

## Welcome to your CDP Water Security Questionnaire 2019

### W0. Introduction

#### W0.1

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

SSE plc is one of the UK and Ireland's leading energy companies, involved in the generation, transmission, distribution and supply of electricity, the production, storage, distribution and supply of gas and in the provision of energy-related services. It is a developer, an operator and owner of energy assets and businesses.

SSE's vision is to be a leading energy company in a low-carbon world. Its purpose is to provide the energy needed today while building a better world of energy for tomorrow. And its strategy is to create value for shareholders and society from developing, operating and owning energy and related infrastructure in a sustainable way.

At the core of its business are a portfolio of world-class renewable generation assets and electricity network businesses. These businesses are particularly well placed to seize the opportunities presented by decarbonisation and electrification. The strategy is therefore focussed on developing, operating and owning assets that create long-term value and are vital to the low-carbon transition.

Through its Sustainable Development Goals (SDGs), the United Nations has created a blueprint for a sustainable world and in 2019, the SSE plc Board agreed to align its business strategy to them, in particular, by prioritising SDG 13, Climate Action; SDG 7, Affordable and Clean Energy; SDG 9 Industry, Innovation and Infrastructure; and, SDG 8 Decent Work and Economic Growth. SSE set four fundamental business goals of its own linked to these UN SDGs. The first three goals – to cut in half the carbon intensity of the electricity generated, to develop and build enough renewable energy capacity to treble renewable output and help accommodate 10 million electric vehicles on Britain's electricity networks – are in direct response to the low-carbon challenge. SSE has also committed for the long-term to the principles of Fair Tax and a real Living Wage. These goals represent the most material contribution SSE can make to sustainable development and also represent an exciting strategy for business growth in support of decent work and economic growth.

SSE's core, low-carbon businesses will drive its strategic delivery. The low-carbon renewables and networks businesses are supported by thermal generation plant that provides vital flexibility complementing the variability of renewables output during the low-carbon transition, and retail operations that provide key energy services for customers and secure valuable routes to market for SSE's generation fleet.

SSE's businesses are:

1. Wholesale: A leading generator of electricity from renewable sources in the UK and Ireland, with ownership and operation of flexible thermal power. It also owns and operates gas storage facilities in the UK, operates an energy portfolio management division and invests in gas production in the North Sea and west of Shetland.
2. Networks: Delivers energy safely to homes and businesses in GB through its networks Scottish Hydro Electric Transmission plc which owns the high voltage network in the north of Scotland; Scottish Hydro Electric Power Distribution plc and Southern Electric Power Distribution which own the low voltage networks in north of Scotland and central southern England. These businesses are regionally defined and subject to regulatory controls set by Ofgem.
3. Retail: SSE supplies energy and provides infrastructure services to business and public sector customers through its Business Energy and Enterprise divisions. It also supplies energy and related services (including green energy) to household customers on the island of Ireland through SSE Airtricity.

Retail (held for disposal): SSE Supplies energy and other services to the GB household market through SSE Energy Services. In December 2018 the decision was taken not to proceed with a proposal to create a new independent company through the merger of SSE Energy Services with another energy supplier. SSE believes the best future for SSE Energy Services lies outside the SSE Group and it has a management team in place to secure a listing or a new, alternative ownership.

CDP Water Report:

This is SSE's fourth year reporting on water-related issues. SSE has focused on the material water-related activities which take place in its wholesale business. SSE's hydro operations include 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. SSE's thermal coal, gas, oil and multifuel operations which use water in a variety of operations such as for cooling and as process water.

## W-EU0.1a

**(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

## W-EU0.1b

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

	Nameplate capacity (MW)	% of total nameplate capacity	Gross generation (MWh)
Coal – hard	1,510	14.3%	579
Lignite	0	0.0%	0
Oil	985	9.4%	170
Gas	4,236	40.2%	20,013
Biomass	18	0.2%	68
Waste (non-biomass)	34	0.3%	294
Nuclear	0	0.0%	0
Geothermal	0	0.0%	0
Hydroelectric	1,450	13.8%	3,543
Wind	2,299	21.8%	6,168
Solar	0	0.0%	0
Other renewable	0	0.0%	0
Other non-renewable	0	0.0%	0
Total	10,532	100	30,835

## 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, 2018	March 31, 2019

## W0.3

**(W0.3) Select the countries/regions for which you will be supplying data.**

- 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	This report excludes any joint ventures in which SSE does not have operational control. Scotia Gas Networks (described below) is one of the largest business units excluded from the inventory. For a full list of SSE's subsidiary undertakings, partnerships, joint ventures and associates, please refer to pages 210 to 216 of SSE's Annual Report 2018. <ul style="list-style-type: none"> <li>• Scotia Gas Networks (SGN): SGN is a Joint Venture and SSE does not have operational control over these operations. Covering Scotland and the south of England, SGN is the gas network company distributing natural and green gas to 5.9 million homes and businesses through a network of 74,000km of mains and services. SSE has 33% shareholding.</li> </ul>
Supply chain	This report excludes the water use of SSE's suppliers.
Gas production activities	SSE E&P UK Ltd: SSE E&P UK Ltd is the way through which SSE has equity shareholding in gas producing assets but SSE does not operate these assets so this is excluded from the disclosure. Although this company is wholly owned by SSE, its stake in any gas producing assets is significantly below 50%.

## 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	SSE operates 1,450MW of hydro electricity generation capacity (including pumped storage). This includes 91 hydro dams in the north of Scotland covering a water catchment area of 5,382 sq. miles. That means sufficient volumes of water from freshwater sources are very important for SSE's business, most obviously as a fuel source for these hydro generation operations. At hydro generation sites water is taken from rivers and lochs and returned to the water environment with its quality unaffected after being run through the turbines to generate electricity.  Furthermore, a sufficient volume of good quality water is also important for SSE's thermal operations. SSE's thermal operations involve coal, gas, oil and multifuel. Good quality freshwater is required for operational purposes such as to cool generation plants and as process water for a variety of operations.
Sufficient amounts of recycled, brackish and/or produced water available for use	Vital	Not very important	SSE's thermal generation plant relies on cooling water for its operations from estuaries or the open sea (i.e. brackish water).

## W1.2

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

	% of sites/facilities/operations	Please explain
Water withdrawals – total volumes	76-99	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 both operational and regulatory purposes. Thermal power stations monitor, measure and report water aspects to the appropriate regulators against specific environmental permits and their requirements.
Water withdrawals – volumes from water stressed areas	76-99	Hydro and thermal generation activities contribute over 99% of SSE's total water withdrawals. SSE does not withdraw any water for these activities from water stressed areas. SSE's thermal power stations monitor, measure and report water aspects to the appropriate regulators in accordance with environmental permits and their requirements. None of SSE's thermal power stations in England are located in areas of water stress as defined by the Environment Agency's 'Restoring Sustainable Abstraction Programme'. There is no classification by Scottish Environmental Protection Agency (SEPA) for water stress as there is in England and Wales. For water bodies affected by SSE hydro operations these are classified by SEPA under the European Union Water Framework Directive regulations for quality, ecology and hydrology, as is the case for all waters in Scotland.
Water withdrawals – volumes by source	76-99	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.
Water withdrawals quality	76-99	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.
Water discharges – total volumes	76-99	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.
Water discharges – volumes by destination	76-99	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.
Water discharges – volumes by treatment method	76-99	Hydro and thermal generation activities contribute over 99% of SSE's total water discharges in terms of volumes by treatment method. This data is gathered for both regulatory and operational purposes.
Water discharge quality – by standard effluent parameters	76-99	Hydro and thermal generation activities contribute over 99% of SSE's total water discharges. This data is gathered for both regulatory and operational purposes.
Water discharge quality – temperature	76-99	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.
Water consumption – total volume	76-99	The water that is consumed by SSE is used 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 85% 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.
Water recycled/reused	1-25	Hydro and thermal generation activities contribute over 99% of SSE's total water recycled/ reused. This data is gathered for regulatory and operational purposes (for example for optimising efficiencies in thermal generation) as it is business critical.
The provision of fully-functioning, safely managed WASH services to all workers	76-99	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.

## W-EU1.2a

**(W-EU1.2a) For your hydroelectric 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%	SSE's heritage has its foundations in the large-scale development of hydro-electricity in the north of Scotland in the 1940s and 1950s. 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.
Sediment loading	100%	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.
Other, please specify	100%	SSE's hydro power stations operate in the north of Scotland in fresh water catchments. Salmon and sea trout return to breed in the rivers every year. To safeguard the fish stocks SSE has fish ladders and fish screens to help the fish return upstream to breeding grounds. SSE closely monitors the operation of these fish passes and fish screens.

## W1.2b

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

	Volume (megaliters/year)	Comparison with previous reporting year	Please explain
Total withdrawals	25,131,044	Higher	<p>In 2018/19 SSE abstracted 25.1 billion m3 of water compared to 24.0 billion m3 in 2017/18. The rise in abstraction volumes was due to an increase in generation output from SSE's hydro generation assets. Over 96% of the total water abstracted by SSE in 2018/19 was used in its hydro generation operations to run through turbines to create electricity, and therefore was returned to the environment almost immediately. SSE's hydro generation assets output increased by 3% from 3,430GWh to 3,543GWh between 2017/18 and 2018/19. Total water withdrawals increased by 4% in the same period. Water withdrawals by SSE's hydro generation plant increased by 3% in the same period.</p> <p>4% of total water abstracted by SSE in 2018/19 was used in its thermal generation operations. For thermal generation plant 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. Between 2017/18 and 2018/19, there was a 12% decrease in SSE's total thermal generation output in GB. However, in this same period, the water abstracted by SSE's thermal generation plant increased by 7%. This was because SSE used a different set of thermal power stations to generate electricity in 2018/19 than in the previous year. These power stations, unlike those used the year before, generate electricity with cooling systems that have only one cycle. In other plant, the cycle can repeat using the same water. This resulted in more water being abstracted and ultimately returned by the thermal generation fleet between the two periods.</p>
Total discharges	25,126,135	Higher	<p>In 2018/19 SSE discharged 25.1 billion m3 of water compared to 24.0 billion m3 in 2017/18. Over 96% of the total water abstracted by SSE in 2018/19 was used in its hydro generation operations, and therefore was returned to the environment almost immediately, meaning the discharge figures provided here are very similar to the withdrawal figures. The rise in discharge volumes was due to an increase in generation output from SSE's hydro generation assets. SSE's hydro generation assets output increased by 3% from 3,430GWh to 3,543GWh between 2017/18 and 2018/19. Total water withdrawals and associated discharges increased by 4% in the same period.</p> <p>4% of total water abstracted by SSE in 2018/19 was used in its thermal generation operations. For thermal generation plant 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. Between 2017/18 and 2018/19, there was a 12% decrease in SSE's total thermal generation output in GB. However, in this same period, the water discharged by SSE's thermal generation plant increased by 7%. This was because SSE used a different set of thermal power stations to generate electricity in 2018/19 than in the previous year. These power stations, unlike those used the year before, generate electricity with cooling systems that have only one cycle. In other plant, the cycle can repeat using the same water. This resulted in more water being abstracted and ultimately returned by the thermal generation fleet between the two periods.</p>



Total consumption	5,605	Lower	The water that is consumed by SSE is used as process water in SSE's thermal power stations and in SSE's non-operational buildings for amenities. In 2018/19, SSE consumed 5.6 million m <sup>3</sup> , accounting for 0.02% of the total water withdrawals in this period. This compares to consumption of 7.6 million m <sup>3</sup> in 2017/18, accounting for 0.03% of the total water withdrawals in that period. The water that is consumed by SSE is used as process water in SSE's thermal power stations and in SSE's non-operational buildings for amenities. SSE has water efficiency and saving programmes in its generation operations and non-operational offices, data centres and depots. The decrease in water consumption was primarily a result of the shift in output from stations with cooling towers, where water is recycled for cooling purposes, to generators that use water in a system that has only one cycle (called a 'once through cooling water system'). This resulted in SSE's total water consumption decreasing by over 35% in 2018/19 compared to the previous year.
-------------------	-------	-------	--

## W1.2d

(W1.2d) Provide the proportion of your total withdrawals sourced from water stressed areas.

	% withdrawn from stressed areas	Comparison with previous reporting year	Identification tool	Please explain
Row 1	0	About the same	Other, please specify Regulators - EA and SEPA	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. 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. None of SSE's thermal power stations have been identified as being located in areas of water stress under the Environment Agency's 'Restoring Sustainable Abstraction Programme'. 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 promote a stronger catchment focus and will produce updated abstraction licensing strategies that detail the solutions and set out approaches to environmental issues. 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 for quality, ecology and hydrology. SSE recently reduced the water abstraction on the River Garry and its tributaries to meet the Water Framework Directive requirements. There are a very small number of minor water bodies under potential consideration under the Water Framework Directive which may mean SSE has to change its operations to meet new regulatory requirements in the future.

## W1.2h

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

	Relevance	Volume (megaliters/year)	Comparison with previous reporting year	Please explain
Fresh surface water, including rainwater, water from wetlands, rivers, and lakes	Relevant	24,250,157	Higher	Withdrawals from fresh water sources is undertaken by SSE's hydro generation assets, and the majority of its thermal assets (excluding Slough Heat and Power biomass, Keadby, Peterhead, Great Island and Tarbet gas-fired power stations and Fiddlers Ferry coal-fired power stations). In 2018/19 SSE's withdrawals from fresh water sources increased by 3% compared to the previous year. Over 96% of the water abstracted was used in SSE's hydro generation operations and therefore was returned to the environment almost immediately. The rise in abstraction volumes was due to an increase in generation output from SSE's hydro generation assets by 3% between the two periods.
Brackish surface water/Seawater	Relevant	878,961	Much higher	The water withdrawn from brackish surface water/ seawater is for SSE's Keadby, Peterhead, Great Island and Tarbert gas-fired and Fiddlers Ferry coal-fired power stations. Output from SSE's thermal generation power stations decreased by 12% between 2017/18 and 2018/19. However, in this same period, the water abstracted by SSE's thermal generation plant increased by 7%. This was because SSE increased its output from power stations that use once through cooling systems that abstract from brackish surface water/ seawater sources. As a result, brackish surface water/ seawater abstraction volumes increased by around 65% between the two periods.
Groundwater – renewable	Relevant	1,925	Higher	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. Between 2017/18

				and 2018/19 there was a decrease in the water withdrawn from groundwater (renewable) sources for Slough Heat and Power biomass power station reflecting the reduction in electricity generation output.
Groundwater – non-renewable	Not relevant			
Produced/Entrained water	Not relevant			
Third party sources	Relevant	95	Higher	Water used in amenities increased by 5% between 2017/18 and 2018/19 reflecting the increase in the number of properties that have water meters (from 18 sites to 21 sites which represents over 75% of the people employed at SSE). SSE's water saving initiatives continued to be implemented and this kept water consumption at an average 16.9 litre/person/day.

## W1.2i

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

	Relevance	Volume (megaliters/year)	Comparison with previous reporting year	Please explain
Fresh surface water	Relevant	24,248,691	Higher	Water discharges to fresh water sources is undertaken by SSE's hydro generation assets, and the majority of its thermal assets (excluding Keadby, Peterhead, Great Island, Tarbert and Fiddlers Ferry power stations). Over 96% of SSE's total water returned to the environment is by its hydro generation assets. Water discharged to fresh surface water increased by 3% between 2017/18 and 2018/19. The rise in discharge volumes to fresh surface water was due to an increase in generation output from SSE's hydro generation assets. Between 2017/18 and 2018/19, there was a 3% increase in SSE's hydro generation output.
Brackish surface water/seawater	Relevant	875,840	Much higher	The water discharged to brackish surface water/ seawater is done by SSE's Keadby, Peterhead, Great Island and Tarbert gas-fired and Fiddlers Ferry coal-fired power stations. Output from SSE's thermal generation power stations decreased by 12% between 2017/18 and 2018/19. However, in the same period water discharged to brackish sources increased by around 65%. The rise in discharge volumes to brackish sources was due to an increase in the output from power stations that use once through cooling systems located at sites that abstract and discharge water from/ to brackish surface water/ seawater. For SSE's thermal generation activities water is used for cooling and returned directly back to the environment. Where required water is treated onsite before returning it to source in accordance with specific environmental permits.
Groundwater	Not relevant			
Third-party destinations	Relevant	1,699	Higher	Water discharged to third-party destinations is from SSE's non-operational buildings and Slough Heat and Power biomass power station. For SSE's thermal generation activities some process water and cooling waters are discharged to an onsite wastewater treatment plant before discharged back to source. As a result, SSE includes these water discharges in its fresh surface water volume reported. Water discharged to third-party destination increased by 6% between 2017/18 and 2018/19. The rise in discharge volumes to third party destinations was mainly a result of an increase in the water used in amenities (which increased by 5% between 2017/18 and 2018/19) reflecting the increase in the number of properties that have water meters (from 18 sites to 21 sites which represents over 75% of the people employed at SSE). SSE's water saving initiatives continued to be implemented and this kept water consumption at an average 16.9 litre/person/day.

## W1.2j

(W1.2j) What proportion of your total water use do you recycle or reuse?

	% recycled and reused	Comparison with previous reporting year	Please explain
Row 1	76-99%	About the same	The majority of water abstracted and then discharged is associated with SSE's hydro generation business. SSE reuses large amounts of water as part of the 'cascade' schemes (which are in place for the majority of SSE's larger hydro schemes such as Conon, Ness, Tummel and Beaully) where the water is used multiple times to generate electricity at different power stations as it flows downstream. In thermal generation SSE looks to optimise water use on its plants to improve efficiency.

## 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)	Numerator: water aspect	Denominator: unit of production	Comparison with previous reporting year	Please explain
0.04	Total water withdrawals	MWh	Higher	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. Between 2017/18 and 2018/19 output from thermal power stations decreased and the amount of water abstracted increased. This was because SSE increased its output from power stations that use once through cooling systems. This resulted in more water being abstracted and ultimately returned to the environment by the thermal generation fleet between the two periods. As a result the water withdrawn intensity increased from 0.035 megalitres/MWh to 0.042 megalitres/MWh during the two periods (water withdrawn intensity is calculated using total water abstracted - thermal (megalitres) against total thermal generation output (MWh)).
0.04	Other, please specify Total water returned	MWh	Higher	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. Between 2017/18 and 2018/19 output from thermal power stations decreased and the amount of water returned to the environment increased. This was because SSE increased its output from power stations that use once through cooling systems. This resulted in more water being abstracted and ultimately returned to the environment by the thermal generation fleet between the two periods. As a result the water returned intensity increased from 0.035 megalitres/MWh to 0.042 megalitres/MWh during the two periods (total water returned intensity is calculated using total water returned - thermal (megalitres) against total thermal generation output (MWh)).
0.0002 - CDP database only allows 2 decimal places	Total water consumption	MWh	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. 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>Between 2017/18 and 2018/19 SSE's total thermal generation output in Great Britain decreased by 12%. Total water consumption reduced by 48% and the total water consumed intensity ratio reduced by 32%. The decrease in the total water intensity ratio was primarily a result of a switch from using power stations with cooling towers to ones that use once through cooling water systems.</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 you engage with your value chain on water-related issues?

No, we do not engage on water with our value chain

### W1.4d

(W1.4d) Why do you not engage with any stages of your value chain on water-related issues and what are your plans?



	Primary reason	Please explain
Row 1	Important but not an immediate business priority	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 environment, social and governance issues that are relevant and influence the business and its operations. Climate change, safety and local economic impact have been 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.

## 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?**

No

## W3. Procedures

### W-EU3.1

**(W-EU3.1) How does your organization identify and classify potential water pollutants associated with your business activities in the electric utilities sector that could have a detrimental impact on water ecosystems or human health?**

For SSE's hydro generation operations, sufficient amounts of water from freshwater sources is very important for the business as a fuel source for hydro generation operations. At hydro generation sites water is taken from rivers and lochs and returned to the water environment after being run through the turbines to generate electricity. SSE monitors, measures and reports on all compensation and freshet flows to regulators as well fish passes and fish screens. SSE's hydro generation licences also have a condition to avoid any release of lubricating or other oils when the water is returned to the environment. In SSE's thermal power stations water is primarily used for cooling with some water used as process water. All SSE's thermal installations have environmental permits with associated environmental impact assessments. Each site monitors, measures and reports water aspects to the Regulators in accordance with specific environmental permits. SSE also monitors water intake to understand and monitor quality of the water entering its power stations.

### W-EU3.1a

**(W-EU3.1a) Describe how your organization minimizes the adverse impacts of potential water pollutants associated with your activities in the electric utilities sector on water ecosystems or human health.**

Potential water pollutant	Description of water pollutant and potential impacts	Management procedures	Please explain
Other, please specify Thermal discharges	Thermal cooling-water discharges have been shown to have minimal detrimental impact to the water system. SSE also monitors water intake to understand and monitor quality of water entering its power stations.	Compliance with effluent quality standards Measures to prevent spillage, leaching, and leakages Community/stakeholder engagement	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 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.

Emergency preparedness

### W3.3

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

Yes, water-related risks are assessed

### W3.3a

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

##### Direct operations

##### Coverage

Full

##### Risk assessment procedure

Water risks are assessed in an environmental risk assessment

##### Frequency of assessment

Six-monthly or more frequently

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

>6 years

##### Type of tools and methods used

International methodologies

##### Tools and methods used

Other, please specify

ISO14001 Environmental Management System

##### Comment

The Chief Executive has overall lead responsibility for environment issues (including water-related aspects), including at Board level. The Board is advised on matters of safety, health and environment (SHE) by the Safety, Health and Environment Advisory Committee (SHEAC). The SHEAC has an overarching role to support SSE's commitment to be a sustainable company that makes a positive contribution to the communities and societies of which it is part. In fulfilling this role, the SHEAC reviews and oversees the implementation of key sustainability-related Group policies including, Safety and Health and Environment and Climate Change, and Sustainability policies. The SHEAC is supported by the Group Safety, Health and Environment Committee in relation to environment matters (including water related aspects).

To ensure effective environmental management, SSE implements an environmental management system (EMS) across key areas of its business that interact with the environment. An EMS is designed to ensure that appropriate policies, processes and outputs are in place to ensure a business recognises and effectively manages the most significant environmental issues and impacts it faces. In August 2018, SSE's renewables and thermal generation businesses, SSE Enterprise Contracting and SSE's gas storage business successfully completed the transition to the most recent version of the international EMS Standard, ISO14001:2015.

##### Supply chain

##### Coverage

Full

##### Risk assessment procedure

Water risks are assessed in an environmental risk assessment

##### Frequency of assessment

Six-monthly or more frequently

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

>6 years

**Type of tools and methods used**

International methodologies

**Tools and methods used**

Other, please specify

ISO14001:2015 Environment Management System

**Comment**

SSE has identified its material issues relating to its key business operations. SSE works with its suppliers 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 impact. Climate change is the most material environment risk. SSE remains vigilant to the emergence of higher risks relating to water.

**Other stages of the value chain**

**Coverage**

Full

**Risk assessment procedure**

Water risks are assessed in an environmental risk assessment

**Frequency of assessment**

Six-monthly or more frequently

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

>6 years

**Type of tools and methods used**

International methodologies

**Tools and methods used**

Other, please specify

ISO14001:2015 Environmental Management System

**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**

**(W3.3b) Which of the following contextual issues are considered in your organization's water-related risk assessments?**

	Relevance & inclusion	Please explain
Water availability at a basin/catchment level	Relevant, always included	Water is used to power turbines to generate electricity at SSE's hydro power stations. Water availability is relevant as the amount of water available impacts the hydro generation efficiency and output. Hydro generation is managed according to the volumes of water available. SSE takes a 10 year rolling average of runoff for the operation of the hydro assets for every year. It then overlays station outages and maintenance that may affect the running of the hydro assets. This rolling average takes some

		account of the past trends in climate and weather in order to enable SSE to predict future generation in its hydro assets. Water availability is therefore assessed in the immediate term (daily through 24/7 monitoring systems), short term (for the year ahead), medium term (5 years ahead) and long term (over 5 years into the future) for all the hydro power station operations at a local, regional and national level. These risk assessments then inform how SSE's hydro generation plant is run and adapted to the resources available. Water is also used to cool generation plants; as process water for a variety of operations; and for amenities in SSE's offices and buildings. At thermal generation plants most water is used for cooling.
Water quality at a basin/catchment level	Relevant, always included	Water is used for generation at SSE's hydro power stations. Water is also used to cool generation plants; as process water for a variety of operations; and for amenities in SSE's offices and buildings. At thermal generation plants most water is used for cooling. Water quality is constantly monitored and treated if required to meet operational quality requirements.
Stakeholder conflicts concerning water resources at a basin/catchment level	Relevant, always included	Water is used for energy generation, cooling, process water and for amenities in offices and buildings. The use of water by stakeholders and the use of water for SSE's operations can in some instances create water resource issues at a local level. As part of SSE's risk assessment process, water risks that arise from the use of water resources by other stakeholders are integrated into operational procedures and processes, impacts are measured, monitored and reported to stakeholders. SSE also consults and engages with relevant stakeholders to manage and mitigate the impact of its operations on water resources and other stakeholders use of these resources (such as Fisheries Boards and recreational users in relation to its hydro operations). An example of how SSE is putting this approach into practice – River Garry in Perthshire – where under the river basin management plan SSE has begun to restore flow to a river which has been dry since the 1950s. This will impact the hydro generation output at this site however it will bring about environmental improvements to the river biodiversity which is seen to be a benefit to all stakeholders. The change in the operation of this hydro generation facility was a joint agreement between SSE, SEPA and the District Salmon Fishery Board to improve flows on the River Garry. There are further sites that SSE is investigating introducing similar environmental improvements, however, these will not be on the scale of the change that will take place at the River Garry catchment.
Implications of water on your key commodities/raw materials	Relevant, always included	Production of electricity is SSE's core product and the availability of water is essential for SSE's thermal and hydro electricity generation activities.  For SSE's hydro-generation activities, the amount of water available impacts the hydro generation efficiency. Hydro generation is managed according to the volume of water available. For SSE, the risk is assessed through understanding trends in climate and weather in the past and predicting this over different time periods in order to run generation in the future. Water availability is therefore assessed in the immediate term (daily through 24/7 monitoring systems), short term (for the year ahead), medium term (5 years ahead) and long term (over 5 years into the future) for all our hydro power station operations at a local, regional and national level. These risk assessments then inform how SSE's hydro generation plant is run and adapted to the resources available. SSE also conducts scenario analysis for its generation plant to ensure that future changes in key resources are factored into investment and future operating decisions.
Water-related regulatory frameworks	Relevant, always included	Water is used for energy generation, cooling, process water and for amenities in offices and buildings. Regulations on water impact all areas of the business, for example compensation flow regulations (regulated volumes of water that must remain in the river) impact the way SSE runs its hydro generation. Water abstraction charges impact our hydro and thermal generation activities as there are water charges in place based on the volumes of water consented for use.  In addition, SSE's generation assets will be subject to changes in national regulations that implement the requirements of the EU Water Framework Directive. For SSE's hydro generation operations this will impact future compensation levels and how SSE runs its generation plant. For SSE's thermal generation plant this may impact the environmental quality standards and potentially the water discharges from sites.  As part of SSE's risk assessment process, water risks from regulatory frameworks and tariffs are identified and assessed, procedures and processes implemented to manage the impacts and measurement, monitoring and reporting systems in place to report compliance to relevant authorities. SSE has compliance and regulatory teams to manage and mitigate the impact of regulatory frameworks to its business activities. SSE also consults and engages regularly with relevant authorities to manage the impact of water regulation (for example Scottish Environmental Protection Agency (SEPA), Environment Agency for England (EA), and Environment Protection Agency in Ireland (EPA), DEFRA and BEIS (through industry representative groups).
Status of ecosystems and habitats	Relevant, always included	Water is used for energy generation, cooling, process water and for amenities in offices and buildings. The status of ecosystems and habitats is constantly reviewed through SSE's risk assessment approach. To mitigate the risk SSE has processes and procedures in place to monitor water quantity and quality to ensure compliance with any consents, and reports regularly to stakeholders (including regulators) on its water impacts. SSE also engages and consults with stakeholders on water-related issues and the impact that its activities have on the status of ecosystems and habitats. SSE monitors ecology and commissions research with Universities and academics to better understand the ecology and biodiversity of the rivers that it operates in. For example, SSE worked with the University of Highlands and Islands to conduct

		research using genetic analysis and fish demographic data to produce sustainable conservation limits. Another example, is how salmon smolts exit through large lochs/ lakes both natural and reservoirs with SCENE (a collaboration of Glasgow University, Northern Ireland, University of Highlands and Islands).
Access to fully-functioning, safely managed WASH services for all employees	Relevant, always included	Water is used for amenities in offices and buildings and operational sites. Current risk assessments of availability and quality of water are included in property risk management plans. SSE monitors water consumption and has activities in place to reduce water consumption across its property portfolio.
Other contextual issues, please specify	Relevant, always included	SSE has assessed the impact of different stakeholders and has not identified any other categories that may have a significant impact on its operations in relation to water risk.

### W3.3c

#### (W3.3c) Which of the following stakeholders are considered in your organization's water-related risk assessments?

	Relevance & inclusion	Please explain
Customers	Relevant, sometimes included	SSE has regular contact with its customers (this can be retail customers, households connected to electricity networks and businesses) in relation to winter readiness and the impact of potential flooding on its networks, generation and retail business activities. SSE contacts these customers using web communications; TV, radio and newspaper campaigns; and direct customer contact through our customer call centres. SSE has emergency response plans, business continuity plans and a series of communication for different customers to ensure they understand how to respond to the impact of flooding on energy supply.
Employees	Relevant, sometimes included	SSE regularly reviews the readiness of its employees to respond to emergencies, get to sites to maintain operations and other business continuity issues. This may be a result of flooding in communities where its employees live or flooding at SSE's sites. This is to ensure business continuity in the event of flooding or other emergency situations.
Investors	Relevant, sometimes included	SSE reports to investors on water risks through CDP (this survey), its annual report and accounts and its sustainability report. This is the third year SSE has reported to CDP on water and this is a result of the increased importance of water to its investment community. In 2014/15 SSE extended its annual report and sustainability report to include water data and in 2015/16, 2016/17, 2017/18 and 2018/19 its water data was assured by PwC in accordance with the ISAE3000 (revised) and ISAE3410 standards.
Local communities	Relevant, sometimes included	SSE consults and engages with local communities and community groups/ organisations on the impact of its operations to their recreational and business activities. For instance the impact of its hydro operations on fisheries and fishing, canoeing and other recreational users. This is to ensure that SSE can operate in the local communities in which it has a presence.
NGOs	Relevant, sometimes included	SSE regularly consults with key stakeholders on water related issues and the main groups of relevant agencies are the other categories outlined in this table.
Other water users at a basin/catchment level	Relevant, sometimes included	SSE's risk assessments have identified the key water users at local levels and the impact of these on its operations, the key stakeholder groups are covered by the other categories in this table.
Regulators	Relevant, sometimes included	SSE has regular contact with regulators, Environment Agency, SEPA and Environment Protection Agency (Ireland) on water issues including consents, compensation flows and river basin/ ecosystem/ habitat management. SSE also maintains a strong presence at meetings that involve regulators and policy makers in relation to water issues for example SSE is engaging in workstreams associated with the recently published water abstraction plan for England and SSE meets regularly with SEPA to discuss the impact of water framework directive on its hydro operations in the period to 2027.
River basin management authorities	Relevant, sometimes included	SSE has regular discussions and responds to consultations with key river basin management authorities (including regulators and government) through industry working groups on water abstraction reform, water framework changes and the different needs of different water users. This is to ensure that SSE's views and knowledge can be integrated into regulatory plans and the impact to its operations is understood by regulatory authorities.
Statutory special interest groups at a local level	Relevant, sometimes included	SSE has regular contact with statutory special interest groups in relation to impact of current operations and future activities on water resources (quality and quantity) and river basin/ ecosystem/ habitat management planning. SSE does this through formal planning consultation processes as well as through regular meetings/ discussions and forums that exist as part of its ongoing stakeholder consultation and engagement exercises and through direct liaison meetings.
Suppliers	Relevant, sometimes included	SSE assesses the impact of water resources on the ability of its suppliers to provide us with raw materials. For example, at its thermal generation plant, SSE understands the impact of flooding to its suppliers and its potential to impact the delivery of coal to its business.



Water utilities at a local level	Relevant, sometimes included	SSE has regular contact with water utilities in relation to impact of its current operations and future activities on water resources (quality and quantity) and river basin/ ecosystem/ habitat management planning. SSE does this through formal planning consultation processes as well as through regular meetings/ discussions and forums that exist as part of its ongoing stakeholder consultation and engagement exercises.
Other stakeholder, please specify	Not relevant, included	SSE has assessed the impact of different stakeholders in relation to water risk and has not identified any other categories that have a significant impact on its operations.

### W3.3d

#### (W3.3d) 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.

SSE identifies and evaluates risk at both Group and divisional (including assets) level by considering, controlling and monitoring the impact of risks against the achievement of SSE's strategic objectives (set by the Board). The Group Executive Committee and its sub-committees have responsibility for overseeing SSE's Principal Risks. The Group Risk Management and Strategic Frameworks have been designed to ensure (amongst other things) that SSE is in a position to address the issue of water, whether as a risk or as an opportunity. The risk assessment timeframe is greater than 10 years because in terms of water risk there are regulatory, physical and asset risks that can occur over the short (next 12 months), medium (within 5 years) and long term (6 years and beyond). Risk assessments are completed six monthly or more frequently to ensure risks are still relevant/ mitigated and managed. Water risks are relevant to all geographies and all businesses. E.g. water quality/ quantity issues could present challenges in operations of hydro and thermal generation assets; equally, flooding could cause disruption to operations across networks, generation and retail. For SSE, the challenge of water (regulatory, physical and reputational) does not have a significant impact (in terms of likelihood and impact) to change or impact the businesses strategic objectives. 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 over 300 risk assessments are completed to understand the impact of flooding to business operations (i.e substations); future legislation (medium term) could impact hydro assets, SSE has compliance and regulatory teams to mitigate/ 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/ weather.

## 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, in direct operations

### W4.1a

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

Risk management at SSE involves identifying and protecting the business from outcomes that could threaten the achievement of the business objectives or the core values of the company. The Board is responsible for the overall system of risk management and internal control. It 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 oversee 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. As part of ongoing assessment key risk indicators are reported to the Board and these provide insight into the significant factors which are likely to influence SSE's exposure to those risks. SSE's business divisions have different risk profiles. For example, Networks businesses are economically-regulated and characterised as stable; whereas, the Wholesale businesses are market-based and so exposed to energy market and commodity risk. 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. These issues could also threaten SSE's core values of Safety, Service, Efficiency, Sustainability, Excellence and Teamwork.

### 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 14% of SSE's generation capacity and 12% of the Group's electricity generation output in 2018/19. 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. 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 impact on your business, and what is the potential business impact associated with those facilities?**

### Country/Region

United Kingdom of Great Britain and Northern Ireland

### River basin

Other, please specify  
River catchments in Scotland

### Number of facilities exposed to water risk

12

### % company-wide facilities this represents

1-25

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

1-25

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

Less than 1%

### Comment

SSE's hydro generation facilities represent 14% of SSE's generation capacity and 12% of the Group's electricity generation output in 2018/19. The hydro generation plant is located in regions of high rainfall – 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. In the past few years, SSE has responded to changes in climate patterns that have changed temperatures which in turn have changed rainfall levels. 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. The number of sites that have been impacted over the past few years has decreased as SSE has worked with its regulator to carry out surveys to better understand the water-related impacts.

## 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/Region

United Kingdom of Great Britain and Northern Ireland

**River basin**

Other, please specify  
River catchments Scotland

**Type of risk**

Physical

**Primary risk driver**

Seasonal supply variability/inter annual variability

**Primary potential impact**

Other, please specify  
Reduction in generation output

**Company-specific description**

SSE's generation assets rely on rainwater to operate, in particular SSE's hydro assets use 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. For example, 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 renewables (including hydro and wind generation assets) output and associated earnings.

**Timeframe**

More than 6 years

**Magnitude of potential impact**

Medium-low

**Likelihood**

Likely

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

Yes, a single figure estimate

**Potential financial impact figure (currency)**

£100,000,000

**Explanation of financial impact**

Levels of rainfall can fluctuate from year to year. Climate change may exacerbate these fluctuations. Fluctuations can be both positive & negative for SSE. To illustrate this, 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 combination of both these weather impacts will result in reduced renewable generation output and associated earnings. This weather risk is a perennial feature of risk for SSE as the largest generator of renewable electricity in the UK and Ireland.

Weather patterns affect renewable output and in any one year the potential adverse financial impact on renewable earnings is estimated to be around £100m.

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

**Cost of response**

Zero

**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 and therefore the cost of response is zero. All water risks are managed as part of the overall business risk management system and response strategies are integrated into core business activities. Examples of this include an in-house meteorology team that responds to weather related events in order to plan energy demand and energy supply.

**Country/Region**

United Kingdom of Great Britain and Northern Ireland

**River basin**

Other, please specify  
River catchments Scotland

**Type of risk**

Regulatory

**Primary risk driver**

Regulation of discharge quality/volumes

**Primary potential impact**

Reduction or disruption in production capacity

**Company-specific description**

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. This regulation puts limits on the amount of output through the use of compensation flows. From 2016/17 and up to 2027 output across SSE's hydro assets could potentially be reduced to meet legal requirements by up to 1%. SEPA has capped the impact to hydro activities by a maximum of 3% across all Scottish operators at 100GWh of output.

For example at the River Garry in Perthshire a change to the operating licence in 2017/18 has reduced generation from hydro power stations along the river by 20 to 30 GWh per annum. As a result, SSE has reduced the water abstraction on the River Garry and its tributaries to meet the Water Framework Directive requirements. There are a very small number of minor water bodies under potential consideration under the Water Framework Directive which may mean SSE has to change its operations to meet new regulatory requirements in the future.

**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, a single figure is not provided

**Potential financial impact figure (currency)**

LEAVE BLANK

**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 20-30 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

Zero

#### 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 and therefore are presented as zero. 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/Region

United Kingdom of Great Britain and Northern Ireland

#### River basin

Other, please specify

River catchments Scotland/ south England

#### Type of risk

Physical

#### Primary risk driver

Flooding

#### Primary potential impact

Reduced revenues

#### Company-specific description

**Increased severity of extreme weather events such as storms, floods and heat waves bring prolonged and extreme temperatures, wind or rain. This may damage the network assets resulting in the loss of incentive revenue and increased maintenance for SSE's Distribution Networks business (SSEN). Timeframe**

Current up to 1 year



**Magnitude of potential impact**

Low

**Likelihood**

Very likely

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

Yes, a single figure estimate

**Potential financial impact figure (currency)**

£145,000,000

**Explanation of financial impact**

To estimate a potential financial impact, it is assumed that the next distribution price control (2023 to 2028) will be of similar value and size as the current RIIO-ED1 distribution price control (2015 to 2023). It is also assumed that for three years fault costs will increase by 10% and for two of these years we will see a decrease in annual incentive revenue by an additional 10%. It is also forecast that another two years of extreme weather will cause an additional 20% increase in fault related costs and a similar decrease in incentive income. This is consistent with the number of faults and current RIIO-ED1 incentive and penalty methodology.

The estimated cost of faults and loss of incentive income over the next 10 years may result in a potential reduction of earnings of up to £145m cumulatively.

**Primary response to risk**

Develop flood emergency plans

**Description of response**

To mitigate these impacts 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.

**Cost of response**

Zero

**Explanation of cost of response**

All costs associated with SSE's response to this risk are included in operational and capital investment plans and budgets and therefore are presented as zero, including:

- Planned preventative maintenance
- Contingency and emergency response
- Customer and stakeholder communication plans
- Investment programmes to mitigate against flooding

**W4.2a**

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

Change this to tick the – NO box and say that this is not material.

Primary reason	Please explain
----------------	----------------

Row 1	Important but not an immediate business priority	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 environment, social and governance issues that are relevant and influence the business and its operations. Climate change, safety and local economic impact have been 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.
-------	--	--

## W4.3

### (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

### (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

Decarbonisation of the electricity system provides the opportunity to increase output and earnings from flexible and renewable hydro assets. As the energy system decarbonises, an increasing volume of wind energy is coming onto the GB system. 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.

SSE is investing in a diversified generation portfolio of renewable and flexible generation assets (including hydro generation assets). SSE has 400MW of run-of-river hydro, 750MW of flexible hydro alongside 300MW of pumped storage. In 2017/18 and 2018/19, and despite challenging weather conditions SSE's hydro fleet delivered increased value from their increased flexibility, enabled by enhancements to SSE's commercial management of these assets.

#### Estimated timeframe for realization

1 to 3 years

#### Magnitude of potential financial impact

Medium

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

Yes, single figure

#### Potential financial impact figure (currency)

£400,000,000

#### Explanation of financial impact

SSE has 1,450MW of existing hydro capacity (inc pumped storage) and has planning consent for an additional 600MW of pumped storage. SSE has invested in its hydro generation assets to increase flexibility to the UK grid. It is assumed that by providing more flexible hydro output from existing assets SSE could generate an additional £15m per annum through generating additional volumes and/ or capturing high prices during system stress periods. Further, balancing market revenue could generate an additional income of up to around £8m a year. These values will vary depending on power prices which are uncertain.

Furthermore, the successful development of the consented Coire Glas Pumped Hydro plant could potentially earn additional revenue between 2025 and 2030. This is based on current revenue projections for the existing pump storage capacity that SSE owns.

Up to £400m increase in revenue by providing flexible hydro output and investing in new pumped storage output over the next 10 years.

## W5. Facility-level water accounting

### W5.1

(W5.1) For each facility referenced in W4.1c, provide coordinates, total water accounting data and comparisons 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/Region

United Kingdom of Great Britain and Northern Ireland

#### River basin

Other, please specify

River catchments Scotland

#### Latitude

56.7044

#### Longitude

3.7297

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

Hydroelectric

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

24,238,358

#### Comparison of withdrawals with previous reporting year

Higher

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

24,238,358

**Comparison of discharges with previous reporting year**

Higher

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

0

**Comparison of consumption with previous reporting year**

About the same

**Please explain**

Over 96% of water abstracted and then discharged is associated with SSE's hydro generation business. In 2018/19, SSE's hydro electricity generation output increased by 3% compared to 2017/18. As a result, water withdrawals and associated discharges for hydro generation purposes increased by 3% in this same period.

---

**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/Region**

United Kingdom of Great Britain and Northern Ireland

**River basin**

Other, please specify

River catchments England

**Latitude**

53.5967

**Longitude**

0.7395

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

Gas

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

892,685

**Comparison of withdrawals with previous reporting year**

Higher

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

887,777

**Comparison of discharges with previous reporting year**

Higher

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

5,511

**Comparison of consumption with previous reporting year**

Lower

**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. Output from SSE's thermal generation power stations decreased by 12% between 2017/18 and 2018/19. During 2018/19 SSE operated thermal generation assets that use once through cooling systems rather than cooling towers. As a result water withdrawals and water returned to the environment increased due to the cooling methods used however water consumption decreased as a result of the type of assets operated.

**Facility reference number**

Facility 3

**Facility name (optional)**

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

**Country/Region**

United Kingdom of Great Britain and Northern Ireland

**River basin**

Other, please specify  
River catchments England and Scotland

**Latitude**

56.935

**Longitude**

3.4308

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

Not applicable

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

95

**Comparison of withdrawals with previous reporting year**

Higher

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

95

**Comparison of discharges with previous reporting year**

Higher

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

95

**Comparison of consumption with previous reporting year**

Higher



**Please explain**

Water used in amenities increased by 5% between 2017/18 and 2018/19 reflecting the increase in the number of properties that have water meters (from 18 sites to 21 sites which represents over 75% of the people employed at SSE). SSE's water saving initiatives continued to be implemented and this kept water consumption at an average 16.9 litre/person/day.

**W5.1a**

**(W5.1a) For each facility referenced in W5.1, provide withdrawal data by water source.**

**Facility reference number**

Facility 1

**Facility name**

Hydro generation

**Fresh surface water, including rainwater, water from wetlands, rivers and lakes**

24,238,358

**Brackish surface water/seawater****Groundwater - renewable****Groundwater - non-renewable****Produced/Entrained water****Third party sources****Comment**

In 2018/19, SSE's hydro electricity generation output increased by 3.3% compared to 2017/18. As a result, water withdrawals and associated discharges for hydro generation purposes increased by 4% in this same period.

**Facility reference number**

Facility 2

**Facility name**

Thermal generation

**Fresh surface water, including rainwater, water from wetlands, rivers and lakes**

11,799

**Brackish surface water/seawater**

878,961

**Groundwater - renewable**

1,925

**Groundwater - non-renewable**

**Produced/Entrained water**

**Third party sources**

**Comment**

Output from SSE's thermal generation power stations decreased by 12% between 2017/18 and 2018/19. However, in this same period, the water abstracted by SSE's thermal generation plant increased by 7%. This was because SSE increased its output from power stations that use once through cooling systems. This resulted in more water being abstracted by the thermal generation fleet between the two periods.

---

**Facility reference number**

Facility 3

**Facility name**

Non-operational buildings

**Fresh surface water, including rainwater, water from wetlands, rivers and lakes**

**Brackish surface water/seawater**

**Groundwater - renewable**

**Groundwater - non-renewable**

**Produced/Entrained water**

**Third party sources**

95

**Comment**

Water used in amenities increased by 5% between 2017/18 and 2018/19 reflecting the increase in the number of properties that have water meters (from 18 sites to 21 sites which represents over 75% of the people employed at SSE). SSE's water saving initiatives continued to be implemented and this kept water consumption at an average 16.9 litre/person/day.

**W5.1b**

**(W5.1b) For each facility referenced in W5.1, provide discharge data by destination.**

---

**Facility reference number**

Facility 1

**Facility name**

Hydro generation

**Fresh surface water**

24,238,358

**Brackish surface water/Seawater**

**Groundwater**

**Third party destinations**

**Comment**

In 2018/19, SSE's hydro electricity generation output increased by 3% compared to 2017/18. As a result, water withdrawals and associated discharges for hydro generation purposes increased by 3% in this same period.

---

**Facility reference number**

Facility 2

**Facility name**

Thermal generation

**Fresh surface water**

10,333

**Brackish surface water/Seawater**

875,840

**Groundwater**

**Third party destinations**

1,604

**Comment**

Output from SSE's thermal generation power stations decreased by 12% between 2017/18 and 2018/19. However, in this same period, the water abstracted and ultimately returned by SSE's thermal generation plant increased by 7%. This was because SSE increased its output from power stations that use once through cooling systems. This resulted in more water being abstracted and ultimately returned by the thermal generation fleet between the two periods.

---

**Facility reference number**

Facility 3

**Facility name**

Non-operational buildings

**Fresh surface water**

**Brackish surface water/Seawater**

**Groundwater**

**Third party destinations**

95

**Comment**

Water used in amenities increased by 5% between 2017/18 and 2018/19 reflecting the increase in the number of properties that have water meters (from 18 sites to 21 sites which represents over 75% of the people employed at SSE). SSE's water saving initiatives continued to be implemented and this kept water consumption at an average 16.9 litre/person/day.

**W5.1c**

**(W5.1c) For each facility referenced in W5.1, provide the proportion of your total water use that is recycled or reused, and give the comparison with the previous reporting year.**

---

**Facility reference number**

Facility 1

**Facility name**

Hydro generation

**% recycled or reused**

76-99%

**Comparison with previous reporting year**

About the same

**Please explain**

The majority of water abstracted and then discharged is associated with SSE's hydro generation business. SSE reuses large amounts of water as part of the 'cascade' schemes (which are in place for the majority of SSE's larger hydro schemes such as Conon, Ness, Tummel and Beaully) where the water is used multiple times at different power stations as it flows downstream.

---

**Facility reference number**

Facility 2

**Facility name**

Thermal generation

**% recycled or reused**

76-99%

**Comparison with previous reporting year**

About the same

**Please explain**

In thermal generation SSE looks to optimise water use on its plants to improve efficiency.

---

**Facility reference number**

Facility 3

**Facility name**

Non-operational buildings

**% recycled or reused**

Less than 1%

**Comparison with previous reporting year**

About the same

**Please explain**

Water used in amenities increased by 5% between 2017/18 and 2018/19 reflecting the increase in the number of properties that have water meters (from 18 sites to 21 sites which represents over 75% of the people employed at SSE). SSE's water saving initiatives continued to be implemented and this kept water consumption at an average 16.9 litre/person/day.

**W5.1d**

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

---

**Water withdrawals – total volumes**

**% verified**

76-100

**What standard and methodology was used?**

Assured by PwC to the ISAE3000 standard and ISAE3410 (assurance engagements on greenhouse gas statements).

---

**Water withdrawals – volume by source**

**% verified**

76-100

**What standard and methodology was used?**

Assured by PwC to the ISAE3000 standard and ISAE3410 (assurance engagements on greenhouse gas statements).

---

**Water withdrawals – quality**

**% verified**

76-100

**What standard and methodology was used?**

Assured by PwC to the ISAE3000 standard and ISAE3410 (assurance engagements on greenhouse gas statements).

---

**Water discharges – total volumes**

**% verified**

76-100

**What standard and methodology was used?**

Assured by PwC to the ISAE3000 standard and ISAE3410 (assurance engagements on greenhouse gas statements).

**Water discharges – volume by destination**

---

**% verified**

76-100

**What standard and methodology was used?**

Assured by PwC to the ISAE3000 standard and ISAE3410 (assurance engagements on greenhouse gas statements).

**Water discharges – volume by treatment method**

---

**% verified**

Not verified

**What standard and methodology was used?**

The majority of SSE's water discharges are associated with SSE's hydro generation and there are no standard effluent parameters used. For the hydro generation business there is regulatory requirements for the flow rates (compensation flows) and these are monitored and reported to the relevant regulator. For discharges for thermal generation these are monitored and regulated by regulatory authorities.

**Water discharge quality – quality by standard effluent parameters**

---

**% verified**

Not verified

**What standard and methodology was used?**

The majority of SSE's water discharges are associated with SSE's hydro generation and there are no standard effluent parameters used. For the hydro generation business there is regulatory requirements for the flow rates (compensation flows) and these are monitored and reported to the relevant regulator. For discharges for thermal generation these are monitored and regulated by regulatory authorities.

**Water discharge quality – temperature**

---

**% verified**

Not verified

**What standard and methodology was used?**

The majority of SSE's water discharges are associated with SSE's hydro generation and there are no standard effluent parameters used. For the hydro generation business there is regulatory requirements for the flow rates (compensation flows) and these are monitored and reported to the relevant regulator. For discharges for thermal generation these are monitored and regulated by regulatory authorities.

**Water consumption – total volume**

---

**% verified**

76-100



**What standard and methodology was used?**

Assured by PwC to the ISAE3000 standard and ISAE3410 (assurance engagements on greenhouse gas statements).

**Water recycled/reused**

**% verified**

76-100

**What standard and methodology was used?**

Assured by PwC to the ISAE3000 standard and ISAE3410 (assurance engagements on greenhouse gas statements).

**W6. Governance**

**W6.1**

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

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

**W6.1a**

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

	Scope	Content	Please explain
Row 1	Company-wide	Commitments beyond regulatory compliance Commitment to water-related innovation Commitment to stakeholder awareness and education Commitment to water stewardship and/or collective action Recognition of environmental linkages, for example, due to climate change	SSE's Environment and Climate Change policy provides the policy framework on climate change and the environment for all of its business operations. This policy is implemented locally by business units through environmental management systems. Water is included as part of this policy, processes and procedures. Specifically, SSE commits to "reduce carbon, energy and water impacts and look at new technologies to support low carbon and less water intensive energy systems in the future". 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 Environment and Climate Change policy is available at SSE's corporate website, <a href="http://sse.com/sustainability">sse.com/sustainability</a> . The Environment and Climate Change Policy is a group policy, it is signed by the Chief Executive Officer.

**W6.2**

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

Yes

**W6.2a**

**(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	Please explain

Chief Executive Officer (CEO)	<p>SSE's Chief Executive has overall lead responsibility for sustainability issues, including water, and this includes at Board-level. The Chief Executive is assisted by Board-level committees, senior management and several specific management committees.</p> <p>The Board is advised on matters of safety, health and environment (SHE) by the Safety, Health and Environment Advisory Committee (SHEAC). The Chief Executive is a member of the SHEAC. The SHEAC 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. In fulfilling this role, the SHEAC reviews and oversees the implementation of key sustainability-related Group policies (that include water-related aspects), including the Safety and Health policy, Environment and Climate Change policy, and Sustainability policy.</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 major plans of action Reviewing and guiding risk management policies Reviewing and guiding strategy Reviewing and guiding corporate responsibility 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, Health and Environment Advisory Committee (SHEAC). The SHEAC contains five independent non-Executive Directors and five Executive Directors. The SHEAC 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. In fulfilling this role, the SHEAC reviews and oversees the implementation of key sustainability-related Group policies (that include water-related aspects), including the Safety and Health policy, Environment and Climate Change policy, and Sustainability policy.</p> <p>In addition, SSE's Chief Sustainability Officer and Managing Director for Corporate Affairs and Sustainability (reporting to the Chief Executive) identifies specific sustainability issues arising from SSE's responsibilities to its customers, communities, employees and shareholders and develops policy in line with the values agreed by the Board. 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. For example, water disclosure was identified as an area for improvement and processes were established and implemented to improve the quantity and quality of water reporting by SSE businesses to external stakeholders.</p>

## 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)**

Group Executive Committee (GEC)

**Responsibility**

Both assessing and 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. SSE's strategy is focused on the low-carbon transition and its Sustainability Framework is designed to ensure that in achieving its core business objectives, by conducting itself in a way that respects the social contract it has with society

and creates long term value. 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 and Environment (SHE) committee

**Responsibility**

Both assessing and 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.

**W-FB6.4/W-CH6.4/W-EU6.4/W-OG6.4/W-MM6.4**

**(W-FB6.4/W-CH6.4/W-EU6.4/W-OG6.4/W-MM6.4) Do you provide incentives to C-suite employees or board members for the management of water-related issues?**

Yes

**W-FB6.4a/W-CH6.4a/W-EU6.4a/W-OG6.4a/W-MM6.4a**

**(W-FB6.4a/W-CH6.4a/W-EU6.4a/W-OG6.4a/W-MM6.4a) 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)?**

	Who is entitled to benefit from these incentives?	Indicator for incentivized performance	Please explain
Monetary reward	Corporate executive team Chief Executive Officer (CEO) Chief Financial Officer (CFO) Chief Operating Officer (COO) Chief Sustainability Officer (CSO) Other, please specify Environment and sustainability managers	Reduction of product water intensity Efficiency project or target – direct operations	The Annual Bonus scheme for Executive Directors, an element of this is based on individual objectives. The Executive Directors are judged on a broad definition of sustainability.  Annual appraisals for all SSE employees are based around its 6 core values, one of which is sustainability. Individual performance is assessed and has implications on whether annual incremental pay rises and/ or bonuses are given.  There are several managers in SSE whose jobs are directly related to environmental management, and therefore their salary and any incentive (monetary and non-monetary) is linked to the fulfilment of environment related personal targets.
Recognition (non-monetary)	Corporate executive team Chief Executive Officer (CEO) Chief Financial Officer (CFO) Chief Operating Officer (COO) Chief Sustainability Officer (CSO)	Reduction of product water intensity Efficiency project or target – direct operations Efficiency project or target – downstream in the value chain Efficiency project or target – upstream in the value chain	Annual appraisals for all SSE employees are based around its 6 core values, one of which is sustainability. Individual performance is assessed and recognition given for achieving specific targets that fit into the core values.

		Behavior change related indicator	
Other non-monetary reward	Chief Sustainability Officer (CSO) Other, please specify Environment/ sustainability managers	Reduction of water withdrawals Reduction in consumptive volumes Reduction of product water intensity Efficiency project or target – direct operations Effluent quality improvements Behavior change related indicator Supply chain engagement	There are several managers in SSE whose jobs are directly related to environmental management, and therefore their salary and any incentive (monetary and non-monetary) is linked to the fulfilment of environment related personal targets.

## 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 (one of six of its core values) guides its overall approach on environment and climate change issues. SSE has policy and public affairs specialists based in Glasgow, Edinburgh, London, Belfast and Dublin who engage openly and constructively with legislators, officials and other policy makers on all aspects of environment (including water) 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. 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. SSE has also signed up to the voluntary membership of the Chartered Institute of Public Relations' UK Lobbying Register. Alongside the SSE Group policy, employees are governed by its Code of Conduct. SSE also participates in mandatory registration for political engagement where such register exist (e.g. SSE's European Declaration).

## 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	SSE's vision is to be a leading energy company in a low-carbon 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, operating and owning energy and related infrastructure in a sustainable way.

			At the core of its business are a portfolio of world-class renewable generation assets and electricity network businesses. These businesses are particularly well placed to seize the opportunities presented by decarbonisation and electrification. The strategy is therefore focussed on developing, operating and owning assets that create long-term value and are vital to the low-carbon transition. Increasing volumes of wind energy coming onto the UK energy system will create the need for more flexibility in the form of energy storage, and SSE's hydro generation assets are well placed to provide this in an optimal way.
Strategy for achieving long-term objectives	Yes, water-related issues are integrated	21-30	<p>At the heart of SSE's strategy is a commitment to contribute substantively to the transition to a low-carbon electricity system. To support this strategy, SSE's core businesses will be focused on economically regulated electricity networks and renewable sources of energy, complemented by other flexible electricity generation.</p> <p>The transition to a low-carbon economy will lead to increasing volumes of wind energy coming onto the UK energy system and this will create the need for more flexibility in the form of energy storage. SSE's fast-acting flexible generators like hydro and pumped storage are able provide this flexibility in an optimal way. Hydro generation is unique in SSE's portfolio, as it can be characterised as renewable and flexible. SSE has 400MW of run-of-river hydro, 750 MW of flexible hydro and 300 MW of pumped storage. These hydro assets operate flexibly as 'Britain's biggest battery'.</p> <p>SSE is investing to upgrade these 'natural batteries' and ensure that they are even more relevant. This investment in these critical assets will create value for shareholders in terms of returns and create value for society in terms of its contribution to the achievement of the all-important goal of a low carbon economy.</p>
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)

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

Water-related OPEX (+/- % change)

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

Please explain

During the year to 31 March 2019, SSE's investment and capital expenditure totalled over £1.42bn, including over £1bn in renewable energy and regulated energy networks.

## W7.3

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

	Use of climate-related scenario analysis	Comment
Row 1	Yes	<p>In July 2017, SSE published its first carbon scenarios report, Post-Paris, assessing the resilience of its business model in GB against three climate change scenarios (2 degrees, 1.5 degrees and 4 degree temperature changes). The report focused on the material parts of SSE's business that are most at risk from the impact of market and policy changes associated with carbon reduction ambitions: SSE's Wholesale, Transmission and Distribution businesses.</p> <p>The results of the assessment showed that SSE's existing, resilient, portfolio of assets can respond to the various scenarios assessed, and its diverse range of future development options provide many potential opportunities for the future. SSE will continue to develop its scenario analysis by extending it to cover gas and bring more financial information into its disclosure.</p> <p>In November 2017, SSE committed to meeting the Task Force on Climate-related Financial Disclosures (TCFD) recommendations in full by 2021.</p>

### W7.3a

**(W7.3a) Has your organization identified any water-related outcomes from your climate-related scenario analysis?**

No

### 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**

In 2017 SSE's Finance Director outlined SSE's latest initiative to quantify the natural capital of the seabed. This was launched as another phase of SSE's long term engagement programme to identify and quantify the impacts that its submarine electricity cables have on the marine environment and what mitigations it can adopt to ensure the most effective use and co-existence.

SSE continue to be an active participant in the Natural Capital Oceans protocol which is currently being development by the Institute of Chartered Accountants in England and Wales (ICAEW), Conservation International (CI), and the U.S. National Oceanic and Atmospheric Administration (NOAA). In the last 12 months SSE has presented its Marine Licences CBA method statement and CBA tool at two separate events. SSE's tool is widely regarded as one of the most advanced examples of quantification of the sea bed and being used as a platform for other projects in both the public and private sector.

## W8. Targets

### W8.1

**(W8.1) Describe your approach to setting and monitoring water-related targets and/or goals.**

	Levels for targets and/or goals	Monitoring at corporate level	Approach to setting and monitoring targets and/or goals
Row 1	Company-wide targets and goals	Targets are monitored at the corporate level	The Safety, Health and Environment Advisory Committee (SHEAC) (a sub-Committee of the Board) advises the Board on safety, health and environment matters. It is responsible for SHE policies, targets and strategy, performance, awareness and action. SSE has an environment improvement plan that has been agreed by the SHEAC. This plan involves water-related goals and targets.



		Goals are monitored at the corporate level	SSE has a group wide Environment and Climate Change policy. This policy is implemented locally by business units through environmental management systems. Water is included as part of this policy, processes and procedures. Specifically, SSE commits to “reduce carbon, energy and water impacts and look at new technologies to support low carbon and less water intensive energy systems in the future”. 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 Environment and Climate Change Policy is a group policy and is signed by the Chief Executive Officer.
--	--	--	---

## W8.1a

(W8.1a) Provide details of your water targets that are monitored at the corporate level, and the progress made.

### Target reference number

Target 1

### Category of target

Water pollution reduction

### Level

Company-wide

### Primary motivation

Reduced environmental impact

### Description of target

This target is focused on pollution prevention to reduce impacts to the environment, protect the reputation of the company, reduce risk and ensure compliance with regulations.

The target is - no pollution incidents.

### Quantitative metric

Other, please specify

No pollution incidents - number

### Baseline year

2018

### Start year

2019

### Target year

2019

### % achieved

100

### Please explain

In 2018/19 SSE had no pollution incidents.

SSE monitors, measures 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 response procedures, secondary containment, and water treatment facilities where required in relation to permit conditions.

For the hydro generation business there is regulatory requirements for the flow rates (compensation flows) and these are monitored and reported to the relevant regulator.

The increased transparency around water reporting has led to the improvement in the reliability and accuracy of water data. In addition, SSE conducts internal water audits of water monitoring, data collection and reporting activities.

External audit is also part of the improved due diligence process, with assurance of water data by PwC for the first time in 2015/16 and the repeated assurance of water data by PwC in 2016/17, 2017/18 and 2018/19.

---

**Target reference number**

Target 2

**Category of target**

Water consumption

**Level**

Company-wide

**Primary motivation**

Cost savings

**Description of target**

SSE targets a 15% reduction in water consumption in its non-operational buildings up to 2023 (5 year plan). In year 2 (2018/19), SSE achieved its 2.5% target reduction in water consumption in its non-operational buildings. This was a result of working differently and the introduction of water saving initiatives.

**Quantitative metric**

% reduction in total water consumption

**Baseline year**

2017

**Start year**

2017

**Target year**

2023

**% achieved**

40

**Please explain**

SSE targets a 15% reduction in water consumption in its non-operational buildings up to 2023 (5 year plan). In year 2 (2018/19), SSE achieved its 2.5% target reduction in water consumption in its non-operational buildings. This was a result of working differently and the introduction of water saving initiatives.

## W8.1b

**(W8.1b) Provide details of your water goal(s) that are monitored at the corporate level and the progress made.**

---

**Goal**

Watershed remediation and habitat restoration, ecosystem preservation

**Level**

Company-wide

**Motivation**

Water stewardship

**Description of goal**

Partnerships and collaborative working with regulatory bodies (such as SEPA) and other stakeholders to find the appropriate balance between maintaining renewable energy generation, security of supply and delivering local environmental improvements.

**Baseline year**

2016

**Start year**

2016

**End year**

2020

**Progress**

SSE has regular contact with regulators, Environment Agency, SEPA and Environment Protection Agency (Ireland) on water issues including consents, compensation flows and river basin/ ecosystem/ habitat management. SSE also maintains a strong presence at meetings that involve regulators and policy makers in relation to water issues for example SSE are engaging in workstreams associated with the recently published water abstraction plan for England and SSE meets regularly with SEPA to discuss the impact of water framework directive on its hydro operations up to 2027.

## W9. Linkages and trade-offs

### W9.1

**(W9.1) Has your organization identified any linkages or tradeoffs between water and other environmental issues in its direct operations and/or other parts of its value chain?**

Yes

### W9.1a

**(W9.1a) Describe the linkages or tradeoffs and the related management policy or action.**

---

**Linkage or tradeoff**

Linkage

**Type of linkage/tradeoff**

Other, please specify  
Climate change and impact on weather

**Description of linkage/tradeoff**

Climate change and its potential impact on weather. Weather then impacts the environment and creates flooding events that have the potential to impact SSE's operations.

**Policy or action**

The following actions are in place: safety, health and environment policy, risk assessments, mitigation plans, targets and performance review.

## W10. Verification

### W10.1

**(W10.1) Do you verify any other water information reported in your CDP disclosure (not already covered by W5.1d)?**

No, but we are actively considering verifying within the next two years

## 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 Sustainability Officer	C-suite

### W11.2

**(W11.2) Please indicate whether your organization agrees for CDP to transfer your publicly disclosed data on your impact and risk response strategies to the CEO Water Mandate's Water Action Hub [applies only to W2.1a (response to impacts), W4.2 and W4.2a (response to risks)].**

Yes

## SW. Supply chain module

### SW0.1

**(SW0.1) What is your organization's annual revenue for the reporting period?**

	Annual revenue
Row 1	

### SW0.2

**(SW0.2) Do you have an ISIN for your organization that you are willing to share with CDP?**

### SW1.1

**(SW1.1) Have you identified if any of your facilities reported in W5.1 could have an impact on a requesting CDP supply chain member?**

## SW1.2

**(SW1.2) Are you able to provide geolocation data for your site facilities?**

Yes, for all facilities

## SW1.2a

**(SW1.2a) Please provide all available geolocation data for your site facilities.**

Identifier	Latitude	Longitude	Comment
------------	----------	-----------	---------

## SW2.1

**(SW2.1) Please propose any mutually beneficial water-related projects you could collaborate on with specific CDP supply chain members.**

## SW2.2

**(SW2.2) Have any water projects been implemented due to CDP supply chain member engagement?**

No

## SW3.1

**(SW3.1) Provide any available water intensity values for your organization's products or services across its operations.**

## Submit your response

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

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

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

**Please confirm below**