

## W0. Introduction

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### W0.1

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#### (W0.1) Give a general description of and introduction to your organization.

SSE is a UK-listed energy company, operating across the UK and Ireland and in carefully selected international markets including East Asia, Europe and North America. It is involved in the generation, transmission, and distribution of electricity; and in the supply of electricity, gas and related services to customers. It is a leading generator of renewable electricity in the UK and Ireland and one of the largest electricity network companies in the UK. SSE's purpose is to provide energy needed today while building a better world of energy for tomorrow; and its vision is to be a leading energy company in a net-zero world. Its strategy is to create value for shareholders and society in a sustainable way by developing, building, operating and investing in the electricity infrastructure and businesses needed in the transition to net zero.

SSE's strategy is aligned to the ambitions set out in the Paris Agreement and an accelerated power sector pathway to net zero consistent with global warming of no more than 1.5oC. SSE also aims to increase the resilience of its business by adapting to the impact of a changed climate.

SSE aims to achieve net zero across scope 1 and 2 emissions by 2040 at the latest (subject to security of supply requirements) and for remaining scope 3 emissions by 2050 at the latest. SSE will, first and foremost, take action to reduce emissions as low as possible and its Net Zero Transition Plan sets out the key actions it is taking to achieve its targets to drive progress towards its net zero ambitions. Only when abatement is maximised will SSE deploy technologies or nature-based solutions that will neutralise any residual emissions.

#### SSE's businesses and how they contribute to net zero:

SSE's businesses are well positioned to capture the growth opportunities generated by driving and accelerating the net zero agenda through electricity infrastructure:

- **SSE Renewables:** develops, finances, constructs and operates in assets that generate electricity from renewable sources.
- **SSE Thermal:** owns and operates conventional flexible thermal generation in GB and Ireland and around 40% of GB's conventional underground gas storage capacity. These assets provide much-needed system flexibility. SSE Thermal is actively developing options to progressively decarbonise its portfolio (most notably in carbon capture and storage and hydrogen technologies, with biofuel as a bridge into hydrogen).
- **SSEN Transmission:** owns, operates and develops the high voltage electricity transmission network in the north of Scotland.
- **SSEN Distribution:** owns, operates and maintains the electricity distribution networks in the north of Scotland and central southern England.
- **SSE Energy Customer Solutions:** SSE Business Energy in GB (non-domestic) and SSE Airtricity on the island of Ireland (domestic and non-domestic) provide a shopfront and route to market for SSE's generation, renewable green products and low-carbon energy solutions.
- **SSE Distributed Energy:** brings low-carbon energy solutions to business-to-business markets including heat networks, solar, battery and EV charging solutions.
- **SSE Energy Portfolio Management:** trades commodities in wholesale markets and manages volatility through risk-managed trading of energy-related commodities for SSE's market based businesses.

#### CDP Water Report

This is SSE's 8th year reporting on water-related issues. SSE has focused on the material water-related activities associated with its electricity generation activities and the impact of severe weather on its electricity networks business:

**Hydro-electricity generation:** SSE Renewables operates 1,459MW of hydro generation capacity (inc pumped storage). This includes 91 hydro dams in the north of Scotland with a water catchment area of 5,382 sq. miles. At hydro generation sites water is taken from rivers and lochs and returned to the water almost immediately after being run through the turbines to generate electricity.

**Thermal generation:** SSE Thermal's generation business is now dominated by gas generation, its last coal-fired power station closed in March 2020. It has a small number of oil-fired generation units. Water is used in a several operations such as for cooling and as process water.

**Electricity network resilience:** Increased severity of extreme weather events such as storms and flooding can damage the network assets resulting in interruption to customer supply, the loss of incentive revenue and increased maintenance.

**NOTE:** SSE's reported capacities and output at 31 March 2023 are in line with its Sustainability Report 2023 and exclude its Joint Ventures. The output volumes refer to the renewable and thermal power generation plant (including the Power Purchase Agreement at Marchwood) that SSE operates to generate electricity.

## W-EU0.1a

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#### (W-EU0.1a) Which activities in the electric utilities sector does your organization engage in?

- Electricity generation
- Transmission
- Distribution
- Other, please specify (Energy retail - household and business, and gas storage)

## W-EU0.1b

(W-EU0.1b) For your electricity generation activities, provide details of your nameplate capacity and the generation for each technology.

	Nameplate capacity (MW)	% of total nameplate capacity	Gross electricity generation (GWh)
Coal – hard	0	0	0
Lignite	0	0	0
Oil	966	11.2	341
Gas	3695	43	13961
Biomass	15	0.2	68
Waste (non-biomass)	0	0	0
Nuclear	0	0	0
Fossil-fuel plants fitted with carbon capture and storage	0	0	0
Geothermal	0	0	0
Hydropower	1459	17	3338
Wind	2457	28.6	6259
Solar	0	0	0
Marine	0	0	0
Other renewable	0	0	0
Other non-renewable	0	0	0
Total	8591	100	23966

## W0.2

(W0.2) State the start and end date of the year for which you are reporting data.

	Start date	End date
Reporting year	April 1 2022	March 31 2023

## W0.3

(W0.3) Select the countries/areas in which you operate.

Ireland  
United Kingdom of Great Britain and Northern Ireland

## W0.4

(W0.4) Select the currency used for all financial information disclosed throughout your response.

GBP

## W0.5

(W0.5) Select the option that best describes the reporting boundary for companies, entities, or groups for which water impacts on your business are being reported.

Companies, entities or groups over which operational control is exercised

## W0.6

(W0.6) Within this boundary, are there any geographies, facilities, water aspects, or other exclusions from your disclosure?

Yes

## W0.6a

**(W0.6a) Please report the exclusions.**

Exclusion	Please explain
Joint Ventures	<p>SSE has excluded any joint ventures in which it does not have operational control. For scope 3 investment category, SSE has excluded any joint ventures where SSE has an equity ownership of less than 50%. For a full list of SSE's subsidiary undertakings, partnerships, joint ventures and associates, please refer to pages 289 to 299 of SSE's Annual Report 2023.</p> <p>All joint ventures where SSE does not have operational control have been excluded from SSE's water reporting. This applies to the Seabank, Saltend and Indian Queens power stations, therefore they are excluded from the reporting boundary.</p> <p>This also applied to Neos Networks. In the year ending 31 March 2019, the SSE Group disposed of 50% of its stake in Neos Networks Limited (formerly SSE Telecommunications Limited). SSE retains a 50% joint venture investment in Neos Networks Limited, but the Group does not have operational control over the activities undertaken by the company.</p>
Supply chain	<p>The data for water withdrawal, discharge and consumption detailed in this report excludes data for SSE's suppliers.</p> <p>Collecting accurate and consistent data from SSE's supply chain is difficult. In the short to medium-term, SSE's Procurement team will be exploring different methods to start collecting water-related information from SSE's supply chain.</p>
Thermal Power Purchase Agreements	<p>SSE has excluded power stations where the Company does not have operational control but does have a Power Purchase Agreement (PPA) in place. For example, this includes water withdrawal, discharge and consumption data at the Marchwood power station.</p>
International operations	<p>SSE has recently extended its renewables expansion to carefully selected international markets including East Asia, Europe, and North America. The activities involve onshore and offshore wind project development opportunities in these markets.</p> <p>SSE's activities overseas cover employees based at small offices working on renewable energy development opportunities. Overseas operations are considered de-minimis as water withdrawal, consumed and discharged from SSE Renewables' international activities fall under SSE's materiality threshold for inclusion at 1% of total SSE Group water withdrawal, consumption and discharge.</p> <p>Approximately 40 employees were on-boarded from SGRE in 2021/22, representing a fraction of the SSE Group total FTEs.</p>

**W0.7**

**(W0.7) Does your organization have an ISIN code or another unique identifier (e.g., Ticker, CUSIP, etc.)?**

Indicate whether you are able to provide a unique identifier for your organization.	Provide your unique identifier
Yes, an ISIN code	GB0007908733

**W1. Current state**

**W1.1**

**(W1.1) Rate the importance (current and future) of water quality and water quantity to the success of your business.**

	Direct use importance rating	Indirect use importance rating	Please explain
Sufficient amounts of good quality freshwater available for use	Vital	Important	<p>Sufficient volumes of quality freshwater are vital for SSE's direct operations: SSE's hydro assets take water from rivers and lochs as a fuel source, 97% (23.4bn m3 2022/23) of all water abstracted was used in these plants.</p> <p>Some of SSE's thermal generation activities take quality freshwater to cool plant and as process water for several operations. Most of these assets are located near coastal areas, less than 1% (2.2m m3) of water abstracted was from freshwaters.</p> <p>In 2022/23, hydro generation was 17%/14% of SSE's total capacity/output, investment in existing hydro assets to ensure performance over the coming decades is in line with environmental obligations.</p> <p>SSE Thermal finalised the commissioning of Keadby 2 which was operational in late 2022/23, a new 893MW CCGT, the most efficient CCGT in Europe with an efficiency of around 63%. Sufficient quality freshwater is required at Keadby 2 for cooling purposes to generate electricity at the site. Freshwater abstraction volumes are therefore expected to increase going forward for thermal generation.</p> <p>SSE is developing options in CCS and hydrogen across the thermal generation portfolio. Whilst crucial to progressively reduce carbon emissions in the energy system, these technologies may increase abstraction from freshwater sources in the future.</p> <p>Some smaller quantities of quality freshwater are Important for SSE's indirect operations: By contractors during project construction, e.g., at wind farms for activities such as dewatering sites. Such activities are periodic and not sustained so a rating of "Important" is deemed relevant. Also, raw materials for processes in generation assets require water for their manufacture/ production e.g. for demineralisation.</p>
Sufficient amounts of recycled, brackish and/or produced water available for use	Vital	Important	<p>Sufficient volumes of brackish water are deemed vital for SSE's direct operations: most of SSE's thermal plants are located near coastal areas, and as such a majority of the water abstracted is classed as sea water or estuarine/brackish water. These plants rely on this water as cooling water for its operations. The water withdrawn from brackish surface water/ seawater is for SSE's Keadby 1, Medway, Peterhead, Lerwick, Great Island and Tarbert power stations.</p> <p>SSE's thermal generation assets accounted for 54% of SSE's total capacity and 60% of output in 2022/23, and Thermal's electricity generation activities accounted for 40.8% of the Group's total adjusted operating profit. If sufficient volumes of brackish water are not available, it has potential to impact on a portion of SSE's generation output and operating profit.</p> <p>Some smaller quantities of brackish water are important for SSE's indirect operations. The use of brackish water for 'indirect' activities (e.g., supplier goods and services) is minimal but important and therefore the rating of "Important" is deemed relevant. SSE is also investing in new net zero developments and the construction and development activities associated with these activities may increase the amount of brackish water required in time.</p>

**W1.2**

(W1.2) Across all your operations, what proportion of the following water aspects are regularly measured and monitored?

	% of sites/facilities/operations	Frequency of measurement	Method of measurement	Please explain
Water withdrawals – total volumes	76-99	Continuously	Hydro – Telemetry system  Thermal – combination of calculation by pump run hours and pump flow factors or flow metering.	Hydro and thermal generation activities contribute over 99% of SSE's total water withdrawals in terms of total volumes. These withdrawals are therefore business critical and monitored closely for operational and regulatory purposes.  The continuous measurement is carried out via instrumentation at each hydro site that monitors water levels, valve/gate positions, flowrates, turbine generation, etc. and transmits this data to SSE's 24-hour control room.  SSE's Thermal power stations monitor, measure and report water aspects to the appropriate regulators against specific environmental permits/licenses and their requirements. Across these sites, withdrawals are continuously monitored (either by a function of pump running hours multiplied by flow factors or through the use of flow meters) and are reported to the appropriate regulator.  The coverage is based on SSE Renewables' (Hydro only) and SSE Thermal's generation output as a share of the group's total output, which is 74%.
Water withdrawals – volumes by source	76-99	Continuously	Hydro – Telemetry system  Thermal – combination of calculation by pump run hours and pump flow factors or flow metering.	Hydro and thermal generation activities contribute over 99% of SSE's total water withdrawals in terms of volumes by source. This data is gathered and monitored for both regulatory and operational purposes. The coverage is based on SSE Renewables' (Hydro only) and SSE Thermal's generation output as a share of the group's total output, which is 73.5%.  Hydro - The continuous measurement is carried out via instrumentation at each hydro site that monitors water levels, valve / gate positions, flowrates, turbine generation, etc. and transmits this data to SSE's 24-hour control room.
Entrained water associated with your metals & mining and/or coal sector activities - total volumes [only metals and mining and coal sectors]	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Produced water associated with your oil & gas sector activities - total volumes [only oil and gas sector]	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Water withdrawals quality	76-99	Other, please specify (Periodic as required for process purposes)	Hydro - Samples taken to third-party lab. Testing of water coming into plant (not at every site).	Hydro and thermal generation activities contribute over 99% of SSE's total water withdrawals in terms of quality. This data is similarly gathered for regulatory and operational purposes.  The coverage is based on SSE Renewables' (Hydro only) and SSE Thermal's generation output as a share of the group's total output, which is 73.5%.
Water discharges – total volumes	76-99	Continuously	Hydro – Telemetry system  Thermal – combination of calculation by pump run hours and pump flow factors or flow metering.	Hydro and thermal generation activities contribute over 99% of SSE's total water discharges in terms of total volumes. These activities are business critical and therefore the data is gathered and monitored for regulatory and operational purposes.  The coverage is based on SSE Renewables' (Hydro only) and SSE Thermal's generation output as a share of the group's total output, which is 73.5%  The continuous measurement is carried out via instrumentation at each hydro site that monitors water levels, valve / gate positions, flowrates, turbine generation, etc. and transmits this data to SSE's 24-hour control room.
Water discharges – volumes by destination	76-99	Continuously	Hydro – Telemetry system  Thermal – combination of calculation by pump run hours and pump flow factors or flow metering.	Hydro and thermal generation activities contribute over 99% of SSE's total water discharges in terms of volumes by destination. This data is gathered for regulatory and operational purposes.  The coverage is based on SSE Renewables' (Hydro only) and SSE Thermal's generation output as a share of the group's total output, which is 73.5%  The continuous measurement is carried out via instrumentation at each hydro site that monitors water levels, valve / gate positions, flowrates, turbine generation, etc. and transmits this data to SSE's 24-hour control room.
Water discharges – volumes by treatment method	76-99	Continuously	Hydro – not applicable  Thermal – combination of calculation by pump run hours and pump flow factors or flow metering.	Thermal power stations monitor, measure and report water aspects to the Regulators against specific environmental permits and this may include in some jurisdictions water discharge volumes by treatment method.  The coverage is based on thermal generation, which represents 60% output for the group.  SSE's hydro-electric generation stations use freshwater to generate electricity. Water passes through turbines and is returned to the environment almost immediately. Since there is no change to the water that is returned to the environment, this parameter is not relevant to these operations.
Water discharge quality – by standard effluent parameters	76-99	Monthly	Hydro – not applicable  Thermal – some quality parameters are analysed by third party accredited laboratories based on regular samples (e.g. monthly) and some are typically continuously monitored by on-site instrumentation e.g. pH and chlorine.	Thermal power stations monitor, measure and report water aspects to the Regulators against specific environmental permits and this may include water discharge quality (by standard effluent parameters).  The coverage is based on thermal generation, which represents 60% output for the group.  SSE's hydro-electric generation stations use freshwater to generate electricity. Water passes through turbines and is returned to the environment almost immediately. Since there is no change to the water that is returned to the environment, this water discharge quality by standard effluent parameter is not relevant to these operations.

	% of sites/facilities/operations	Frequency of measurement	Method of measurement	Please explain
Water discharge quality – emissions to water (nitrates, phosphates, pesticides, and/or other priority substances)	Not monitored	<Not Applicable>	<Not Applicable>	<p>Hydro - Oil used to lubricate turbines could potentially leak into the water course, but SSE has mitigations plans in place to stop such pollutants from entering the water that runs through its hydro assets.</p> <p>Volumes of oil used in stations by operational plant are monitored to identify and repair any cause of oil loss.</p> <p>Thermal - No on-site sources of the specific parameters identified in this question. The monitoring plan for discharges from our Power Stations is determined and agreed with the relevant environmental regulator based upon the activities / risks at the stations. We have therefore considered that this is the set of 'standard effluent parameters' identified in the question above.</p>
Water discharge quality – temperature	76-99	Continuously	Temperature instrument / probe.	<p>Thermal power stations monitor, measure and report water aspects to the Regulators against specific environmental permits and this may include water discharge quality in terms of temperature.</p> <p>The coverage is based on thermal generation, which represents 60% output for the group.</p> <p>SSE's hydro-electric generation stations use freshwater to generate electricity. Water passes through turbines and is returned to the environment almost immediately. Since there is no significant temperature change as part of the hydropower operation, this water quality temperature parameter is not relevant to these operations.</p>
Water consumption – total volume	76-99	Continuously	Hydro – not applicable  Thermal – combination of calculation by pump run hours and pump flow factors or flow metering.	<p>The water that is consumed by SSE is used for cooling and as process water in SSE's thermal power stations and in SSE's non-operational buildings for amenities. SSE's thermal generation activities contribute over 96% of total water in terms of consumption with the remainder consumed by SSE's property portfolio. This is business critical activity and therefore data is gathered for both regulatory and operational purposes.</p> <p>The coverage is based on thermal generation, which represents 60% output for the group.</p> <p>SSE's hydro-electric generation stations use freshwater to generate electricity. Water passes through turbines and is returned to the environment almost immediately. Since there is no water consumption as a part of hydropower operations this water consumption by total volume parameter is not relevant for these operations.</p>
Water recycled/reused	76-99	Continuously	Hydro - Telemetry system	<p>Hydro and thermal generation activities contribute 99% of total water recycled/reused. Data is gathered for regulatory/operational purposes (e.g. for optimising efficiencies) as it is business critical. Water passing through one hydro facility is immediately returned to the environment and is typically recycled through a further 3-4 hydropower facilities in a cascade model. Therefore, the bulk of this water is recycled without compromising quality.</p> <p>SSE operates one pump storage scheme (Foyers) where water that is pumped from the lower reservoir to the upper reservoir is subsequently re-used for generation as it returns to the lower reservoir.</p> <p>Thermal power stations - water used within steam cycles is reused, with a certain level of loss/bleed to maintain water quality. Sites with certain types of cooling systems recirculate water to minimise the need for abstraction. As this re-use is inherent in the system design the quantity of reuse isn't monitored as it's a continuous process.</p>
The provision of fully-functioning, safely managed WASH services to all workers	76-99	Monthly	Hydro – not applicable  Thermal - Combination of meter readings and flow meters.	<p>The water that is consumed by SSE for WASH purposes is in SSE's non-operational buildings for amenities. This data is gathered for internal monitoring and measurement purposes to support efficiency activities and programmes.</p> <p>The coverage is based on the number of full-time employees.</p>

## W-EU1.2a

(W-EU1.2a) For your hydropower operations, what proportion of the following water aspects are regularly measured and monitored?

	% of sites/facilities/operations measured and monitored	Please explain
Fulfilment of downstream environmental flows	100%	<p>SSE's heritage has its foundations in the largescale development of hydro-electricity in the north of Scotland in the 1940s and 1950s. The requirement for environmental flows for these schemes, particularly as relevant to the successful migration and spawning of salmon, were very well developed for the time and have been added to and modified over the years based on practical experience and, more recently, changes in legislation.</p> <p>SSE works closely with regulators, environmental organisations, fishery interests and local communities to ensure that its hydro-electricity operations have minimal adverse impacts on these stakeholders, biodiversity and the environment. SSE monitors all abstractions (based on the volume of water passing through its turbines), compensation and freshet flows and report these to the Regulator, the Scottish Environment Protection Agency (SEPA), on an annual basis or as requested.</p> <p>Environmental flows are defined as conditions in the operating licence issued by SEPA. There is a legally defined process for SEPA to vary these flows if this is necessary to protect the environment.</p>
Sediment loading	100%	<p>There is no impact to sediment loading from SSE's hydro operations in normal operating conditions; during maintenance, non-routine overhauls and other non-routine activities sediment loading is monitored. For these activities, SSE has emergency response and containment processes in place to manage any impacts from these activities.</p> <p>Normal and ongoing management of sediment to maintain river continuity is undertaken using methods agreed with SEPA. SSE is beginning a process of developing specific sediment management plans for particularly environmentally sensitive locations.</p>
Other, please specify	100%	<p>SSE's hydro power stations operate in the north of Scotland in freshwater catchments. Salmon and sea trout return to breed in the rivers every year. To safeguard the fish stocks fish ladders and fish screens help the adult fish return upstream to breeding grounds and for juvenile smolts to return to the sea. SSE closely monitors the operation of these fish passes and fish screens.</p> <p>SSE's responsibilities to operate and maintain fish passes and screens date back to the original Acts of Parliament that were passed between the 1920s and the 1970s. These responsibilities are now covered by conditions of the operating licences issued by SEPA.</p> <p>Fish counters have been installed on most of the major fish passes since the 1950s and are still operated and maintained by SSE. The count data, and the software SSE has developed to manage and view the data, is made freely available to SEPA and the local District Salmon Fishery Boards. SSE also supports many projects to capture, tag and release salmon and sea trout smolts heading out to sea as part of research and fishery management improvement projects. SSE uses AI technology, which consists of cameras that gather footage and automatically detect and count the salmon, enabling the collection of valuable and accurate data for monitoring.</p>

W1.2b

**(W1.2b) What are the total volumes of water withdrawn, discharged, and consumed across all your operations, how do they compare to the previous reporting year, and how are they forecasted to change?**

	Volume (megaliters/year)	Comparison with previous reporting year	Primary reason for comparison with previous reporting year	Five-year forecast	Primary reason for forecast	Please explain
Total withdrawals	23354233	Lower	Other, please specify (Reduced rainfall passing through SSE's hydro sites)	Unknown	Other, please specify (SSE's hydro assets are responsible for the majority of water withdrawn (97%). The forecast for SSE's hydro assets are dependent on rainfall.)	<p>SSE depends on water in various ways across its operations, from cooling and process use in electricity generation to an amenity in buildings. SSE seeks to use water in a sustainable way.</p> <p>In terms of water use, SSE's hydro-electric generation stations use freshwater to generate electricity in their operations. The water passes through turbines to generate electricity and is returned to the environment almost immediately and therefore the impact on the freshwater sources is minimal.</p> <p>In 2022/23 SSE abstracted 23.4 billion m3 of water compared to 23.9 billion m3 in 2021/22. Over 97% of the total water abstracted by SSE was used in its hydro generation operations. The slight reduction in water abstracted was largely due to a reduction in water passing through SSE's hydro-electric generation plant as a result of lower levels of rainfall compared to the previous year.</p> <p>Around 3% of total water abstracted by SSE in 2022/23 was used in its thermal generation operations. For thermal generation water is used for cooling and as process water in a variety of operations. Water abstraction and return for thermal generation reflects the overall output of the power station as well as the type of cooling water system used by the power station. Total water abstracted from SSE's thermal power stations fell slightly between 2021/22 and 2022/23 predominantly due to an unplanned outage at a thermal power station that uses a once through (direct) cooling water system. Such assets have higher abstraction rates than stations with cooling tower systems.</p>
Total discharges	23352861	Lower	Other, please specify (Reduced rainfall passing through SSE's hydro sites)	Unknown	Other, please specify (SSE's hydro assets are responsible for the majority of water withdrawn (97%). The forecast for SSE's hydro assets are dependent on rainfall. )	<p>Similar to water abstraction, SSE's water discharges are from across its operations, from cooling and process use of water in electricity generation to amenity in buildings.</p> <p>SSE's hydro generation activities contribute to the majority of water returned to the environment - the water passes through turbines to generate electricity and is returned almost immediately to the freshwater environment. In 2022/23, SSE discharged 23.4 billion m3 of water in comparison to 23.9 billion m3 the previous year. The reduction in water discharged was largely due to a reduction in water passing through SSE's hydro-electric generation plant as a result of lower levels of rainfall compared to the previous year.</p> <p>For SSE's thermal generation operations, the water returned mirrors the water abstracted trend. 3% of total water returned in 2022/23 was from SSE's thermal generation operations. For thermal generation water is used for cooling and as process water in a variety of operations. Water abstraction and return for thermal generation generally reflects the overall output of the power station and the type of water system used by the power station.</p> <p>Total water abstracted and discharged from SSE's thermal power stations fell slightly between 2021/22 and 2022/23 predominantly due to an unplanned outage at a thermal power station that uses a once through (direct) cooling water system. Such assets have higher abstraction rates than stations with cooling tower systems.</p> <p>SSE expects the quantity and efficiency of hydro water withdrawal to continue to be significant as hydro and other renewable technologies are key to its net zero transition plans by 2040. The forecast for water withdrawals and discharges is dependent on rainfall making a 5 year forecast unknown.</p>
Total consumption	1429	Much higher	Increase/decrease in business activity	Unknown	Other, please specify (Dependant on market conditions and plant availability, which dictates which power stations run as well as generation total output.)	<p>The water that is consumed by SSE is used primarily as cooling and process water in SSE's thermal power stations and some is used in SSE's non-operational buildings for amenities. In 2022/23, SSE consumed 1.4 million m3, accounting for 0.0006% of the total water withdrawals in that period.</p> <p>Between 2021/22 and 2022/23 total water consumed from SSE's thermal power stations increased significantly and this was predominantly due to increased output from thermal generation overall, which increased from 14.26GWh in 2021/22 to 18.31GWh in 2022/23, as well as a proportional increase in the output from thermal power plant with cooling towers which have higher evaporative losses of water than once through (direct) cooling systems.</p> <p>Total water consumed is calculated using UK Government (BEIS) reporting standards. For water consumed it is the amount of water that is abstracted less the amount of water returned to the environment. Water is used for four main purposes: to cool generation plant (in thermal operations); as process water for a variety of operations (thermal generation operations); as a source of energy in hydro generation schemes; and for amenities in offices and buildings. The total water consumed reflects the 'volume of water used by the business to conduct its operations'.</p> <p>The forecast for total water consumption is dependent on market conditions and plant availability, which dictates which power stations run as well as generation total output.</p>

W1.2d

(W1.2d) Indicate whether water is withdrawn from areas with water stress, provide the proportion, how it compares with the previous reporting year, and how it is forecasted to change.

	Withdrawals are from areas with water stress	% withdrawn from areas with water stress	Comparison with previous reporting year	Primary reason for comparison with previous reporting year	Five-year forecast	Primary reason for forecast	Identification tool	Please explain
Row 1	Yes	1-10	Much higher	Increase/decrease in business activity	Unknown	Other, please specify (Dependant on market conditions and plant availability, which dictates which power stations run as well as generation total output.)	WRI Aqueduct Other, please specify (Environment Agency: Water stressed areas – final classification 2021 EPA's Water Mapping Tool (Ireland).)	<p>Hydro and thermal generation activities contribute over 99% of SSE's total water withdrawals in terms of quantity. This data is gathered for regulatory and operational purposes as it is business critical.</p> <p>In SSE's thermal power stations water is primarily used for cooling and as process water. Individual installations monitor, measure and report water aspects to the Regulators in accordance with specific environmental permits or licences. In Ireland, none of SSE's thermal power stations have been identified as being located in areas of water stress under the EU Water Framework Directive in Ireland (e.g. River Abstraction pressures).</p> <p>In England some Thermal sites are located in regions identified under the Environment Agency's 'Water Stressed Areas 2021 classification'. As a result the number of sites that withdraw water from 'water stressed' areas has changed and includes: Keadby 1 Power Station, Medway Power Station, Chickereil &amp; Burghfield (embedded) Power Stations and Marchwood Power Station (a Joint Venture). These sites operate within the strict bounds of water abstraction licences issued by the Environment Agency.</p> <p>In December 2017 the UK Government published its Water Abstraction Plan which set out how the UK government will reform water abstraction management in England over the coming years and how this will protect the environment and improve access to water. This plan aims to make full use of existing regulatory powers to address unsustainable abstraction; promote a stronger catchment focus to develop local solutions to protect the environment that will inform updated abstraction licensing strategies that detail the solutions and set out approaches to environmental issues; and modernise the abstraction service by upgrading systems and moving the water abstraction licensing regime into the Environmental Permitting Regulations. Water companies are to play a leading role in abstraction planning in England and Regional Water Resource Management groups have been established to deliver a multi-sector resource planning function. SSE is engaged in these initiatives, either directly or through it's membership of EnergyUK, in order to track potential impacts on its thermal generation activities.</p> <p>For SSE's hydro generation, there is no direct classification by SEPA in Scotland for water stressed areas. For water bodies affected by SSE hydro operations these are classified by SEPA under the European Water Framework Directive (WrFD) for quality, ecology and hydrology. SSE uses the Aquator tool to analyse hydrology and other hydro operational metrics to ensure water resources are efficiently managed within the constraints of the system (for instance: in terms of rainfall, reservoir inflows, snowmelt, storage, power station availability and efficiency). Following SSE's reduction in water abstraction on the River Garry and its tributaries to meet the WrFD requirements under SEPA's second River Basin Management Plan (RBMP), SSE continues to engage with SEPA on a small number of minor water bodies under potential consideration for the third RBMP to identify and agree what, if any, operational changes may be necessary to meet WrFD requirements in the future.</p> <p>Additionally, the WRI Aqueduct tool demonstrates that Scotland, where SSE's hydro operations are located, are in the lowest category of risk. For SSE's thermal operations, which are located across UK and Ireland, these are located in the lowest or second lowest category of risk.</p>

W1.2h

(W1.2h) Provide total water withdrawal data by source.

	Relevance	Volume (megaliters/year)	Comparison with previous reporting year	Primary reason for comparison with previous reporting year	Please explain
Fresh surface water, including rainwater, water from wetlands, rivers, and lakes	Relevant	22622974	About the same	Other, please specify (No significant changes have occurred in the reporting boundary or business activity, therefore, withdrawal is comparative with that of 2021/22.)	<p>SSE's hydro generation assets (97% of total water withdrawn) abstract water from freshwater lochs which is returned almost immediately to the environment.</p> <p>SSE's Thermal business also withdrew some small volumes of water from freshwaters for electricity generation at Keadby 1.</p> <p>In 2022/23 withdrawals from fresh water decreased very slightly by 2% compared to 2021/22. The decrease was due to a reduction in water passing through SSE's hydro generation facilities as a result of lower levels of rainfall compared to 2021/22.</p> <p>Thresholds between periods: 'much higher/ lower' involve a 'increase/ decrease of 10% or greater'; 'higher/lower' '3%-9% change'. The 'stayed the same' category is '0%-2% change'.</p> <p>SSE calculates the water withdrawn using UK Government (BEIS) reporting standards. Data is independently assured by professional services firm PwC. Volume of water abstracted by hydro plant is measured via telemetry and for thermal plant is measured through flow meters.</p>
Brackish surface water/Seawater	Relevant	729307	Lower	Increase/decrease in business activity	<p>Brackish water / seawater is withdrawn for SSE's thermal generation assets: Keadby 1, Peterhead, Medway, Lerwick, Great Island and Tarbert.</p> <p>The overall output of the power station and the cooling system used by the generators would have the most influence on the water withdrawals from brackish water.</p> <p>SSE's total water withdrawn excluding hydro operations fell slightly over this period. This was predominantly due to an unplanned outage at a thermal power station that uses a once through (direct) cooling water system. Such assets have higher abstraction rates than stations with cooling tower systems.</p> <p>Thresholds between periods: 'much higher/ lower' involve a 'increase/ decrease of 10% or greater'; 'higher/lower' '3%-9% change'. The 'stayed the same' category is '0%-2% change'. Water abstracted is measured with flow meters. Water volumes are calculated using UK Government (BEIS) reporting standards. PwC assure the data.</p>
Groundwater – renewable	Relevant	1902	Much higher	Increase/decrease in business activity	<p>Water withdrawn from groundwater is for Rhode and Slough power stations. The water withdrawn is influenced by output and the type of cooling water system used. Water withdrawn is measured using flow meters. In addition, SSE's Slough Heat and Power biomass power station abstracts water from renewable groundwater for use in its power station and for supply to SSE's private water supply business which serves around 600 large and small business customers.</p> <p>Between 2021/22 and 2022/23 there was an increase in the water withdrawn from groundwater and this was primarily due to an increase in water withdrawn to supply SSE's private water supply customers in Slough.</p> <p>Thresholds between periods: 'much higher/ lower' involve a 'increase/ decrease of 10% or greater'; 'higher/lower' '3%-9% change'. The 'stayed the same' category is '0%-2% change'. SSE calculates the water withdrawn, consumed /returned using UK Government (BEIS) reporting standards. Data is independently assured by PwC.</p>
Groundwater – non-renewable	Not relevant	<Not Applicable>	<Not Applicable>	<Not Applicable>	Not applicable, there is no groundwater usage within the thermal business. Dewatering has occurred during the construction of Keadby 2 to allow for the pouring of concrete constructions, but all extracted water is returned to water courses without contamination.
Produced/Entrained water	Not relevant	<Not Applicable>	<Not Applicable>	<Not Applicable>	Not applicable, SSE does not have any oil and gas extraction operations.
Third party sources	Relevant	49.86	Much higher	Increase/decrease in business activity	<p>Tawnaghmore, Chickerell and Burghfield thermal generation assets withdraw water from third-party sources. Withdrawal volumes are influenced by the overall output of the power stations, which increased in 2022/23. SSE monitors water use in these power stations through meter readings and flow meters. Small volumes of water are used in amenities provided by a third-party supplier. this volume increased by 21% between 2021/22 and 2022/23 reflecting the increase in office occupancy as Covid-19 lockdown restrictions were lifted and staff begin to increasingly return to work. SSE has water efficiency and saving programmes in its generation operations and non-operational offices, data centres and depots.</p> <p>Thresholds between periods: 'much higher/ lower' involve a 'increase/ decrease of 10% or greater'; 'higher/lower' '3%-9% change'. The 'stayed the same' category is '0%-2% change'.</p>

W1.2i

(W1.2i) Provide total water discharge data by destination.

	Relevance	Volume (megaliters/year)	Comparison with previous reporting year	Primary reason for comparison with previous reporting year	Please explain
Fresh surface water	Relevant	22622722	About the same	Other, please specify (No significant changes have occurred in the reporting boundary or business activity, therefore, withdrawal is comparative with that of 2021/22. )	<p>Water discharges to fresh water sources is undertaken by SSE's hydro generation assets, and a few of its thermal generation assets discharge water to rivers.</p> <p>Over 97% of SSE's total water returned to the environment is by its hydro generation assets. Water discharged to fresh surface water decreased slightly by 2% between 2021/22 and 2022/23. The slight fall in discharge volumes to fresh surface water was due to a reduction in water passing through SSE's hydro generation facilities as a result of lower levels of rainfall compared to the previous year.</p> <p>Thresholds between years: 'much higher/ lower' involve a 'increase/ decrease of 10% or greater'; 'higher/lower' '3%-9% change'; 'stayed the same' is '0%-2% change'. SSE calculates the water returned using UK Government (BEIS) reporting standards. Data is assured by PwC. Water passing through hydro turbines is measured via telemetry and discharges by thermal plant through flow meters.</p>
Brackish surface water/seawater	Relevant	728432	Lower	Increase/decrease in business activity	<p>SSE's Keadby 1, Peterhead, Medway, Lerwick, Great Island and Tarbert power stations discharge to brackish waters.</p> <p>The overall output of the power station and the cooling system used by the generators would have the most influence on the water withdrawals from brackish water. In 2022/23 SSE's output from its thermal generation plant increased significantly and this resulted in a corresponding increase in water withdrawn. Water abstracted is measured with flow meters. Water volumes are calculated using UK Government (BEIS) reporting standards and PwC assure the data.</p>
Groundwater	Not relevant	<Not Applicable>	<Not Applicable>	<Not Applicable>	SSE's policy is to meet all regulatory requirements. Environmental regulations that govern SSE's operations do not allow for discharge to groundwater. Therefore, this is not applicable.
Third-party destinations	Relevant	1708	Much higher	Increase/decrease in business activity	<p>Water discharged to third-party destinations is from SSE's non-operational buildings, Burghfield, Chickerell, Rhode, Tawnaghmore and Slough power stations. Water discharged to third-party destination increased by 14% between 2021/22 and 2022/23 reflecting an increase in water supplied to SSE's private water supply customers at Slough Heat and Power station.</p> <p>Water used and subsequently discharged to sewer in SSE's amenities increased by 21% between 2021/22 and 2022/23 reflecting the increase in office occupancy as Covid-19 lockdown restrictions are lifted and staff begin to increasingly return to work.</p> <p>SSE continues to implement a water efficiency, behavioural change and saving programme in its non-operational offices, data centres and depots.</p>

W1.2j

**(W1.2j) Within your direct operations, indicate the highest level(s) to which you treat your discharge.**

	Relevance of treatment level to discharge	Volume (megaliters/year)	Comparison of treated volume with previous reporting year	Primary reason for comparison with previous reporting year	% of your sites/facilities/operations this volume applies to	Please explain
Tertiary treatment	Not relevant	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>	SSE's thermal power stations previously treated some process and cooling waters using tertiary treatment methods prior to discharge back to source. The closure of the Fiddlers Ferry power station in 2020 meant that SSE no longer required any Tertiary treatment of Flue Gas Desulfurization (FGD) wastewater.
Secondary treatment	Relevant	15.8	Lower	Increase/decrease in business activity	Less than 1%	SSE's thermal power stations treat some process and cooling waters using secondary treatment methods prior to discharge back to source.  The volume of water discharged following secondary treatment reduced in 2022/23 compared to the previous year. This can be attributed to the reduced estimated sewage volumes at Medway and Tarbert, which is linked with lower abstraction and running hours.
Primary treatment only	Relevant	26.6	Much lower	Increase/decrease in business activity	Less than 1%	SSE's thermal power stations treat some process and cooling waters using primary treatment methods prior to discharge back to source. The volume of water discharged following primary treatment reduced significantly in 2022/23 compared to the previous year. This can be attributed to lower generation output at the Tarbert power station in 2022/23 in comparison to 2021/22.
Discharge to the natural environment without treatment	Relevant	23351111	About the same	Increase/decrease in business activity	91-99	Over 97% of the total water abstracted by SSE in 2022/23 was used in its hydro generation operations, and therefore was returned to the environment almost immediately, meaning there is no change of state and that no treatment is required.  In 2022/23 SSE abstracted 23.4 billion m3 of water compared to 23.9 billion m3 in 2021/22. Over 97% of the total water abstracted by SSE was used in its hydro generation operations. The slight reduction in water abstracted was largely due to a reduction in water passing through SSE's hydro-electric generation plant as a result of lower levels of rainfall compared to the previous year.  For thermal generation water is used for cooling and as process water in a variety of operations. The majority of water abstracted and returned for thermal generation is used for cooling purposes. Cooling processes can include recirculatory systems which reuse the water or once through direct cooling systems. Both systems use the water to cool and therefore there is no change in the water between abstraction and its return to the natural environment. For some thermal process the water abstracted is treated before discharged back to source (as described above).  SSE's Keadby 1, Peterhead, Medway, Lerwick, Great Island and Tarbert power stations discharge to brackish waters.
Discharge to a third party without treatment	Relevant	1707.7	Much higher	Increase/decrease in business activity	Less than 1%	Water discharged to third-party destinations is from SSE's non-operational buildings, Burghfield, Chickerell, Rhode, Tawnaghmore and Slough power stations. Water discharged to third-party destination increased by 14% between 2021/22 and 2022/23 reflecting an increase in water supplied to SSE's private water supply customers at Slough Heat and Power station.  Water used and subsequently discharged to sewer in SSE's amenities increased by 21% between 2021/22 and 2022/23 reflecting the increase in office occupancy as Covid-19 lockdown restrictions are lifted and staff begin to increasingly return to work.
Other	Not relevant	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>	Not applicable, SSE does not have any other water discharge categories.

**W1.3**

**(W1.3) Provide a figure for your organization's total water withdrawal efficiency.**

	Revenue	Total water withdrawal volume (megaliters)	Total water withdrawal efficiency	Anticipated forward trend
Row 1	1249070000	23354233	534.836661088378	SSE Thermal is investing in CCS and hydrogen technologies, and it is expected that water withdrawal volumes and efficiencies will change in this time.  SSE's largest activities by revenue are trading and energy supply, both of which are high volume, low margin activities. SSE's largest businesses by profit and capex are typically renewables and networks. SSE believes that revenue is a poor measure of its economic activity and estimating forward trends for revenue is difficult.

**W-EU1.3**

**(W-EU1.3) Do you calculate water intensity for your electricity generation activities?**

Yes

**W-EU1.3a**

**(W-EU1.3a) Provide the following intensity information associated with your electricity generation activities.**

Water intensity value (m3/denominator)	Numerator: water aspect	Denominator	Comparison with previous reporting year	Please explain
0.04	Total water withdrawals	MWh	Much lower	<p>SSE uses water intensity to inform water optimisation strategies in its thermal generation plant as well as for regulatory resource efficiency metrics reporting purposes.</p> <p>For thermal generation water is used for cooling and as process water. Water abstraction and return for thermal generation reflects the overall output of the power station as well as the type of water system used by the power station.</p> <p>The water withdrawal intensity value decreased primarily because of a decreased proportion of output from stations that use water in a system that has only one water use cycle (called a 'once through cooling water system'). The water withdrawn intensity decreased from 0.055 megalitres/MWh to 0.040 megalitres/MWh during the two periods (water withdrawn intensity is calculated using total water abstracted - thermal (megalitres) against total thermal generation output (MWh)).</p>
0.04	Other, please specify (Total water returned)	MWh	Much lower	<p>For thermal generation, water is used for cooling and as process water. Water abstraction and return for thermal generation reflects the overall output as well as the type of water system used by the power station. The water withdrawal intensity value decreased primarily as a result of a decreased proportion of output from stations that use water in a system that has only one water use cycle (called a 'once through cooling water system'). As a result, the water returned intensity decreased from 0.054 megalitres/MWh to 0.040 megalitres/MWh during the two periods (total water returned intensity is calculated using total water returned - thermal (megalitres) against total thermal generation output (MWh)).</p>
0	Total water consumption	MWh	Much higher	<p>SSE uses water intensity to inform water optimisation strategies in its thermal generation plant as well as for regulatory resource efficiency metrics reporting purposes. For thermal plants water is used for cooling and as process water. Water is treated onsite if required before returning it to source in accordance with specific environmental permits.</p> <p>For thermal generation water is used for cooling and as process water. Water abstraction and return for thermal generation reflects the type of water system used by the power station. The increase in water consumption was primarily a result of an increase of generation from stations that use recirculatory cooling systems with evaporative losses. To a lesser extent an increase in generation output also had an influence. This resulted in SSE's total water consumed intensity increasing to 0.000007 m3 in 2022/23 compared to 0.000005 m3 the previous year.</p> <p>Total water consumed intensity is calculated using total water consumed - thermal (megalitres) against total thermal generation output (MWh).</p>

**W1.4**

**(W1.4) Do any of your products contain substances classified as hazardous by a regulatory authority?**

	Products contain hazardous substances	Comment
Row 1	No	

**W1.5**

**(W1.5) Do you engage with your value chain on water-related issues?**

	Engagement	Primary reason for no engagement	Please explain
Suppliers	No	We are planning to do so within the next two years	<p>SSE is working with its value chain to review ESG issues that are relevant to its business operations. Climate change, safety, modern slavery, and local economic impact were identified as high priority with the likelihood/magnitude of impacts higher than those posed by water issues. The risk review highlighted water as low materiality in terms of potential impact, however, SSE asks suppliers to outline their water management policies and systems at the point of tender and to disclose any breaches to permits over the last 3 years as well as if any mitigations were required and their impacts.</p> <p>SSE will seek increased engagement with suppliers who develop products/services in areas of water scarcity, promoting those who do not participate in detrimental actions. In 2022, SSE established the Powering Net Zero Pact with 10 other founding partners as a legacy of COP26. Members are committed to publicly disclose wider environment metrics, including water use, recognising the importance of the natural environment in getting to net zero. The desire is for better data coverage for water use in the value chain to enable informed decisions on where to focus water-related value chain engagement.</p> <p>SSE supported the upskilling of its supply chain on water topics through the Supply Chain Sustainability School. In 2022/23, 189 water resources were accessed by 48 suppliers, which represented 19% of SSE's tier one supply chain by spend. SSE will increase engagement on water topics in the future.</p>
Other value chain partners (e.g., customers)	No	Important but not an immediate business priority	<p>SSE doesn't engage with customers on water-related issues. SSE supplies customers with electricity and gas and has conducted several engagement campaigns with customers on topics such as energy efficiency. SSE doesn't believe it sells any products with significant water impact. SSE's hydro fleet generated 14% of the Group's total output in 2022/23, with a majority (97%) of water abstracted used in hydro generation operations. This water is recorded as abstracted, but it passes through turbines to generate electricity and is returned to the environment almost immediately, therefore it has minimal environmental impact.</p> <p>Despite minimal environmental impact, SSE works closely with regulators, environmental organisations and the local community to ensure its hydro operations have minimal adverse impacts on these stakeholders, biodiversity and the environment.</p> <p>Sustainability (including water-related aspects) is integrated within SSE's strategy. Its business model which embeds sustainability throughout is designed to ensure that in achieving its core business objectives, it creates value for shareholders and society in a sustainable way. SSE's ESG-focused shareholders often engage with the company regarding its performance in ESG ratings/indices. SSE receives shareholder queries involving water-related issues on an ad hoc basis. SSE engages with shareholders when these questions arise but has no plans to systematically engage further with its shareholders.</p>

**W2. Business impacts**

**W2.1**

**(W2.1) Has your organization experienced any detrimental water-related impacts?**

No

**W2.2**

**(W2.2) In the reporting year, was your organization subject to any fines, enforcement orders, and/or other penalties for water-related regulatory violations?**

	Water-related regulatory violations	Fines, enforcement orders, and/or other penalties	Comment
Row 1	No	<Not Applicable>	SSE did not the subject to any fines, enforcement orders, or other penalties for water-related regulatory violations. However, the company did receive a warning letter from SEPA in relation to the construction of cable crossings conducted by contractors on behalf of SSEN Distribution during the winter of 2022/23. Condition 1(c) of CAR-R-SEPA2021-614 prohibits work being undertaken during the period when fish are likely to be spawning and juvenile fish emerging. This period nominally runs from 1 October to 31 May in any given year. SEPA did not take any further action with respect to these non-compliances.

**W3. Procedures**

**W3.1**

**(W3.1) Does your organization identify and classify potential water pollutants associated with its activities that could have a detrimental impact on water ecosystems or human health?**

	Identification and classification of potential water pollutants	How potential water pollutants are identified and classified	Please explain
Row 1	Yes, we identify and classify our potential water pollutants	<p>SSE's hydro generation licences have a condition to avoid any release of oils when water is returned to the environment. As part of SSE's value chain, the company engages with upstream and downstream stakeholders to ensure activities are compliant with their requirements. One potential risk is pollutants of small quantities of oil from bearings within moving equipment for lubrication, this is measured and mitigated by contractors who filter oil from water and sell the oil back to be reused in the same equipment.</p> <p>SSE's thermal power stations primarily use water for cooling with some water used as process water. All SSE's thermal sites have environmental permits or licenses that include water pollution prevention conditions and ISO14001 certified Environmental Management Systems. Each site monitors, measures and reports on water quality to the Regulators in accordance with environmental permits/licenses. SSE monitors water intake to understand and monitor quality of the water entering its power stations.</p> <p>Across SSE's value chain there is minimal variation. SSE asks suppliers to detail any noncompliant environmental issues such as those which would incur fines/penalties. SSE has a sustainability supply chain commitment in place outlining its industry leading approach to sustainable practice. This document requires all suppliers detail their own policy documents at point of tender, detailing any non-compliance by way of contract management.</p>	<Not Applicable>

**W3.1a**

**(W3.1a) Describe how your organization minimizes the adverse impacts of potential water pollutants on water ecosystems or human health associated with your activities.**

**Water pollutant category**

Other, please specify (Thermal discharge)

**Description of water pollutant and potential impacts**

Thermal cooling-water discharges have been shown to have minimal detrimental impact to the water ecosystems. Process water discharges are treated as required by environmental permits / licences to ensure that there are no detrimental impacts to the water environment. SSE also monitors water intake to understand and monitor quality of water entering its power stations.

**Value chain stage**

Direct operations

**Actions and procedures to minimize adverse impacts**

Assessment of critical infrastructure and storage condition (leakages, spillages, pipe erosion etc.) and their resilience

Industrial and chemical accidents prevention, preparedness, and response

Discharge treatment using sector-specific processes to ensure compliance with regulatory requirements

Other, please specify (Monitoring and measurement process)

**Please explain**

SSE monitors, measures and reports water aspects in accordance with specific requirements of the environmental permit. SSE has an environmental management system certified to ISO14001:2015 in place to manage these activities. This ISO14001:2015 certificate covers all of the business units which are detailed by this water survey. This system is audited annually by an external auditor. It also has emergency response procedures, secondary containment, and water treatment facilities where required in relation to permit conditions. In addition, SSE monitors water intake in its thermal generation assets to understand and monitor quality of water entering its power stations.

**W3.3**

**(W3.3) Does your organization undertake a water-related risk assessment?**

Yes, water-related risks are assessed

**(W3.3a) Select the options that best describe your procedures for identifying and assessing water-related risks.****Value chain stage**

Direct operations

**Coverage**

Full

**Risk assessment procedure**

Water risks are assessed in an environmental risk assessment

**Frequency of assessment**

More than once a year

**How far into the future are risks considered?**

More than 6 years

**Type of tools and methods used**Enterprise risk management  
International methodologies and standards**Tools and methods used**Enterprise Risk Management  
Environmental Impact Assessment  
ISO 14001 Environmental Management Standard**Contextual issues considered**Water availability at a basin/catchment level  
Water quality at a basin/catchment level  
Stakeholder conflicts concerning water resources at a basin/catchment level  
Implications of water on your key commodities/raw materials  
Water regulatory frameworks  
Status of ecosystems and habitats  
Access to fully-functioning, safely managed WASH services for all employees**Stakeholders considered**Customers  
Employees  
Investors  
Local communities  
NGOs  
Regulators  
Suppliers  
Water utilities at a local level  
Other water users at the basin/catchment level**Comment**

The Chief Executive has lead responsibility for environment issues at Board level. The Board approves Group Principal Risks (GPR). As part of the GPR a viability assessment is undertaken for each of the 11 Principal Risks. Some scenarios assessed include water related issues e.g. the 'Climate Change' GPR assesses the impact of severe weather events on networks; and the 'Safety and Environment' GPR assesses adverse weather and safety.

In addition to the GPR assessment SSE also conducts a specialist TCFD climate-related risk and opportunity assessment, which seeks to identify and assess the climate-related risks and opportunities, inc flooding and severe weather events.

To ensure effective environmental management, SSE operates an environmental management system (EMS) certified to ISO14001, including controls, processes and procedures, across all its business activities that interact with the environment. All SSE businesses are covered by SSE's EMS. In 2022/23, SSEN Distribution, SSE Energy Customer Solutions and SSE Enterprise all achieved certification for the first time. This means SSE is currently ISO14001 certified for 100% of its business activities by reported revenue, based on 2022/23 figures.

**Value chain stage**

Supply chain

**Coverage**

Partial

**Risk assessment procedure**

Water risks are assessed in an environmental risk assessment

**Frequency of assessment**

More than once a year

**How far into the future are risks considered?**

More than 6 years

**Type of tools and methods used**

International methodologies and standards

**Tools and methods used**Environmental Impact Assessment  
ISO 14001 Environmental Management Standard**Contextual issues considered**

Water availability at a basin/catchment level  
Water quality at a basin/catchment level  
Stakeholder conflicts concerning water resources at a basin/catchment level  
Implications of water on your key commodities/raw materials  
Water regulatory frameworks  
Status of ecosystems and habitats  
Access to fully-functioning, safely managed WASH services for all employees

#### Stakeholders considered

Customers  
Employees  
Investors  
Local communities  
NGOs  
Regulators  
Suppliers  
Water utilities at a local level  
Other water users at the basin/catchment level

#### Comment

SSE works with its suppliers, identified by risk, to review and understand the impact of environmental issues. Water is identified as a risk of our activities but considered low risk in terms of likelihood/magnitude.

SSE meets planning obligations by doing detailed Environmental Impact Assessments (EIA) for large projects, and completing an environmental assessment for projects where an EIA is not a statutory requirement. These assessments take account of surrounding water courses and any potential impacts on these are identified, alongside any other water-related issues. SSE's Tier 1 contractors are required to mitigate any potential impacts identified through the assessments. Tier 1 contractors have contractual obligations to report environmental incidents or breaches (including water-related) through SSE's internal reporting system. These incidents are monitored continuously at site level with monthly reports at Group level. Going forward SSEN Transmission will also require Tier 1 contractors to provide data of water use from works activities on site, including pre-construction estimates and as-built reporting during and at the end of construction.

SSE's businesses have supplier frameworks in place which outlined planned activities and new developments. These cover a minimum of 3 years but often up to 10 years and allow stronger collaboration with our supply chain to identify and mitigate environmental risks, including water use and pollution.

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#### Value chain stage

Other stages of the value chain

#### Coverage

Partial

#### Risk assessment procedure

Water risks are assessed in an environmental risk assessment

#### Frequency of assessment

More than once a year

#### How far into the future are risks considered?

More than 6 years

#### Type of tools and methods used

International methodologies and standards

#### Tools and methods used

Environmental Impact Assessment  
ISO 14001 Environmental Management Standard

#### Contextual issues considered

Water availability at a basin/catchment level  
Water quality at a basin/catchment level  
Stakeholder conflicts concerning water resources at a basin/catchment level  
Implications of water on your key commodities/raw materials  
Water regulatory frameworks  
Status of ecosystems and habitats  
Access to fully-functioning, safely managed WASH services for all employees

#### Stakeholders considered

Customers  
Employees  
Investors  
Local communities  
NGOs  
Regulators  
Suppliers  
Water utilities at a local level  
Other water users at the basin/catchment level

#### Comment

SSE has identified its material issues relating to its key business operations. SSE has a programme of work with its value chain based on risk to review and understand the impact of environment, social and governance issues. Water is identified as a risk but highlighted as low risk in terms of likelihood/ magnitude of potential financial/ reputation impact. Climate change is the most material environment risk. SSE remains vigilant to the emergence of higher risks relating to water.

**(W3.3b) Describe your organization’s process for identifying, assessing, and responding to water-related risks within your direct operations and other stages of your value chain.**

	Rationale for approach to risk assessment	Explanation of contextual issues considered	Explanation of stakeholders considered	Decision-making process for risk response
Row 1	<p>SSE’s Group Risk Management Framework (RMF) integrates a process for identifying and assessing climate-related risks, which also considers water-related issues within the framework. SSE also undertakes a specialist TCFD climate assessment that identifies and assesses climate risk in the short, medium and long term. This specialist TCFD assessment goes into more detail to identify and assess the climate-related risks over longer periods of time than the RMF. The climate risk assessment involves senior business leader interviews supported by ongoing business unit risk assessments to capture and understand a long list of climate risks. A materiality test is completed, and a final list of significant climate risks is defined.</p> <p>Materiality is tested for each risk based on its ability (likelihood and impact) to have a substantive potential financial impact on SSE’s strategy or significant impact on SSE’s stakeholders across the time horizons identified by SSE for climate risk assessment. This assessment is completed across the value chain (direct operations, upstream and downstream activities) for each of the key business areas. Each risk is then assessed on its impact to SSE’s strategy and stakeholders involving an assessment of the likelihood and financial impact of the risk which helps to identify the importance of each material risk to the business.</p>	<p>Water risks are relevant to all geographies and all businesses.</p> <p>For example, water quality and/or quantity issues could present challenges in operations of hydro and thermal generation assets. Changes in generation output that is associated with changes in the weather is already factored into SSE’s Risk Management Framework. There is the possibility that climate change could exacerbate these weather-related fluctuations by impacting weather patterns over the longer term.</p> <p>Equally, flooding could cause disruption to operations across the transmission and distribution networks. Future climate models predict that climate change will continue to bring extreme events such as storms, floods and heatwaves which will impact network assets. For example, severe adverse weather events can result in flooding of substations and/or damage to overhead lines.</p>	<p>SSE’s strategy or significant impact on SSE’s stakeholders across the time horizons identified by SSE for climate risk assessment. This assessment is completed across the value chain (direct operations, upstream and downstream activities) for each of the key business areas. As such, all stakeholders within SSE’s value chain are considered in the process for identifying, assessing, and responding to water-related risks.</p>	<p>Where water risk is relevant, SSE responds by having mitigation plans in place to manage the impact. Water risks can arise from issues like: flooding (short term), to mitigate this risk, risk assessments are completed to understand the impact of flooding to business operations (i.e. substations); future legislation (medium term) could impact thermal assets. SSE has compliance and regulatory teams to mitigate and manage the impact of regulatory frameworks; and in the long-term climate change may impact water resource availability for generation assets, SSE manages this by monitoring trends in climate and weather.</p>

**W4. Risks and opportunities**

**W4.1**

**(W4.1) Have you identified any inherent water-related risks with the potential to have a substantive financial or strategic impact on your business?**

Yes, only within our direct operations

**W4.1a**

**(W4.1a) How does your organization define substantive financial or strategic impact on your business?**

The successful delivery of SSE’s strategic objectives depends on effective identification, understanding and mitigation of its Principal Risks. SSE has an established Risk Management Framework and wider system of internal control to inform decision-making in support of creating value in a sustainable way. The Board directly sets the Group Risk Management and Internal Control policy and reviews risk management performance at SSE on an ongoing basis. The Safety, Health and Environment Committee supported by the Board’s Safety, Health and Environment Advisory Committee provides oversight for environment and safety risks. SSE defines risk as anything that can threaten the achievement of its business and strategic objectives or compromise SSE’s core values. Each of SSE’s business units have differing levels of exposure to additional risks. For example, the Transmission and Distribution businesses are largely economically regulated and are characterised by relatively stable, inflation linked cash flows while the SSE Renewables business benefits from cash flows linked to government-mandated renewables subsidies. Those business units that generate and trade energy are also exposed to significant medium to long term energy market and commodity risks in operational and investment decision making. SSE’s risk management framework ensures that all risks associated with the environment (including water-related risks) are identified, assessed, evaluated, recorded, monitored and reviewed to understand the impact on the business. In relation to water risk, a pollution incident, water availability/ quality issue or climate related impact could have a material adverse impact to the environment, operations, property, employees, contractors or members of the public.

**W4.1b**

**(W4.1b) What is the total number of facilities exposed to water risks with the potential to have a substantive financial or strategic impact on your business, and what proportion of your company-wide facilities does this represent?**

	Total number of facilities exposed to water risk	% company-wide facilities this represents	Comment
Row 1	30	1-25	SSE's hydro generation facilities represent 17% of SSE's generation capacity and 14% of the Group's electricity generation output in 2022/23. The hydro generation plant is located in regions of high average rainfall – north of Scotland. It is the variability and change of climate (and associated weather) that impact the way SSE generates from its hydro generation sites. This in turn means that there is the possibility that climate change could exacerbate weather-related fluctuations by impacting weather patterns over the longer term. The risk facing SSE is that lower levels of rainfall could reduce the output from SSE's hydro assets which could result in a reduction in revenue. Conversely, higher periods of rainfall may require that SSE reduce output in order to limit flow during periods of high discharge to prevent downstream flooding. In the past few years, SSE has had to respond to milder and wetter winters. This means that SSE has to operate and adapt its generation activities and has resulted in a different way of managing the assets to the way it did 5 to 10 years ago. This is an opportunity as well as a risk for SSE.

#### W4.1c

**(W4.1c) By river basin, what is the number and proportion of facilities exposed to water risks that could have a substantive financial or strategic impact on your business, and what is the potential business impact associated with those facilities?**

##### Country/Area & River basin

United Kingdom of Great Britain and Northern Ireland	Other, please specify (River catchments in Scotland)
--	--

##### Number of facilities exposed to water risk

10

##### % company-wide facilities this represents

1-25

##### Production value for the metals & mining activities associated with these facilities

<Not Applicable>

##### % company's annual electricity generation that could be affected by these facilities

1-25

##### % company's global oil & gas production volume that could be affected by these facilities

<Not Applicable>

##### % company's total global revenue that could be affected

Less than 1%

##### Comment

The hydro generation plant is located in regions of high average rainfall – north of Scotland. It is the variability and change of climate (and associated weather) that impact the way SSE generates from its hydro generation sites. This in turn means SSE may have to adapt and change the way it operates in the future to respond to water related issues that arise as a result of climate change.

SSE has worked with the regulator, SEPA, to carry out surveys to better understand water-related impacts, as a result around 10 of the sites are viewed to be exposed to water risk that could have a substantive financial or strategic impact to the business. In the past few years, SSE has had to respond to milder and wetter winters. This means that SSE has to operate and adapt its generation activities and has resulted in a different way of managing the assets to the way it did 5 to 10 years ago. This is an opportunity as well as a risk for SSE.

#### W4.2

**(W4.2) Provide details of identified risks in your direct operations with the potential to have a substantive financial or strategic impact on your business, and your response to those risks.**

##### Country/Area & River basin

United Kingdom of Great Britain and Northern Ireland	Other, please specify (River catchments in Scotland)
--	--

##### Type of risk & Primary risk driver

Chronic physical	Changing precipitation patterns and types (rain, hail, snow/ice)
------------------	--

##### Primary potential impact

Other, please specify (Decreased future adjusted operating profits and potential impact to recoverable value of assets)

##### Company-specific description

SSE's hydro generation assets rely on rainwater to operate by using water as a 'fuel' to generate electricity. Climate change has the potential to change future weather patterns. This could result in changes to water availability and the way SSE runs its generation portfolio. Longer term changes in climate patterns have the potential to cause sustained higher temperatures that may result in lower rainfall and reduced wind levels. These changes may impact SSE's output and associated earnings.

SSE's businesses activities are significantly influenced by the weather. Weather affects production of renewable energy, the operation of the electricity transmission and

distribution networks, and the amount of gas and electricity SSE's energy customers use. Therefore, weather patterns are an important contributor to SSE's business performance.

One of the most material impacts that weather can have is fluctuations in weather patterns impacting adversely on the output of SSE's hydro and wind assets. SSE has hydro-electric generation assets across the north of Scotland, and onshore wind farms across the UK and Ireland (with the majority of installed capacity in Scotland). In particular, impacting SSE's 1,459MW of hydro electricity generation capacity (inc pumped storage) which includes 91 hydro dams in the north of Scotland covering a water catchment area of 5,382 sq. miles and its 2,456 MW of on-and off-shore wind generation capacity.

Weather variability is a perennial feature of risk for SSE as the largest generator of renewable electricity in UK and Ireland. One of the most material impacts that weather can have is fluctuations in weather patterns impacting adversely on the output of SSE's hydro-electric and wind generation assets. For instance, in the first half of 2021/22 SSE experienced one of the driest and calmest summer periods (April to September) on record which reduced adjusted operating profit through the summer period and impacted financial plans for the year.

Changes in generation output that is associated with changes in the weather is already factored into SSE's Risk Management Framework. There is the possibility that climate change could exacerbate these weather-related fluctuations by impacting weather patterns over the longer term. In addition, SSE has plans for a five-fold increase in renewables capacity by 2031 and prospects beyond 2031 and therefore this risk will continue to impact SSE.

#### Timeframe

More than 6 years

#### Magnitude of potential impact

High

#### Likelihood

Likely

#### Are you able to provide a potential financial impact figure?

Yes, an estimated range

#### Potential financial impact figure (currency)

<Not Applicable>

#### Potential financial impact figure - minimum (currency)

100000000

#### Potential financial impact figure - maximum (currency)

140000000

#### Explanation of financial impact

Based on SSE's long-term monitoring of weather changes and current forecasts, a plausible scenario has been established of significantly below-average rainfall and of low wind. The potential financial impact figure of between £100-140m was quantified in a 1.5oC scenario at 2050 by applying a combination of the IEA NZE 2050 wind generation CAGR (Compound Average Annual Growth Rate) to 2050 and the IPCC RCP 2.6 projected reduction in average wind speed times to SSE's existing earnings before tax and interest (EBIT) from wind generation for financial year to 31 March 23. The basis for this potential financial impact figure is quantified on a one-year annualised EBIT at 2050.

#### Primary response to risk

Improve monitoring

#### Description of response

While the opportunity to mitigate against year-to-year weather variability is limited, there is an element of geographical and technological diversity amongst SSE's renewable portfolio providing a natural hedge to changing weather patterns within and between years. For example, 2,456MW of on-and off-shore wind capacity in UK and Ireland and 1,459MW of hydro generation capacity (inc. pumped storage) in Scotland. This diversity enabled SSE to generate a renewable output of 10.2 TWh in 2022/23.

SSE monitors short- and long-term weather conditions so that it can manage and respond to conditions across its assets. To respond to weather pattern changes over the past few years, SSE has operated and adapted its conventional hydro generation plant in a way that allows it to more flexible and responsive for the needs of the electricity system, with increased storage and adaptive operating regimes.

In addition, SSE has crisis management and business continuity plans in place to deal with severe weather events that can damage energy assets.

One element of management costs directly attributed to this climate-related risk is the monitoring/forecasting of weather by SSE's meteorological team. The costs directly attributed to SSE's meteorological team and the management of weather is in the region of £333,000 annually.

#### Cost of response

333000

#### Explanation of cost of response

One element of management costs directly attributed to this climate-related risk is the monitoring/forecasting of weather by SSE's meteorological team. The costs directly attributed to SSE's meteorological team and the management of weather is in the region of £333,000 annually.

#### Country/Area & River basin

United Kingdom of Great Britain and Northern Ireland	Other, please specify (River catchments Scotland)
--	---

#### Type of risk & Primary risk driver

Regulatory	Regulation of discharge quality/volumes
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#### Primary potential impact

Reduction or disruption in production capacity

#### Company-specific description

Use of water by SSE's hydro generation assets are assessed through Scottish River Management Basin Plans in order to meet the requirements of European Union Water Framework Directive. Changes to environmental flows to meet the requirements of the Water Framework Directive can result in reduced generation output. SEPA has

capped the cumulative impact of improving the water environment out to 2027 on hydro generation activities to a maximum of 2% across all Scottish operators which equates to 100GWh/yr of output.

For example, at the River Garry in Perthshire a change to the operating licence in 2017/18 reduced generation from hydro power stations along the river by 20 to 30 GWh per annum. As a result, SSE reduced the water abstraction on the River Garry and its tributaries to meet the Water Framework Directive requirements. Following this reduction in water abstraction on the River Garry and its tributaries, there remain a small number of minor water bodies under potential consideration for the third RBMP (2021 – 2027) to identify and agree with SEPA what, if any, operational changes may be necessary to meet WFD requirements in the future. SSE and SEPA are currently reviewing water bodies affected, no decisions have been taken but a small number of water bodies where SEPA may request us to release water have provisionally been identified, this will have a limited impact on the business as the scale of these sites cumulate to less than 20GWh per annum.

**Timeframe**

More than 6 years

**Magnitude of potential impact**

Medium-low

**Likelihood**

Virtually certain

**Are you able to provide a potential financial impact figure?**

No, we do not have this figure

**Potential financial impact figure (currency)**

<Not Applicable>

**Potential financial impact figure - minimum (currency)**

<Not Applicable>

**Potential financial impact figure - maximum (currency)**

<Not Applicable>

**Explanation of financial impact**

An illustration of the potential financial impact of this risk is the reduction of water abstracted from the River Garry and its tributaries which has the potential to reduce hydro generation output by around 20-25 GWh in future years.

**Primary response to risk**

Engage with regulators/policymakers

**Description of response**

The response involves engagement with regulators, public policy makers, and other stakeholders in the river basin along with the adaptation and change of SSE's hydro generation assets in order to reduce the impact of future legislation on its generation output. The management and operation of the assets is kept under constant review to ensure output of renewable energy can be maximised, consistent with SSE's regulatory and other obligations. SSE's response to the risk of the impact of future legislation on generation activities is constantly monitored by regulatory and public affairs experts, along with the management team that oversees operations. SSE's experts respond in the designated timeframes to formal consultations. SSE's experts also engage and consult with government and regulators before legislation is statutory. Projects will be identified (where required) in operational and capital plans to ensure that any mitigating plans are in place to meet regulatory requirements. For example, SSE recently reduced the water abstraction on the River Garry and its tributaries to meet the Water Framework Directive requirements after extensive consultation and engagement with government, regulators and impacted local stakeholders (such as the Fisheries Board).

**Cost of response**

0

**Explanation of cost of response**

All costs associated with SSE's response to this risk are included within operational and capital investment plans and budgets. SSE engages and consults regularly with key stakeholders through formal consultation processes and through industry and sector working groups. SSE also has community consultation experts, public policy and regulatory experts that engage and consult with communities and other local stakeholders, government and regulators on any future legislation changes.

**Country/Area & River basin**

United Kingdom of Great Britain and Northern Ireland	Other, please specify (River catchments Scotland/ south England)
--	--

**Type of risk & Primary risk driver**

Acute physical	Flood (coastal, fluvial, pluvial, groundwater)
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**Primary potential impact**

Other, please specify (Decreased future adjusted operating profits and potential impact to recoverable value of assets.)

**Company-specific description**

Increased severity of extreme weather events, such as storms, floods and heat waves bring prolonged extreme temperatures, wind or rainfall. This may damage or stress network assets resulting in additional costs to repair and maintain the network and the loss of incentive revenue for distribution operators.

The impact of weather is a perennial feature of operating an electricity distribution network in the north of Scotland and south of England. In 2022/23 the network was affected by two extreme weather events, an ice storm in Shetland in December 2022 and Storm Otto in February 2023.

Future climate models predict that climate change will continue to bring extreme events such as storms, floods and heatwaves which will impact network assets. For example, severe adverse weather events can result in flooding of substations and/or damage to overhead lines.

**Timeframe**

More than 6 years

**Magnitude of potential impact**

Medium

**Likelihood**

Virtually certain

**Are you able to provide a potential financial impact figure?**

Yes, an estimated range

**Potential financial impact figure (currency)**

<Not Applicable>

**Potential financial impact figure - minimum (currency)**

70000000

**Potential financial impact figure - maximum (currency)**

90000000

**Explanation of financial impact**

The potential financial impact figure of between £70-90m was quantified in a 1.5oC scenario at 2050 by the aggregation of two elements of this risk:

- The first by applying a combination of the National Grid Future Energy Scenarios CAGRs (Compound Average Annual Growth Rate) and the IPCC RCP 2.6 projected reduction in average winter wind speed times to SSE's most recent exceptional storm costs for a financial year, which occurred in the financial year 21/22; and
- The second by applying the National Grid Future Energy Scenarios CAGRs to the financial quantification of the effect of heat on the network assets, based on the number of faults under different temperatures on the network assets.

Storm, wind and heat damage to networks assets risk is stated in GBP billion (£bn) based on one year annualised storm costs. External climate models have inherent limitations, with a lack of data on extreme climate events, and lower confidence levels on certain climate variables such as wind. SSE's assessments account for uncertainties by extracting average wind speed data to assess the impact.

**Primary response to risk**

Develop flood emergency plans

**Description of response**

SSE monitors short- and long-term weather conditions; has crisis management and business continuity plans; and has a continuous programme of investment in strengthening and improving the resilience of the electricity network (including overhead line replacement and refurbishment).

Using the Met Office's Climate Projections, asset resilience is reviewed using climate projections in the short, mid and long term. This includes assessing the impact to the assets from higher temperatures, changing rainfall patterns, rising sea levels, and more extreme weather events such as floods, droughts and heatwaves. This process is part of the UK Government's critical infrastructure assessment which takes place every five years. SSEN Transmission and Distribution responded to the latest call for updates to actions in December 2021.

This is a perennial risk that impacts SSE. For instance, in 2021/22, extreme weather events (storms, floods and heatwaves) impacted the resilience of SSENs electricity networks. Seven Met Office named storms impacted SSEN's distribution network in the winter of 2021/22, three of which became Red Alert events, Storm Arwen, Storms Malik/ Corrie and Storms Eunice/Franklin. These impacted over 100,000 customers, with many over a multi-day period. In addition, in 2022/23 the SSEN Distribution network was affected by two extreme weather events, an ice storm in Shetland (Dec '22) and Storm Otto I (Feb '23). Although the number and the intensity of extreme weather events that occurred in 2022/23 were less when compared to 2021/22, SSE continue to prioritise this as a material climate-related risk.

As SSE invests in its networks infrastructure, the impacts of climate change continue to be built into its capital and operational investment plans, including a Climate Resilience Strategy published as part of the RIIO-ED2 Distribution business plan.

**Cost of response**

56800000

**Explanation of cost of response**

The impact of these severe weather events includes significant costs that arise through the provision of compensation, customer welfare and additional operational and maintenance requirements.

In 2022/23, the total cash expenditure incurred on storm responses was £56.8m, including overhead line replacement and refurbishment (£32.7m), tree cutting (£23.0m) and flood protection (£1.1m).

Weather-related resilience spend is managed over price control periods and SSEN's RIIO-ED2 business plan for the upcoming price control period from 2023 to 2028 outlines significant new investment in network resilience.

**W4.2c**

**(W4.2c) Why does your organization not consider itself exposed to water risks in its value chain (beyond direct operations) with the potential to have a substantive financial or strategic impact?**

	Primary reason	Please explain
Row 1	Risks exist, but no substantive impact anticipated	<p>SSE has identified its material sustainability issues relating to its key business operations. SSE is working with its value chain (primarily suppliers) based on reviewing and understanding environmental, social and governance issues that are relevant and influence the business and its operations. In 2022, SSE established an independent and thorough review of its most material sustainability matters that are material in influencing business value and material to the environment and society, with support from an independent professional services firm, with the objective of confirming the ESG issues most material to SSE, both in terms of their impact on the business and the impact of the business on each issue. The assessment identified 21 ESG issues material and highlighted five highly material issues for SSE, alongside three areas of opportunity. These issues were:</p> <ol style="list-style-type: none"> <li>1. Carbon emissions.</li> <li>2. Sustainable energy generation.</li> <li>3. Affordable and reliable energy.</li> <li>4. Supply chain management.</li> <li>5. Skilled workforce</li> </ol> <p>Whilst water management was amongst the 21 material ESG issues, the five highly material issues were identified as high priority with the likelihood of and magnitude of potential financial/ reputational impacts higher than those posed by water issues. Water is highlighted as an issue to the business, but the risk review highlighted it as low priority in terms of the likelihood and magnitude of potential financial and reputation impact. Risks are reviewed annually. Overwhelmingly climate change is the most material environmental priority. SSE remains vigilant regarding the emergence of higher priority risks relating to water.</p>

## W4.3

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### (W4.3) Have you identified any water-related opportunities with the potential to have a substantive financial or strategic impact on your business?

Yes, we have identified opportunities, and some/all are being realized

## W4.3a

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### (W4.3a) Provide details of opportunities currently being realized that could have a substantive financial or strategic impact on your business.

#### Type of opportunity

Products and services

#### Primary water-related opportunity

Increased sales of existing products/services

#### Company-specific description & strategy to realize opportunity

Increasing volumes of intermittent wind energy will require support from flexible generators that provide system services, such as short-term reserve, frequency and long-duration energy storage services. The opportunity exists, from existing hydro expertise, to develop long-duration, low-carbon flexibility solutions that provide significant enduring value to the GB electricity system.

Hydro is unique in SSE's portfolio (it represents 17% of its portfolio capacity), as it can be characterised as both renewable and flexible. In addition to 400MW of run-of-river hydro, SSE has 750MW of flexible hydro and SSE's 300MW of pumped storage as well as planning consent for an additional 1.5GW of pumped storage. Flexible hydro operates as 'Britain's biggest battery' and SSE has a significant role to play in providing this. For SSE's existing hydro portfolio, ongoing investment in maintenance, upgrades and repowering will optimise the provision of low carbon flexibility.

SSE also has an important development option for large-scale, long-duration pumped hydro storage at Coire Glas in Scotland, with planning consent for a 1.5GW capacity project and c.30GWh of storage capacity potential. This would more than double existing pumped hydro storage capacity in GB. SSE is working with Government and the regulator to establish a market mechanism that would unlock investment into long-duration storage projects such as Coire Glas given the critical role they can play in securing low-carbon energy supplies in the UK.

The costs associated with realising this opportunity are wrapped up in the costs of the refurbishment of SSE's assets (which involves upgrades and replacement of plant as a result of age as well as to respond to this opportunity to provide more flexibility) as well as the capital development expenditure of Coire Glas.

SSE has been investing in its hydro fleet to make them more efficient and provide flexible and renewable energy to ensure that they can take advantage of a decarbonized energy system. SSE has an ongoing programme of maintenance, refurbishment and construction to ensure these assets continue to deliver during the low-carbon transition. In 2022/23 SSE invested c.£50m on existing hydro asset maintenance and repowering and early-stage development expenditure has already been incurred on Coire Glas, with the total capital cost for development expected to be in excess of £1bn.

#### Estimated timeframe for realization

More than 6 years

#### Magnitude of potential financial impact

Medium-high

#### Are you able to provide a potential financial impact figure?

Yes, an estimated range

#### Potential financial impact figure (currency)

<Not Applicable>

#### Potential financial impact figure – minimum (currency)

150000000

#### Potential financial impact figure – maximum (currency)

200000000

#### Explanation of financial impact

The potential financial impact figure range was quantified in a 1.5oC scenario at 2050 by applying a combination of the following assumptions to SSE's existing earnings before tax and interest (EBIT) from Hydro output for financial year to 31 March 2023:

- SSE's internal assumptions on the projected increase in optimisation of existing hydro assets, and
- SSE's investment projections in Coire Glas pumped storage station, and
- IEA NZE 2050 hydro generation CAGR (Compound Average Annual Growth Rate) to 2050, and
- SSE's internal assumptions in relation to power price factors to take account of market volatility.

The basis for this potential financial impact figure is quantified on a one-year annualised EBIT at 2050.

SSE has 1,459MW of existing hydro capacity (inc. pumped storage) and has planning consent for an additional 1.5GW of pumped storage at Coire Glas. SSE continues to invest in its hydro generation assets to increase flexibility to the UK grid. This represents 17% of SSE's generation capacity and 14% of the Group's electricity generation output in 2022/23.

SSE's current hydro generation capacity of 1.5GW had an adjusted operating profit of £293.1m and adjusted EBITDA of £324.7m in the year ended 31 March 2022.

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## W5. Facility-level water accounting

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(W5.1) For each facility referenced in W4.1c, provide coordinates, water accounting data, and a comparison with the previous reporting year.

**Facility reference number**

Facility 1

**Facility name (optional)**

Hydro generation Scotland

SSE's hydroelectric power stations are located across Scotland. Pitlochry is one of the key sites for hydro power at SSE and the longitude and latitude is taken from this point.

**Country/Area & River basin**

United Kingdom of Great Britain and Northern Ireland	Other, please specify (River catchments Scotland)
--	---

**Latitude**

56.7044

**Longitude**

3.7297

**Located in area with water stress**

No

**Primary power generation source for your electricity generation at this facility**

Hydropower

**Oil & gas sector business division**

<Not Applicable>

**Total water withdrawals at this facility (megaliters/year)**

22622722

**Comparison of total withdrawals with previous reporting year**

Lower

**Withdrawals from fresh surface water, including rainwater, water from wetlands, rivers and lakes**

22622722

**Withdrawals from brackish surface water/seawater**

0

**Withdrawals from groundwater - renewable**

0

**Withdrawals from groundwater - non-renewable**

0

**Withdrawals from produced/entrained water**

0

**Withdrawals from third party sources**

0

**Total water discharges at this facility (megaliters/year)**

22622722

**Comparison of total discharges with previous reporting year**

Lower

**Discharges to fresh surface water**

22622722

**Discharges to brackish surface water/seawater**

0

**Discharges to groundwater**

0

**Discharges to third party destinations**

0

**Total water consumption at this facility (megaliters/year)**

0

**Comparison of total consumption with previous reporting year**

About the same

**Please explain**

Over 97% of water abstracted and then discharged is associated with SSE's hydro generation business. In 2022/23, withdrawals from fresh water decreased very slightly by 2% compared to 2021/22. The slight decrease was due to a reduction in water passing through SSE's hydro generation facilities as a result of lower levels of rainfall compared to the previous year.

**Facility reference number**

Facility 2

**Facility name (optional)**

## Thermal generation

SSE's thermal power stations are situated across different locations in the UK. Keadby power station in North Lincolnshire is one of SSE's power station assets and the longitude and latitude is taken from this point.

### Country/Area & River basin

United Kingdom of Great Britain and Northern Ireland	Other, please specify (River catchments of England and Scotland)
--	--

#### Latitude

53.5967

#### Longitude

0.7395

#### Located in area with water stress

No

#### Primary power generation source for your electricity generation at this facility

Gas

#### Oil & gas sector business division

<Not Applicable>

#### Total water withdrawals at this facility (megaliters/year)

731483

#### Comparison of total withdrawals with previous reporting year

Lower

#### Withdrawals from fresh surface water, including rainwater, water from wetlands, rivers and lakes

252

#### Withdrawals from brackish surface water/seawater

729307

#### Withdrawals from groundwater - renewable

1902

#### Withdrawals from groundwater - non-renewable

0

#### Withdrawals from produced/entrained water

0

#### Withdrawals from third party sources

22

#### Total water discharges at this facility (megaliters/year)

730111

#### Comparison of total discharges with previous reporting year

Lower

#### Discharges to fresh surface water

0

#### Discharges to brackish surface water/seawater

728432

#### Discharges to groundwater

0

#### Discharges to third party destinations

1680

#### Total water consumption at this facility (megaliters/year)

1401

#### Comparison of total consumption with previous reporting year

Much higher

#### Please explain

For thermal plants water is used for cooling and as process water in a variety of operations. Cooling water is abstracted and returned to the environment. The better the cooling the higher the efficiency of water use and process water use.

Water consumption for thermal generation reflects the overall output of the power station as well as the type of water system used by the power station. Total water consumed from SSE's thermal power stations increased by over 80% between 2021/22 and 2022/23 predominantly due to increased output from thermal generation overall, as well as a proportional increase in the output from thermal power plant with cooling towers which have higher evaporative losses of water than once through (direct) cooling systems.

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#### Facility reference number

Facility 3

#### Facility name (optional)

Non-operational buildings SSE is headquartered in Perth, Scotland.

#### Country/Area & River basin

**Latitude**

56.935

**Longitude**

3.4308

**Located in area with water stress**

No

**Primary power generation source for your electricity generation at this facility**

Not applicable

**Oil & gas sector business division**

&lt;Not Applicable&gt;

**Total water withdrawals at this facility (megaliters/year)**

27.9

**Comparison of total withdrawals with previous reporting year**

Much higher

**Withdrawals from fresh surface water, including rainwater, water from wetlands, rivers and lakes**

0

**Withdrawals from brackish surface water/seawater**

0

**Withdrawals from groundwater - renewable**

0

**Withdrawals from groundwater - non-renewable**

0

**Withdrawals from produced/entrained water**

0

**Withdrawals from third party sources**

27.9

**Total water discharges at this facility (megaliters/year)**

27.9

**Comparison of total discharges with previous reporting year**

Higher

**Discharges to fresh surface water**

0

**Discharges to brackish surface water/seawater**

0

**Discharges to groundwater**

0

**Discharges to third party destinations**

27.9

**Total water consumption at this facility (megaliters/year)**

27.9

**Comparison of total consumption with previous reporting year**

Much higher

**Please explain**

SSE non-operational buildings water use in 2022/23 was 27,859 million m3, up from 22,875 million m3 the previous year as a result of a return to the offices after the lockdowns associated with the COVID pandemic.

SSE continues to implement ongoing water efficiency, behavioural change and saving programme in its non-operational offices, data centres and depots. SSE monitors the water use in these non-operational buildings, and in 2017 a target was launched as part of the programme, to reduce water consumption every year by 2.5%.

**W5.1a**

**(W5.1a) For the facilities referenced in W5.1, what proportion of water accounting data has been third party verified?**

#### Water withdrawals – total volumes

##### % verified

76-100

##### Verification standard used

Assured by PwC to the ISAE3000 (Revised) (Assurance Engagements other than Audits or Reviews of Historical Financial Information) standard; and ISAE3410 (assurance engagements on greenhouse gas statements). This document is uploaded in the response to W9.1

##### Please explain

<Not Applicable>

#### Water withdrawals – volume by source

##### % verified

76-100

##### Verification standard used

Assured by PwC to the ISAE3000 (Revised) (Assurance Engagements other than Audits or Reviews of Historical Financial Information) standard; and ISAE3410 (assurance engagements on greenhouse gas statements). This document is uploaded in the response to W9.1

##### Please explain

<Not Applicable>

#### Water withdrawals – quality by standard water quality parameters

##### % verified

76-100

##### Verification standard used

Assured by PwC to the ISAE3000 (Revised) (Assurance Engagements other than Audits or Reviews of Historical Financial Information) standard; and ISAE3410 (assurance engagements on greenhouse gas statements). This document is uploaded in the response to W9.1

##### Please explain

<Not Applicable>

#### Water discharges – total volumes

##### % verified

76-100

##### Verification standard used

Assured by PwC to the ISAE3000 (Revised) (Assurance Engagements other than Audits or Reviews of Historical Financial Information) standard; and ISAE3410 (assurance engagements on greenhouse gas statements). This document is uploaded in the response to W9.1

##### Please explain

<Not Applicable>

#### Water discharges – volume by destination

##### % verified

76-100

##### Verification standard used

Assured by PwC to the ISAE3000 (Revised) (Assurance Engagements other than Audits or Reviews of Historical Financial Information) standard; and ISAE3410 (assurance engagements on greenhouse gas statements). This document is uploaded in the response to W9.1

##### Please explain

<Not Applicable>

#### Water discharges – volume by final treatment level

##### % verified

Not verified

##### Verification standard used

<Not Applicable>

##### Please explain

SSE undertook an exercise to review which KPIs were going to be assured in 2022/23. This metric has not undergone third party assurance as it was assessed that it was immaterial.

#### Water discharges – quality by standard water quality parameters

##### % verified

Not verified

##### Verification standard used

<Not Applicable>

##### Please explain

SSE undertook an exercise to review which KPIs were going to be assured in 2022/23. This metric has not undergone third party assurance as it was assessed that it was immaterial.

**Water consumption – total volume**

**% verified**

76-100

**Verification standard used**

Assured by PwC to the ISAE3000 (Revised) (Assurance Engagements other than Audits or Reviews of Historical Financial Information) standard; and ISAE3410 (assurance engagements on greenhouse gas statements). This document is uploaded in the response to W9.1

**Please explain**

<Not Applicable>

**W6. Governance**

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**W6.1**

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**(W6.1) Does your organization have a water policy?**

Yes, we have a documented water policy that is publicly available

**W6.1a**

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**(W6.1a) Select the options that best describe the scope and content of your water policy.**

	Scope	Content	Please explain
Row 1	Company-wide	Description of the scope (including value chain stages) covered by the policy Commitment to prevent, minimize, and control pollution Commitment to the conservation of freshwater ecosystems Commitments beyond regulatory compliance	SSE's Environment policy is company-wide and provides the policy framework on the environment for all its business operations, recognising our management commitments and dependency on resource use such as water. This policy is implemented locally by business units through environmental management systems. The policy requires SSE's operations to, amongst other things, identify material impacts, manage environmental risks, engage positively with key stakeholders, work with suppliers, and integrate environmental improvements into everyday decision making. The policy commits SSE to conduct its operational activities in compliance with all relevant legal and regulatory obligations. Where possible, the Company also seeks to go above and beyond this and meet additional relevant voluntary standards that the company subscribes in order to bring about positive environmental outcomes. Water is included as part of this policy, processes and procedures. Specifically, SSE commits to "decreasing the impact of our resource consumption by: <ul style="list-style-type: none"><li>• Minimising resource use and waste production.</li><li>• Minimising waste to landfill and increasing recycling.</li><li>• Working with our supply chain to improve performance and innovation.</li><li>• Engaging with the circular economy, by using reprocessed materials and ensuring our resources can readily be reused or recycled so far as is practical.</li><li>• Selecting materials that have sustainable lifecycle impacts."</li></ul> The policy also commits to "Engage positively with key stakeholders on environmental issues and take responsibility within the wider community for improving the environmental impact of our business." This policy applies to all SSE employees and contingent workers. It is relevant to people contracted to provide services to the Company through third parties. The Policy applies to Joint Venture partnerships where SSE manage and provide operational resources. SSE's Group Climate Change policy also acknowledges the potential for water-related climate risks: "SSE assesses the risk of the physical impacts of climate change, including the increased likelihood of severe weather events, in its business continuity and crisis management plans, and implements climate adaptation plans". These policies are group policies, signed by the Chief Executive Officer.

**W6.2**

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**(W6.2) Is there board level oversight of water-related issues within your organization?**

Yes

**W6.2a**

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**(W6.2a) Identify the position(s) (do not include any names) of the individual(s) on the board with responsibility for water-related issues.**

Position of individual or committee	Responsibilities for water-related issues
Chief Executive Officer (CEO)	<p>The Chief Executive (CEO) has overall responsibility for ensuring the decisions and actions of the company are sustainable in the long-term, through appropriate management, implementation and progress of sustainability interventions which support SSE's strategy and address material impacts inc. climate change and environment (inc. water). The CEO is assisted by Board-level committees, senior management and specific management committees.</p> <p>An example of a water-related decision made by the CEO in 2022/23 is the approval to spend £100m on exploratory work at the Coire Glas pumped hydro storage project. Coire Glas will comprise a lower reservoir at Loch Lochy and a new upper reservoir. This upper reservoir will store up to 26bn litres of water. The project will double Britain's total current electricity storage capacity.</p> <p>The Board is advised on matters of safety, health and environment (SHE) by the Safety, Sustainability, Health and Environment Advisory Committee (SSHEAC). The SSHEAC has an overarching role in supporting SSE's commitment to be a sustainable company. The SSHEAC reviews and oversees the implementation of key Group policies (that include water-related aspects), including the Safety and Health policy, Environment policy, and Sustainability policy.</p> <p>Below the board, the Safety, Health and Environment Committee SHEC makes sure that the Environment policy is adhered to through awareness, training and monitoring of policy implementation. Incidents and breaches are reviewed and where appropriate opportunities for improvement are actioned. Further, the SHEC provides a forum for senior SSE managers to meet with Trade Union/Employee representatives.</p> <p>The SSEPD Board (SSE's two electricity network businesses have a dedicated governance framework underneath SSE plc Board reflecting business separation obligations under Ofgem licenses) is responsible for the oversight of SSEN's most material sustainability impacts (including severe weather and flooding).</p>

**W6.2b**

**(W6.2b) Provide further details on the board's oversight of water-related issues.**

	Frequency that water-related issues are a scheduled agenda item	Governance mechanisms into which water-related issues are integrated	Please explain
Row 1	Scheduled - some meetings	Monitoring implementation and performance Reviewing and guiding annual budgets Reviewing and guiding business plans Reviewing and guiding corporate responsibility strategy Reviewing and guiding major plans of action Reviewing and guiding risk management policies Reviewing and guiding strategy Reviewing innovation/R&D priorities Setting performance objectives	<p>The Board is advised on matters of safety, health and environment (SHE) by the Safety, Sustainability Health and Environment Advisory Committee (SSHEAC). Committee membership comprises four non-Executive Directors; the Chair of the Board; the Chief Commercial Officer; the Chief Sustainability Officer; and three senior executives. The SSHEAC has an overarching role in supporting SSE's commitment to be a sustainable company that makes a positive contribution to the communities and societies of which it is part.</p> <p>The SSHEAC has oversight of the annual SSE Sustainability Report and across 2022/23, it enhanced its oversight of ESG matters through deep dives on SSE's external benchmark performance and an ESG gap analysis. The Committee has responsibility for: reviewing SSE's comparative ESG ratings performance; approving SSE's Sustainability Report; reviewing the physical risks of climate change on SSE's activities with a focus on climate adaptation and resilience; and increased oversight of SSE's policy, practice and performance surrounding environmental impacts, including waste, air emissions, biodiversity and water consumption – under which it continues to oversee the actions which have been agreed to manage SSE's environmental footprint.</p> <p>SSE's Chief Sustainability Officer (reporting to the Chief Executive) is responsible for advising the Board and its Committees, the Group Executive Committee (GEC) and individual Business Units, on sustainability issues and strategy (including water-related aspects). The Sustainability team supports and drives sustainability performance programmes across the organisation and reports progress on sustainability activities to the full range of SSE's stakeholders.</p>

**W6.2d**

**(W6.2d) Does your organization have at least one board member with competence on water-related issues?**

	Board member(s) have competence on water-related issues	Criteria used to assess competence of board member(s) on water-related issues	Primary reason for no board-level competence on water-related issues	Explain why your organization does not have at least one board member with competence on water-related issues and any plans to address board-level competence in the future
Row 1	Yes	SSE's CEO has been a Non-Executive Director of Anglian Water Services Limited since November 2022. This role provides the CEO with insight into the material issues within the water supply industry, how to responsibly manage water resources and how respond to water-related risks. In addition, SSE has two non-executive directors with direct water experience and four non-executive directors with carbon and climate expertise. Additionally, three of SSE's executive directors each have over twenty years of experience of managing climate and environmental impacts. As a result, SSE believes that the board has significant depth of knowledge on water and environment-related issues.	<Not Applicable>	<Not Applicable>

**W6.3**

**(W6.3) Provide the highest management-level position(s) or committee(s) with responsibility for water-related issues (do not include the names of individuals).**

**Name of the position(s) and/or committee(s)**

Other, please specify (Chief Executive Officer (CEO))

**Water-related responsibilities of this position**

Assessing future trends in water demand  
Assessing water-related risks and opportunities  
Managing water-related risks and opportunities

**Frequency of reporting to the board on water-related issues**

Quarterly

**Please explain**

The Group Executive Committee (GEC) is responsible for implementing the Group strategy set by the Board. Sustainability (including water-related aspects) are integrated and considered within the Group strategy. The Chief Executive chairs the GEC and as Executive Director with responsibility for sustainability, agrees the annual objectives and priorities of the Chief Sustainability Officer. SSE's strategy is focused on the transition to net zero and its business model, which embeds sustainability throughout, is designed to ensure that it is achieving its core business objectives. This includes the environment and water-related issues that impact its key stakeholders and wider society. The GEC also monitors the operational and financial performance of sustainability related activities across the organisation. It is supported by the Group Safety, Health and Environment Committee in relation to sustainability matters.

**Name of the position(s) and/or committee(s)**

Safety, Health, Environment and Quality committee

**Water-related responsibilities of this position**

Assessing future trends in water demand  
Assessing water-related risks and opportunities  
Managing water-related risks and opportunities

**Frequency of reporting to the board on water-related issues**

Quarterly

**Please explain**

The Safety, Health and Environment Committee advises the Group Executive Committee on safety, health and environment (SHE) matters. It is responsible for SHE policies, targets and strategy, performance, awareness and action including water related issues.

**W6.4**

**(W6.4) Do you provide incentives to C-suite employees or board members for the management of water-related issues?**

	Provide incentives for management of water-related issues	Comment
Row 1	Yes	SSE's approach to Executive remuneration reflects the role of sustainability and climate-related considerations within SSE's purpose and strategy, with sustainability-linked metrics and targets forming an element of performance-related pay.

**W6.4a**

**(W6.4a) What incentives are provided to C-suite employees or board members for the management of water-related issues (do not include the names of individuals)?**

	Role(s) entitled to incentive	Performance indicator	Contribution of incentives to the achievement of your organization's water commitments	Please explain
Monetary reward	Board/Executive board Chief Executive Officer (CEO) Chief Financial Officer (CFO) Chief Operating Officer (COO) Chief Sustainability Officer (CSO)	Other, please specify (Company performance against a sustainability index with water-related factors (e.g., DJSI, CDP Water Security score, etc.))	SSE's Annual Incentive Plan (AIP) links 10% of the award to the Company's sustainability performance by assessing SSE's performance across three key ESG ratings (Moody's ESG rating, Sustainalytics sustainability index and S&P Global sustainability index). These ESG indices factor in performance on a wide range of sustainability matters, such as SSE's environmental performance on water-related issues.  By encouraging SSE to achieve its upper quintile ranking across all indices, the incentives are linked to the continuous improvement of SSE sustainability performance. Performance across these ESG ratings in 2022/23 was strong, with upper quintile ranking achieved across all indices.	SSE's approach to Executive remuneration reflects the role of sustainability and water-related considerations within SSE's purpose and strategy, with sustainability-linked metrics and targets forming an element of performance-related pay.  Approved by shareholders at the 2022 AGM, the Annual Incentive Plan has seen two important changes:  • performance against the 2030 Goals is now linked to the longer-term Performance Share Plan. • average performance across three independent external ESG ratings, now being linked to the Annual Incentive Performance.  Annual Incentive Plan (AIP): The Remuneration Committee aligns 10% of the AIP to sustainability performance by assessing SSE's performance across three key ESG ratings (Moody's, Sustainalytics and S&P Global). These ESG indices factor in performance on a wide range of sustainability matters, such as SSE's environmental performance on water-related issues. By encouraging SSE to achieve its upper quintile ranking across all indices, the incentives are linked to the continuous improvement of SSE's water-related performance.  Performance Share Plan (PSP): PSP is linked to the progress against the achievement of SSE's four business goals aligned to the UN Sustainable Development Goals. One of which is to build a renewable energy portfolio that generates at least 50TWh of renewable electricity a year by 2030. While the majority of this output will be from SSE's wind portfolio, it also covers hydro output.
Non-monetary reward	No one is entitled to these incentives	<Not Applicable>	<Not Applicable>	SSE does not offer non-monetary rewards for the management of water-related issues.

## W6.5

### (W6.5) Do you engage in activities that could either directly or indirectly influence public policy on water through any of the following?

- Yes, direct engagement with policy makers
- Yes, trade associations
- Yes, funding research organizations

## W6.5a

### (W6.5a) What processes do you have in place to ensure that all of your direct and indirect activities seeking to influence policy are consistent with your water policy/water commitments?

SSE's business strategy and its sustainability value guides its overall approach on environment and climate change issues. SSE has policy and public affairs specialists based across the UK and Ireland who engage constructively with legislators, officials and other policy makers on all aspects of environment and climate change policy. All communications across the business are managed by these experts and processes are in place to ensure consistency, quality, and accuracy of communications across SSE. These processes ensure approaches are consistent with SSE's Environment Policy.

Any issues of non-compliance once identified are handled through constructive engagement with the relevant regulator to ensure mitigations and remunerations are actioned. SSE has a commitment to responsible political engagement, and this is communicated through its political engagement policy. This policy is in place for all employees and is consistently applied across the SSE Group and governs both SSE's policies in this area – for example its policy on political contributions - and serves as a guide to how employees should conduct themselves when representing SSE to government or other institutions.

## W6.6

### (W6.6) Did your organization include information about its response to water-related risks in its most recent mainstream financial report?

- Yes (you may attach the report - this is optional)

## W7. Business strategy

### W7.1

#### (W7.1) Are water-related issues integrated into any aspects of your long-term strategic business plan, and if so how?

	Are water-related issues integrated?	Long-term time horizon (years)	Please explain
Long-term business objectives	Yes, water-related issues are integrated	21-30	<p>SSE's vision is to be a leading energy company in a net-zero world. Its purpose is to provide the energy needed today while building a better world of energy for tomorrow. Its strategy is to create value for shareholders and society from developing, building, operating and investing in electricity infrastructure and businesses needed in the transition to net zero.</p> <p>SSE's businesses involve a mix of net-zero focused businesses including a portfolio of world-class renewable generation assets and electricity network businesses. These businesses are key to enabling a net zero economy, have significant growth potential and, importantly, they fit together. The strategy is therefore focussed on developing, building, operating and investing in assets that create long-term value and are vital to the low-carbon transition. Increasing volumes of clean energy are required to enable a net zero economy. Flexible generation and storage are required to provide electricity when wind output is low. SSE's hydro generation assets (inc. pumped storage) are in a good position to take advantage of an increase in value of flexible output. In addition, SSE has further options through investment in flexible pumped storage such as an additional 1.3GW at Coire Glas. Therefore, SSE's hydro generation assets are well placed to provide this in an optimal way.</p>
Strategy for achieving long-term objectives	Yes, water-related issues are integrated	21-30	<p>SSE's strategy is a commitment to contribute substantively to the transition to a low-carbon electricity system. To support this strategy, SSE's businesses will be focused on economically regulated electricity networks and renewable sources of energy, complemented by others that contribute to the transition to net zero.</p> <p>Flexible generation and storage are required to provide electricity when wind output is low. SSE's hydro generation assets (inc. pumped storage) are in a good position to take advantage of an increase in value of flexible output.</p> <p>SSE's strategy to achieve these objectives relies on two pillars: increasing the efficiency of current assets and developing new ones.</p> <ul style="list-style-type: none"> <li>• SSE has a consent for the development of 1.3GW Coire Glas scheme. SSE sees this has having an important role in providing critical flexibility to balance the increasing volumes of variable renewables. SSE is working closely with policy makers to encourage further clarity on the policy framework and route to market for such projects.</li> <li>• In recent years hydro-electric generation has demonstrated its capability in delivering substantial value through flexible operation enabled by enhancements to SSE's commercial management of these assets. These assets will continue to play an important role in providing low-carbon flexibility required for the net zero transition.</li> </ul>
Financial planning	Yes, water-related issues are integrated	11-15	<p>The expansion of SSE's renewable energy portfolio includes the development and investment of its hydro generation assets. Capital and operating investment decisions integrate water-related issues into the financial planning process.</p> <p>In addition, SSE's environmental improvement plan sets goals and targets on water-related issues. These water-related goals and targets require capital and operational investment, and these are included as part of annual financial plans and decision making.</p>

### W7.2

**(W7.2) What is the trend in your organization’s water-related capital expenditure (CAPEX) and operating expenditure (OPEX) for the reporting year, and the anticipated trend for the next reporting year?**

Row 1

**Water-related CAPEX (+/- % change)**

17

**Anticipated forward trend for CAPEX (+/- % change)**

**Water-related OPEX (+/- % change)**

423

**Anticipated forward trend for OPEX (+/- % change)**

**Please explain**

The CapEx figures include: SSE's adjusted capital expenditure in its Thermal generation (all business activities); and hydro generation CapEx (approximately £50m). Between 2021/22 and 2022/23 SSE's water-related CapEx increased by 17%.

The OPEX figures include: SSE's operational expenditure in relation to its Thermal generation (GB fleet only). Between 2021/22 and 2022/23 SSE's water-related OPEX increased by 423% as a result of the significant increase in the prices for the fuel consumed in SSE's GB Thermal power stations.

In May 2023, SSE announced an update to its Net Zero Acceleration Programme (NZAP+), a fully funded capex plan of £18bn focused on low-carbon infrastructure to 2026. 40% of the spend is earmarked for Renewables projects (including hydro); 50% in electricity networks, with the remaining 10% focused on low-carbon thermal and other flexible technologies.

**W7.3**

**(W7.3) Does your organization use scenario analysis to inform its business strategy?**

	Use of scenario analysis	Comment
Row 1	Yes	<p>SSE has structured its climate disclosures according to the Task Force on Climate-related Disclosures (TCFD) recommendations since 2018. One of the requirements of the TCFD is to "describe the resilience of the organisation's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario".</p> <p>In 2022/23, SSE conducted scenario analysis of its material climate-related opportunities and risks. SSE introduced 'impact pathways' to map each potential climate event and its effect on SSE's activities. To calculate the potential financial impact, a combination of data sources were used involving historical internal business data, external independent climate-related scenario data alongside current and approved forecast financial data.</p> <p>SSE believes it is fully compliant with TCFD recommended disclosure Strategy 2.c as it describes the resilience of the organisation to the material identified climate-related risks in its Annual Report.</p>

**W7.3a**

**(W7.3a) Provide details of the scenario analysis, what water-related outcomes were identified, and how they have influenced your organization’s business strategy.**

	Type of scenario analysis used	Parameters, assumptions, analytical choices	Description of possible water-related outcomes	Influence on business strategy
Row 1	Water-related Climate-related	<p>Climate opportunities IEA Stated Polices Scenario (STEPS) (2022) - 1.5oC</p> <p>Climate opportunities IEA Stated Polices Scenario (STEPS) (2022) - 2.5oC</p>	<p>SSE used the climate transition data within the IEA STEPS scenario in the quantification process of its material climate opportunities, in 2022/23.</p> <p>The value of flexible hydro-electricity output was identified as a material opportunity for SSE. A renewables-led electricity system will require support from flexible generators that provide system services, such as short-term reserve, frequency and long-duration storage services. The opportunity exists to use low-carbon flexible hydro capacity and invest in pumped storage capacity to support the GB electricity system. Key assumptions included the projected hydro generation capacity from the IEA Net Zero Emissions and STEPS scenarios, SSE's renewable investment projections and internal price factors to take account of market volatility.</p> <p>The scenario analysis assessed the optimisation of SSE's existing hydro assets and the development of Coire Glas a large scale, long-duration pumped storage project. The 1.5°C scenario indicated a greater opportunity for SSE's hydro assets in 2050 reflecting the impact of investing in Coire Glas, with a range of £0.15bn to £0.20bn, when compared to the warmer 2.5°C scenario.</p>	<p>SSE seeks to invest in its existing 1.5GW of hydro capacity as well as develop pumped storage capacity at Coire Glas as part of its current five-year investment programme. This investment strategy is therefore aligned to the opportunities arising from a 1.5°C scenario. SSE sees this has having an important role in providing critical flexibility to balance the increasing volumes of variable renewables in a net zero world.</p>

**W7.4**

**(W7.4) Does your company use an internal price on water?**

**Row 1**

**Does your company use an internal price on water?**

No, but we are currently exploring water valuation practices

**Please explain**

SSE actively manages its environmental footprint and takes careful consideration of water and related biodiversity in its activities. To target enhanced value for nature, SSE has made a commitment to achieve biodiversity net gain on all its newly consented large onshore capital projects by 2025. To support these targets, SSEN networks has been piloting the use of natural capital tools to measure ecosystem services and the value of natural capital (including water quality, flood protection and other water-related impacts). The NatCapMap approach is being trialled by SSEN Transmission's at its Knocknagael – Tomatin Overhead Line project. In addition, SSEN networks is using Natural England's Biodiversity Metric 3.0 to calculate the units required to deliver the soon to be mandatory 10% BNG for new developments in England. This in turn has resulted in a trading market for biodiversity units. SSEN Distribution has used it as a proxy for measurement in England and Scotland.

**W7.5**

**(W7.5) Do you classify any of your current products and/or services as low water impact?**

	Products and/or services classified as low water impact	Definition used to classify low water impact	Primary reason for not classifying any of your current products and/or services as low water impact	Please explain
Row 1	No, but we plan to address this within the next two years	<Not Applicable>	Important but not an immediate business priority	<p>The vast majority (97%) of water abstracted in 2022/23 was used in SSE's hydro generation operations. This water is technically recorded as abstracted, but it passes through turbines to generate electricity and is returned to the environment almost immediately, and therefore has minimal environmental impact.</p> <p>Despite this minimal environmental impact overall, SSE works closely with regulators, environmental organisations and the local community to ensure that its hydro-electricity operations have minimal adverse impacts on these stakeholders, biodiversity and the environment. SSE monitors all abstractions (based on the volume of water passing through its turbines), compensation and freshet flows and report these to the Regulator, the Scottish Environment Protection Agency (SEPA), on an annual basis or as requested.</p>

**W8. Targets**

**W8.1**

**(W8.1) Do you have any water-related targets?**

Yes

**W8.1a**

**(W8.1a) Indicate whether you have targets relating to water pollution, water withdrawals, WASH, or other water-related categories.**

	Target set in this category	Please explain
Water pollution	Yes	<Not Applicable>
Water withdrawals	Yes	<Not Applicable>
Water, Sanitation, and Hygiene (WASH) services	No, but we plan to within the next two years	SSE does not set targets relating to Water, Sanitation, and Hygiene (WASH) services. All SSE employees have access to safely managed drinking water, sanitation services and hand-washing facilities.
Other	No, but we plan to within the next two years	SSE does not set other targets.

**W8.1b**

(W8.1b) Provide details of your water-related targets and the progress made.

**Target reference number**

Target 1

**Category of target**

Water pollution

**Target coverage**

Company-wide (direct operations only)

**Quantitative metric**

Other, please specify (No pollution incidents - number)

**Year target was set**

2022

**Base year**

2022

**Base year figure**

0

**Target year**

2023

**Target year figure**

0

**Reporting year figure**

0

**% of target achieved relative to base year**

<Calculated field>

**Target status in reporting year**

Underway

**Please explain**

In 2022/23, the number of environmental permit breaches as a result of SSE's activities totalled 9 compared to 7 in the previous year. In this period there was one major environmental incident, related to SF6, at SSE's substation project in Alyth which led to the release of 63kg of SF6 gas to the atmosphere. However, there were no major incidents related to water. SSE monitors, and reports water aspects in accordance with specific requirements of its environmental permits. SSE has a ISO14001 system in place to manage its activities. It also has emergency procedures, secondary containment, and water treatment facilities where required in relation to permit conditions. The increased transparency around water reporting has led to the improvement in the reliability of water data. In addition, SSE conducts internal water audits of water monitoring, data collection and reporting activities. Part of the improved due diligence process is the assurance of water data by PwC first in 2015/16 and the repeated assurance of water data by PwC from 2016/17 to 2022/23.

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**Target reference number**

Target 2

**Category of target**

Water withdrawals

**Target coverage**

Company-wide (direct operations only)

**Quantitative metric**

Reduction of water withdrawals from municipal supply or other third party sources

**Year target was set**

2021

**Base year**

2019

**Base year figure**

39955

**Target year**

2023

**Target year figure**

38956

**Reporting year figure**

27859

**% of target achieved relative to base year**

1210.81081081081

**Target status in reporting year**

Underway

**Please explain**

2022/23 total consumption was 27,859m<sup>3</sup>, 22% higher than the previous year owing to increased building occupancy. However, reported consumption is below pre-pandemic 2019/20 reported consumption of 39,956m<sup>3</sup>, a reduction of 30%.

W9. Verification

W9.1

(W9.1) Do you verify any other water information reported in your CDP disclosure (not already covered by W5.1a)?

Yes

W9.1a

(W9.1a) Which data points within your CDP disclosure have been verified, and which standards were used?

Disclosure module	Data verified	Verification standard	Please explain
W1 Current state	Water withdrawn, consumed and returned by PwC and published externally.	ISAE 3000	SSE calculates the water withdrawn, consumed and returned using UK Government (BEIS) reporting standards and is assured by PwC and published externally.  This data is also included in section 5.

W10. Plastics

W10.1

(W10.1) Have you mapped where in your value chain plastics are used and/or produced?

	Plastics mapping	Value chain stage	Please explain
Row 1	Not mapped – and we do not plan to within the next two years	<Not Applicable>	In 2022, SSE established an independent and thorough review of its most material environmental, social and governance (ESG) issues. SSE undertook its double materiality assessment, a concept which acknowledges that a company should report simultaneously on sustainability matters that are material in influencing business value and material to the environment and society, with support from an independent professional services firm. The objective was to confirm the ESG issues most material to SSE, both in terms of their impact on the business and the impact of the business on each issue. The assessment identified 21 ESG issues material and highlighted five highly material issues for SSE, alongside three areas of opportunity. These issues were:  1. Carbon emissions. 2. Sustainable energy generation. 3. Affordable and reliable energy. 4. Supply chain management. 5. Skilled workforce  Whilst circularity and waste management were amongst the material ESG issues, the five highly material issues were identified as having the likelihood of and magnitude of potential financial/reputational impacts higher than those posed by waste management issues. SSE recognises the potential environmental and human health impacts that are associated with the Company's use of plastics to ensure effective environmental management, SSE operates an environmental management system (EMS) certified to ISO14001, including controls, processes and procedures, across all its business activities that interact with the environment. In 2022/23, SSEN Distribution, SSE Energy Customer Solutions and SSE Enterprise all achieved certification for the first time. SSE will continue to apply the waste hierarchy with respect to the plastic it uses and provide recycling facilities at its key offices and operational sites, adhering to the relevant regulatory requirements for waste management.  SSE has not mapped its use of value chain plastics and it is unlikely to do so within the next two years.

W10.2

(W10.2) Across your value chain, have you assessed the potential environmental and human health impacts of your use and/or production of plastics?

	Impact assessment	Value chain stage	Please explain
Row 1	Not assessed – and we do not plan to within the next two years	<Not Applicable>	In 2022, SSE established an independent and thorough review of its most material environmental, social and governance (ESG) issues. SSE undertook its double materiality assessment with support from an independent professional services firm. The objective was to confirm the ESG issues most material to SSE, both in terms of their impact on the business and the impact of the business on each issue. The assessment identified 21 ESG issues material and highlighted five highly material issues for SSE, alongside three areas of opportunity. These issues were:  1. Carbon emissions. 2. Sustainable energy generation. 3. Affordable and reliable energy. 4. Supply chain management. 5. Skilled workforce  Whilst circularity and waste management were amongst the material ESG issues, the five highly material issues were identified as having the likelihood of and magnitude of potential financial/reputational impacts higher than those posed by waste management issues. SSE recognises the potential environmental and human health impacts that are associated with the Company's use of plastics to ensure effective environmental management, SSE operates an environmental management system (EMS) certified to ISO14001, including controls, processes and procedures, across all its business activities that interact with the environment. In 2022/23, SSEN Distribution, SSE Energy Customer Solutions and SSE Enterprise all achieved certification for the first time. SSE will continue to apply the waste hierarchy with respect to the plastic it uses and provide recycling facilities at its key offices and operational sites, adhering to the relevant regulatory requirements for waste management.  SSE has not assessed the potential environmental and human health impacts of its plastics use and it is unlikely to do so within the next two years.

## W10.3

**(W10.3) Across your value chain, are you exposed to plastics-related risks with the potential to have a substantive financial or strategic impact on your business? If so, provide details.**

	Risk exposure	Value chain stage	Type of risk	Please explain
Row 1	No, risks assessed, and none considered as substantive	<Not Applicable>	<Not Applicable>	<p>In 2022, SSE established an independent and thorough review of its most material environmental, social and governance (ESG) issues. SSE undertook its double materiality assessment, a concept which acknowledges that a company should report simultaneously on sustainability matters that are material in influencing business value and material to the environment and society, with support from an independent professional services firm. The objective was to confirm the ESG issues most material to SSE, both in terms of their impact on the business and the impact of the business on each issue. The assessment identified 21 ESG issues material and highlighted five highly material issues for SSE, alongside three areas of opportunity. These issues were:</p> <ol style="list-style-type: none"> <li>1. Carbon emissions.</li> <li>2. Sustainable energy generation.</li> <li>3. Affordable and reliable energy.</li> <li>4. Supply chain management.</li> <li>5. Skilled workforce</li> </ol> <p>Whilst circularity and waste management were amongst the material ESG issues, the five highly material issues were identified as having the likelihood of and magnitude of potential financial/reputational impacts higher than those posed by waste management issues.</p> <p>SSE's Group Executive Committee (GEC) and its sub-Committees have responsibility for overseeing SSE's eleven Principal Risks, of which Climate Change is one. In 2022/23, no plastics-related risks with the potential to have a substantive financial or strategic impact on the Company were identified.</p>

## W10.4

**(W10.4) Do you have plastics-related targets, and if so what type?**

	Targets in place	Target type	Target metric	Please explain
Row 1	No – and we do not plan to within the next two years	<Not Applicable>	<Not Applicable>	<p>SSE does not set plastic-specific targets. However, Group-wide targets have been set for waste generated within SSE's operations. SSE's target for 2022/23 was to divert 85% of waste by tonnage from landfill and recycle 40% of waste by tonnage. It exceeded these targets, with 65% of SSE's total waste being recycled/composted and only 5% being sent to landfill. The proportion of waste sent to landfill more than halved compared to the previous year, with a higher proportion of waste being processed as energy from waste and an increase in recycled waste that resulted from improved recycling processes implemented at sites. Almost all plastic collected by SSE's waste management services provider was recycled in 2022/23.</p> <p>SSE has not set a plastics-related target and it is unlikely to do so within the next two years.</p>

## W10.5

**(W10.5) Indicate whether your organization engages in the following activities.**

	Activity applies	Comment
Production of plastic polymers	No	SSE does not produce plastic polymers.
Production of durable plastic components	No	SSE does not produce durable plastic components.
Production / commercialization of durable plastic goods (including mixed materials)	No	SSE does not produce durable plastic goods.
Production / commercialization of plastic packaging	No	SSE does not produce plastic packaging.
Production of goods packaged in plastics	No	SSE does not produce goods packaged in plastics.
Provision / commercialization of services or goods that use plastic packaging (e.g., retail and food services)	No	SSE does not widely provide services or goods that use plastic packages.

## W11. Sign off

### W-FI

**(W-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.**

### W11.1

**(W11.1) Provide details for the person that has signed off (approved) your CDP water response.**

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

## Submit your response

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### In which language are you submitting your response?

English

### Please confirm how your response should be handled by CDP

	I understand that my response will be shared with all requesting stakeholders	Response permission
Please select your submission options	Yes	Public

### Please indicate your consent for CDP to share contact details with the Pacific Institute to support content for its Water Action Hub website.

Yes, CDP may share our Main User contact details with the Pacific Institute

### Please confirm below

I have read and accept the applicable Terms