus removal at wastewater treatment works. (Sus report 2021, P.32) In 2020-2021, we've managed 1,811 COVID-safe meetings with farmers, received 429 Severn Trent Environmental Protection scheme grants (STEPS) applications, signed 42,542 hectares of high-risk crops (those needing a lot of pesticide) up to our Farm to Tap scheme, and removed three tonnes of unwanted pesticides from farms. We also launched our Swap your Nozzle scheme, ensuring over 30,000 hectares of agricultural land now has pesticides applied with more accurate low-drift nozzles – reducing the risk of pesticides drifting into watercourses. THis will reduce energy use on works and chemical use for phosphorus removal, targeting scope 2 and scope 3 emissions. (Sus report 2021, P.32)

C12.1d

(C12.1d) Give details of your climate-related engagement strategy with other partners in the value chain.

Colleagues - Our colleagues are vital in delivering our climate strategy (developing and meeting science-based targets and our triple carbon pledge). We can only achieve these commitments through the engagement of our workforce. We promote our climate strategy and performance to colleagues through various media. We have dedicated an all company 'team talk' to our triple carbon pledge. Pre COVID our CEO started her all employee engagement tour - focused specifically on sustainability, including our carbon commitments. This was moved to a virtual tour as COVID progressed, ensuring the engagement continued whilst a significant percentage of our workforce worked from home.

UK public through Refill initiative. Severn Trent region has over 2000 refill stations in region. We have also trialed water bars – temporary water provision at events – and due to demand have included these as an option within our community fund offering, so customer can have free tap water provision at events to help reduce plastic. Throughout press releases and local promotion of the refill scheme over 30% of customers recalled the refill initiative

Wider stakeholders - In 2020 we published our first dedicated sustainability report which has been followed up with a 2021 version. The sustainability reports were designed to be accessible to a wide ranging audience, without technical sustainability knowledge – as we know from our research that our customers and wider stakeholders are keen to further understand our approach to sustainability, and specifically support our climate change investment (evidenced through our PR19 customer research). Both reports are hosted on our webpage and the first has been downloaded nearly 400 times. Our customer tracker survey monitors KPIs including satisfaction, trustworthiness, value for money and affordability. It also monitors customer attitudes around water use/saving water and climate change, as well as awareness of our water efficiency work and free and discounted water saving products – these are key metrics we will track in the coming months following publication of our sustainability report and wider sustainability messaging directed at our customers.

C12.3

(C12.3) Do you engage in activities that could either directly or indirectly influence public policy on climate-related issues through any of the following?
Direct engagement with policy makers

C12.3a

(C12.3a) On what issues have you been engaging directly with policy makers?

Focus of legislation	Corporate position	Details of engagement	Proposed legislative solution
Other, please specify (Reduce the volume of water in the sewage network)	Support	We are engaging on relevant legislation, regulation and government spending priorities. Acknowledging climate change is a serious risk – mitigation and adaption are necessary	We're generally lobbying for new policy/spending, rather amendments to existing – measures in England. This year has seen our Company successfully achieve a series of important milestones, culminating in Ofwat proposing on 17 May 2021 that we can invest £565 million (2017/18 prices) in our ambitious Green Recovery programme. This will deliver long-term growth for the Company alongside new investment to support our ESG ambitions. (ARA 2021, p8) We provided a submission to the Environmental Audit Committee about water quality in rivers, setting out the state of play and suggested next steps. In addition: 1. Maintain commitment to kerbside waste food collection by 2023 (to be used as renewable energy). 2. Maintain stable incentives framework for renewables, especially AD (to encourage private sector investment). 3. Introduce 'Green Makeovers' for public sector buildings and existing housing stock to encourage decarbonisation and water efficiency. 4. Roll out planting of trees to help with decarbonisation, reduce flooding and improve water quality. We are aiming to reduce the volume of water in the sewage network by: 1. Changing building regulations to promote water efficiency. 2. Introducing new water efficiency labelling of household appliances (as per Australia) 3. Ensuring all new developments have separated surface and foul water sewers. 4. Withdrawing the right to make new surface water connections to the sewer network – instead promoting reliance on 'Sustainable Drainage.' 5. Requiring the government to promote retrofitting SUDS.
Other, please specify (Nature based solutions and biodiversity)	Support	We are engaging on relevant legislation, regulation and government spending priorities.	1. Accelerate PR24 investment to improve the health of rivers. 2. Change incentives for farmers: pay for ecosystem services, not pollution. Healthy biodiversity is good for the planet and helps reduce water bills in the long term
Other, please specify (Reducing Carbon emissions)	Support	Directly fed into development of Water UKs public interest commitments - include an industry wide commitment to net zero. We directly fed into committee on climate change report on reducing UK emissions - providing evidence of increased household water use during hot weather.	We think the right solution is for sectors and companies to set their own stretching carbon reduction targets and monitor against these in their annual report and accounts as we do. Supportive of committee on climate change finding and the need to further reduce UK carbon emissions - specifically the role that business have to play in the UKs net zero objectives and creation of specific water conservation legislation that will reduce emissions
Other, please specify (Electric vehicles)	Support	Severn Trent are part of EV100 which is a global initiative bringing together companies committed to accelerating the transition to electric vehicles by 2030. The aim is that the collective power of the companies will help to build demand and send signals to the market as well as influence government policies on electric vehicles. We have worked with an organisation called Cenex, to review and validate our electric vehicles strategy and they have replied to consultations to Government which we have provided input too. Cenex is the Low Carbon and Fuel Cells Centre of Excellence, an independent non-profit research and consultancy that helps private and public sector organisations devise ULEV strategies. We have completed modelling and analysis on the UK commercial fleet to demonstrate the impact of Government grants and how it can help impact on the adoption of electric vehicles, which was shared with government through our CEOs role as CEO of the council for sustainable business.	Supportive of electric vehicle grants – supportive of collaboration opportunities and supporting signalling to the market demand for electric fleet. Policies are shaped by OLEV (Office for Low Emission Vehicles) and recent policies and schemes have included and we support these, they apply across UK: - Electric vehicle homecharge, workplace charging and on-street residential chargepoint scheme - Government vision for the rapid chargepoint network in England - Green number plates https://www.gov.uk/government/organisations/office-for-low-emission-vehicles

C12.3f

(C12.3f) What processes do you have in place to ensure that all of your direct and indirect activities that influence policy are consistent with your overall climate change strategy?

We have a clear commitment and approach to climate change through our triple carbon pledge and commitment to develop science-based targets. This position is clearly articulated in our sustainability framework which brings together our approach to sustainability.

We have several layers of governance that ensure our approach to climate change is consistent across the business, including an executive level energy steering group who meet quarterly, an executive level sustainability steering committee who provide an overview of our approach to sustainability and our overall approach is also overseen by our Corporate Sustainability Committee; which comprises our Board Chair and three members of the Board and meets at least once a quarter.

The duties of the committee include (but are not limited to) *to consider and recommend to the Board:*

- the Group's overall approach to Corporate Sustainability and ensure it is in alignment with the Group Strategy and, if appropriate, recommend amendments to the above policies to the Board;

- develop and recommend to the Board Corporate Sustainability targets and key performance indicators and receive and review reports on progress towards the achievement of such targets and indicators;

to ensure:

- the creation of environmental standards, particularly those that relate to the activities where Severn Trent has its most significant environmental impacts in respect of energy management and climate change, water quality, resource productivity (including leakage and waste) and biodiversity and land use;

Responses to consultations are approved by a company Director, who has an overview of the company engagement strategies. Engagement on climate change issues and company policy are coordinated by our central strategy and regulation team. This helps to ensure consistency in approach between our strategy and our influencing activities.

C12.4

(C12.4) Have you published information about your organization's response to climate change and GHG emissions performance for this reporting year in places other than in your CDP response? If so, please attach the publication(s).

Publication
In mainstream reports, incorporating the TCFD recommendations

Status
Complete

Attach the document
ara-annual-report-2021 (1).pdf

Page/Section reference
Pages 51 - 67. Commitments on climate change & TCFD

Content elements
Governance
Strategy
Risks & opportunities
Emissions figures
Emission targets

Comment

Publication
In voluntary sustainability report

Status
Complete

Attach the document
Severn_Trent_plc_Sustainability_Report_2021.pdf

Page/Section reference
Page 17 - Carbon & climate change Page 35 - Mitigating climate change

Content elements
Strategy
Risks & opportunities
Emissions figures
Emission targets

Comment

Publication
Other, please specify (Green Recovery Documents - Decarbonising Water Resources)

Status
Complete

Attach the document
04_Decarbonising Water Resources - Summary_FINAL (1).pdf

Page/Section reference
Pages 2-4

Content elements
Governance
Strategy
Emission targets

Comment

C15. Signoff

C-FI

(C-FI) Use this field to provide any additional information or context that you feel is relevant to your organization's response. Please note that this field is optional and is not scored.

C15.1

(C15.1) Provide details for the person that has signed off (approved) your CDP climate change response.

	Job title	Corresponding job category
Row 1	Chief Financial Officer	Chief Financial Officer (CFO)

Submit your response

In which language are you submitting your response?

English

Please confirm how your response should be handled by CDP

	I am submitting to	Public or Non-Public Submission
I am submitting my response	Investors	Public

Please confirm below

I have read and accept the applicable Terms