

SSE's criteria for GHG emissions and water reporting

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1 - About SSE

SSE plc is one of the UK and Ireland's leading energy companies, involved in the generation, transportation and supply of electricity and in the extraction, storage, transportation and supply of gas. Its purpose is to responsibly provide the energy and related services needed now and in the future. Its vision is to be a leading provider of energy and related services in a low-carbon world. Its strategy is to create value for shareholders and society from developing, owning and operating energy and related infrastructure and services in a sustainable way.

2 - Aim of this document

This document details the reporting approach used by SSE plc (SSE) to report on GHG emissions and water usage during the financial year (1 April 2019 to 31 March 2020) as a result of operational activities undertaken by the SSE Group.

3 - Organisational boundaries included for this reporting period

There are two methods that are described in the GHG reporting protocol and ISO14064-1:2006 standards: the equity share and control (financial or operational) approaches. An operational control consolidation approach was used to account for emissions. Table 1 describes the business units that are within the operational boundary approach.

The environmental data associated with any divestments is removed from the baseline, intervening years and current year to ensure relevant comparisons and consistent performance towards the green bonds.

Table 1: Brief description of business units included within the scope of GHG reporting process.

Company/Business Unit	Description
SSE's Networks businesses	SSE delivers energy to homes and businesses in Great Britain through its Scottish and Southern Energy Networks (SSEN) businesses. It owns and operates electricity distribution networks in the north of Scotland and central southern England, and the electricity transmission network in the north of Scotland. SSE also has an ownership interest in gas distribution in Scotland and southern England. SSEN operates five economically-regulated energy networks, comprising over 130,000km of overhead lines and underground cables and 106,000 substations. The five economically-regulated energy network companies are: Scottish Hydro Electric Transmission (100%); Scottish Hydro Electric Power Distribution (100%); Southern Electric Power Distribution (100%); Scotland Gas Networks (33.3%); and Southern Gas Networks (33.3%) (collectively known as Scotia Gas Networks) (SGN is excluded from SSE's emissions reporting see section 5).
SSE's Wholesale businesses	SSE creates value by sourcing and producing energy. It is a leading generator of electricity from renewable sources in the UK and Ireland under the banner of SSE Renewables. Its interests in renewable energy are complemented by ownership and operation of flexible thermal power stations. It 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. These wholesale businesses contribute significantly to electricity and gas systems of the UK and Ireland.
SSE's Customer-focused businesses	SSE's Customer-focused businesses supply electricity and gas and other services to households and businesses across the UK and Ireland with 1.24 million customer accounts. SSE supplies other related products and services, including telephone broadband and boiler care. SSE Enterprise provides energy and related services to industrial, commercial and public sector customers across the UK. It has over 8,800 heat network customer accounts. In January 2020, the SSE Group completed the sale of SSE Energy Services to OVO. This business, which had been held for sale for the duration of financial year 2019/20, supplies gas and electricity to domestic customers in GB. SSE Energy

Company/Business Unit	Description
	Services has been excluded from the SSE Group's 2019/20 GHG and Water assurance process, however material environmental KPIs for SSE Energy Services between 1 April 2019 up to the date of sale in January 2020 will be reported in the SSE Group's Sustainability Report 2020.

4 - Organisational business units excluded from inventory

SSE has excluded any joint ventures in which it does not have operational control. Below is a list of some 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 252-259 of SSE's Annual Report 2020.

Business	Activities	Reason for Exclusion
Scotia Gas Networks (SGN) Limited	Investment in gas networks	Joint venture
Greater Gabbard Offshore Winds Limited (GGOWL)	Offshore wind generation	Joint venture
SSE E&P UK Limited	Gas exploration and production	<p>Although this company is wholly owned by SSE, it does not hold a controlling stake in any assets.</p> <p>SSE announced its intention to sell this business in May 2019. The details of this are provided in SSE's key investor publications – annual results and accounts 2019 (page 53) and interim results statement November 2019. These assets are accounted for as held for sale in SSE's interim results statement November 2019 (page 12).</p>

5 - GHG Reporting Criteria

This section outlines the annual greenhouse gas (GHG) emissions reporting approach used by SSE plc (SSE) to report the tonnes of carbon dioxide equivalent (CO₂e) from the Group's operational activities.

The document provides details of the amount of GHG emissions that can be directly attributed to SSE operations within the declared boundary and scope for the specified reporting period. The inventory has been prepared in accordance with requirements of the UK Government's environmental reporting guidelines (DEFRA, June 2013); the *Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (revised edition)* developed by the World Resources Institute and the World Business Council for Sustainable Development (2004); and *ISO 14064-1:2006 Specification with Guidance at the Organization Level for Quantification and Reporting of Greenhouse Gas Emissions and Removals*. Where relevant, the inventory is aligned with industry or sector best practice for emissions measurement and reporting.

This document aims to detail the GHG collection, collation, conversion and reporting process used by SSE to report annual GHG emissions.

5.1 - GHG emissions source inclusions

The GHG emissions sources included in this inventory are those required by BEIS reporting standards (<https://www.gov.uk/guidance/measuring-and-reporting-environmental-impacts-guidance-for-businesses>), GHG Protocol (<http://www.ghgprotocol.org/standards/corporate-standard>) and ISO14064-1:2006 standards (<https://www.iso.org/obp/ui/#iso:std:iso:14064:-1:ed-1:v1:en>). GHG emissions are classified, in accordance with these standards, into the following categories:

- **Direct GHG emissions (scope 1):** GHG emissions from sources that are owned or controlled by the company.
- **Indirect GHG emissions (scope 2):** GHG emissions from the generation of purchased electricity, heat and steam consumed by the company.
- **Indirect GHG emissions (scope 3):** GHG emissions that occur as a consequence of the activities of the company, but occur from sources not owned or controlled by the company. Inclusion of other scope 3 emissions sources is done on a case-by-case basis in accordance with the guidance given in the *Greenhouse Gas Protocol: Corporate Value Chain (Scope 3) Accounting and Reporting Standard* (Supplement to the GHG Protocol Corporate Accounting and Reporting Standard).

The following emission sources from SSE operations are included in the GHG emissions reporting:

The direct GHG emissions (scope 1) cover:

- **Generation power stations** – coal, oil, gas and biomass consumed in SSE’s thermal power generation plant (including Power Purchase Agreements) to generate electricity.
- **Gas consumption in buildings** – this is the gas consumed by SSE’s non-operational buildings (offices, depots, call centres) to maintain building temperatures.
- **Network fuel consumed** – this includes diesel and gas oil used by fixed generators on islands and mobile generators to generate electricity to maintain the distribution network.
- **Company vehicles** – this is the petrol or diesel used by SSE’s operational vehicles for business activities (operational vehicles are those vehicles that are owned by SSE and used by employees for SSE business activities).
- **Fugitive emissions** – use of sulphur hexafluoride (SF₆) in the transmission and distribution networks for conductivity (used in the switchgears and substations).

The indirect emissions (scope 2) cover:

- **Electricity consumption in buildings** – this is the electricity consumed by SSE’s non-operational buildings (customer call centres, offices). This data excludes leased buildings (which represent less than 1% of employees).
- **Electricity consumption in networks** – this is the electricity used by SSE’s operational buildings (e.g. substations) in the transmission and distribution network.
- **Electricity consumption in thermal power stations** – this is the electricity used by SSE’s GB thermal power stations for the generation of electricity. This data excludes power stations below 100MW which do not have metering and thermal power stations in Ireland.
- **Distribution losses** – this is the electricity lost in SSE’s distribution network in the north of Scotland (SHEPD) and southern central England (SEPD) transporting electricity to the customer.

The indirect emissions (scope 3) cover:

- **Business travel** – domestic (between UK airports), short haul (international flights to/from UK less than 3,700km, usually to European destinations), long haul (international flights to/ from UK greater than 3,700km, usually to non-European destinations) and international (international flights to/ from non-UK destinations) travel by air, rail and car miles travelled using third party transport (this is vehicles owned and operated by other organisations that SSE employees use to conduct business activities).
- **Well to tank emissions** – this is the GHG emissions associated with the extraction, refining and transportation of the raw fuel sources to SSE’s sites before they are used to generate electricity at the power station, as defined by BEIS reporting guidelines.
- **Gas sold to customers** – the amount of gas sold to customers (industrial and commercial business customers in the UK and Ireland and domestic customers in Northern Ireland and the Republic of Ireland) that is then used by our customers for heating and power purposes. This figure is calculated by taking the amount of gas

sold (millions therms) converting it to kWh and then applying a carbon dioxide conversion factor provided by BEIS reporting guidelines (<https://www.gov.uk/guidance/measuring-and-reporting-environmental-impacts-guidance-for-businesses>).

- **Transmission losses** – the electricity lost in the SHE Transmission network (the network between the generator and the distribution company) in the north of Scotland. The transmission of electricity is managed by the network operator, National Grid.
- **Transmission and distribution losses** – this is the transmission and distribution losses (the energy loss that occurs getting the electricity to SSE non-operational buildings from the power plant) associated with the electricity consumed by SSE’s non-operational buildings (offices, depots, call centres) and operational buildings (substations and thermal power stations). This figure is calculated by taking the scope 2 electricity consumption figure for non-operational buildings and electricity consumption in networks and thermal power stations and applying a carbon dioxide conversion factor provided by BEIS reporting guidelines (<https://www.gov.uk/guidance/measuring-and-reporting-environmental-impacts-guidance-for-businesses>). This data is separate to the losses that SSE’s transmission and distribution networks report.

The emission sources are explained in detail in Table 2.

5.2 - Carbon intensity for electricity generation

Intensity ratios compare emissions data with an appropriate business metric or financial indicator, such as sales revenue or square metres of floor space. For SSE the most appropriate business metric is the output from its electricity generation activities (kWh). Using an intensity ratio allows organisations to compare performance over time and with other similar types of organisations.

To calculate an intensity ratio emissions are divided by an appropriate activity metric (full time equivalents) or financial metric (£ million sales). The results of this provides a normalised data point which is called an intensity ratio.

For SSE, the intensity ratio that it reports is based on:

1. SSE’s carbon dioxide equivalent (CO₂e) from its electricity generation emissions data; and
2. The total output from SSE’s electricity generation (both thermal (coal, oil, gas, biomass, multifuel) and renewables (onshore and offshore wind, hydro and pumped storage)).

This intensity ratio is used to measure SSE’s performance against its 2030 carbon intensity target which is to ‘cut the carbon intensity of the electricity it generates by 50% by 2030 based on 2017/18 levels’.

Output reporting (GWh – gigawatt hours)

Output (or volume) is taken from the 1 April 2019 to 31 March 2020. The output volumes include projects that are operational. For projects that move from construction to operation during the reporting period, output data is taken from the date of commissioning.

The output refers to the generation from the thermal and renewable generating sites at the Notional Balancing Point. This is where demand is managed and is comparable across the industry for trading and monitoring.

Output data is based on meter points at the Notional Balancing Point. This data is collected by Elexon, stored on SONET (an external database that stores electricity settlement data) and managed through an internal finance management system by business finance at SSE.

Electricity generation emissions data

The fuel consumed in SSE’s thermal power generation plant – coal, oil, gas and biomass (including Power Purchase Agreements) to generate electricity is used to calculate the carbon dioxide equivalent emissions. This also includes diesel and gas oil used by fixed generators on islands. The emission sources are explained in detail in Table 2 in the business unit ‘Generation’ row.

Table 2: GHG emissions sources included in the inventory.

<i>Business unit</i>	<i>GHG emissions source¹</i>	<i>GHG emissions level scope</i>	<i>Data source & collection process</i>	<i>Data collection unit</i>	<i>Uncertainty (description)</i>
Generation	Fuel used by power stations to generate electricity – coal, oil, gas and biomass	Scope 1	Fuel used (coal, oil, gas and biomass) is measured through meters and weight tickets and converted using EU ETS guidelines for the calendar year. However, SSE reporting period is from 1 April to 31 March, hence Energy Portfolio Management (EPM) team estimate GHG emissions in the final quarter using the power generation data and composition of the fuel used. The estimation is reconciled annually prior to EU ETS calendar year submission. EPM estimates power station emissions based on known plant activity, closures/ acquisitions and power generation data to estimate emissions and for emissions trading purposes.	kWh	

¹ The activity data highlighted with an asterix (*) are also subject to assurance by PwC and this is separate to the carbon emissions assurance completed by PwC.

<i>Business unit</i>	<i>GHG emissions source¹</i>	<i>GHG emissions level scope</i>	<i>Data source & collection process</i>	<i>Data collection unit</i>	<i>Uncertainty (description)</i>
All business units combined	Operational vehicles & plant (diesel) *	Scope 1	Fuel is bought using fuel cards from independent fuel suppliers or dispensed at onsite fuel depot. Fuel card data is provided by independent fuel suppliers to Fleet Services. Fuel cards are reconciled with supplier invoices. Fuel dispensed from onsite depots is recorded and consolidated with fuel dispensed data from the independent suppliers.	litres	
All business units combined	Operational vehicles & plant (petrol) *	Scope 1	Fuel is bought using fuel cards from independent fuel suppliers or dispensed at onsite fuel depot. Fuel card data is provided by independent fuel suppliers to Fleet Services. Fuel cards are reconciled with supplier invoices. Fuel dispensed from onsite depots is recorded and consolidated with fuel dispensed data from the independent suppliers.	litres	Fuel invoices do not include fuel dispensed a few days before the invoice so there is delay in reporting periods however this balances during the year and between financial reporting periods.
All business units combined	Mobile plant (used when substations fail) – diesel and gas oil *	Scope 1	Fuel purchased is recorded through a fuel card or through purchase of fuel stock – all recorded in fleet database	litres	
Networks – transmission and distribution	Fugitive emissions (SF ₆) – SHE Transmission, SHEPD & SEPD	Scope 1	Transmission and distribution engineers record SF ₆ top ups and exception events requiring SF ₆ top up in the asset management system, Maximo. The ENA model gives typical loss rate figure as a result of normal operation.	tonnes	
Networks	Losses (SHEPD & SEPD)	Scope 2	Figures for network losses are calculated using standard distribution losses guidance (produced by Elexon) to compute the losses in the distribution system.	kWh	Based on industry standards for line losses and distribution losses

<i>Business unit</i>	<i>GHG emissions source¹</i>	<i>GHG emissions level scope</i>	<i>Data source & collection process</i>	<i>Data collection unit</i>	<i>Uncertainty (description)</i>
Generation	Thermal power station electricity consumption	Scope 2	There are 25 thermal power stations in the UK and Ireland. The large power stations (with capacity greater than 100 MW) have automatic electricity meters. Meter reading data of electricity use are transmitted through Elexon. This data is recorded on SSE's finance system TM1 and then downloaded onto an excel spreadsheet. Reconciliation of meter reads is completed with monthly invoices.	kWh	Some thermal power stations are excluded from the data because they are below 100MW (18 sites) and they do not have meters to measure consumption and electricity consumption is assumed to be minimal. Data excludes thermal power stations in Ireland.
All business units combined	Non-operational building electricity consumption *	Scope 2	Non-operational buildings are classed as offices, depots, warehouses and call centres. There are around 200 non-operational sites. Most non-operational buildings have automatic electricity meter. Records of electricity use are transmitted through automatic meter readings to Clarity and IMServ. Clarity and IMServ integrates with ESG ecomonitor web based facility where the electricity use is downloaded into an excel spreadsheet. Reconciliation of meter reads is completed with monthly invoices.	kWh	Not all non-operational buildings are on half hourly meters. Some are based on submitted actual meter reading, or estimated on billing system. Data excludes leased buildings with small number of employees (less than 1% of employees).

<i>Business unit</i>	<i>GHG emissions source¹</i>	<i>GHG emissions level scope</i>	<i>Data source & collection process</i>	<i>Data collection unit</i>	<i>Uncertainty (description)</i>
All business units combined	Non-operational buildings – gas usage *	Scope 1	Non-operational buildings are classed as offices, depots, warehouses and call centres. There are around 200 non-operational sites. Most non-operational buildings have automatic gas meters. Records of gas use are transmitted through automatic meter readings to MeterPower. MeterPower integrates with ESG ecomonitor web based facility where the gas use is downloaded into an excel spreadsheet. Reconciliation of meter reads is completed with monthly invoices.	kWh	Not all non-operational buildings are on half hourly meters. Some are based on submitted actual meter reading, or estimated on billing system. Data excludes leased buildings with small number of employees (less than 1% of employees).

<i>Business unit</i>	<i>GHG emissions source¹</i>	<i>GHG emissions level scope</i>	<i>Data source & collection process</i>	<i>Data collection unit</i>	<i>Uncertainty (description)</i>
Networks – transmission and distribution	Substations – SHE Transmission, SHEPD & SEPD	Scope 2	<p>Substation electricity consumption is estimated as there are no meters in place. This is done by classifying the types of consumption and estimating the energy use of using the electrical load of the appliance. This includes:</p> <ul style="list-style-type: none"> • Space Heaters: Based on multiples of 3kW off peak heating on for 6hrs per day for 4 months of the year in the south and 6 months in the north (only 10% of buildings heated in HV sites). • Panel Heaters: Based on multiples of 0.07kW (only 10% of HV sites with separate lv panels). • Lighting: Based on multiples of 0.2kW, on for 10 days during the year. • Battery-Chargers: Based on multiples of 0.5kW continuous supply to DC standing loads. • Mains powered equipment: Based on 0.5kW continuous supply. • Transformer Coolers: Based on cooler ratings of individual transformers. Substations are assumed to have 2 transformers on average, with coolers in operation for 10 days of the year. • Electrical load has been calculated for each type of substation, using the principles detailed above. The calculated average annual load has then been multiplied by the relevant number of substations giving total figures in kWh 	kWh	Substations are not metered so their energy consumption is based upon estimates which are based on the size of the substation, electricity capacity and the operation activities of each building through the financial year.

<i>Business unit</i>	<i>GHG emissions source¹</i>	<i>GHG emissions level scope</i>	<i>Data source & collection process</i>	<i>Data collection unit</i>	<i>Uncertainty (description)</i>
All business units combined	Flights – domestic * Flights – short haul * Flights – long haul * Flights – international*	Scope 3	Booked through SSE’s web based travel booking system, Traveldoo (up to October 2019) and Capita (from November 2019 to 1 st April 2020). Flight distances are calculated using web flyer (www.webflyer.com) website. Flight distances are in miles and converted to km (using 1.609 conversion factor).	km	The actual flight distance may not always be exactly as standard for the route, the conversion factors used take account of the fact that distances travelled may not be representative of the journey due to changes in flight paths for safety/ weather/ etc. as detailed by CarbonSmart guidance.
All business units combined	Train *	Scope 3	Booked through SSE’s web based travel booking system, Traveldoo (up to October 2019) and Capita (from November 2019 to 1 st April 2020). Train distances are calculated using the AA route planner. Train distances are in miles and converted to km (using 1.609 conversion factor).	km	Small % of train journeys will be booked out with travel desk system.
All business units combined	SSE & SEC Cars (petrol and diesel) *	Scope 3	Claims made through expenses system for business purposes using employees own cars or car ownership scheme (COS) cars. The mileage relates to the date the miles were claimed. The mileage claim data is uploaded into TM1 expense system. Distances are in miles and converted to km (using 1.609 conversion factor).	km	

<i>Business unit</i>	<i>GHG emissions source¹</i>	<i>GHG emissions level scope</i>	<i>Data source & collection process</i>	<i>Data collection unit</i>	<i>Uncertainty (description)</i>
Generation	Fuel purchased – coal, oil, gas and biomass for generation of electricity	Scope 3	Fuel purchased during the financial year (coal, oil, gas and biomass) is measured through meters and weight tickets and converted into kWh using standard industry recognised conversion factors or supplier specific factors.	kWh	Fuel purchased (coal and oil) may not necessarily be used in the year or reporting as there are on-site storage for these fuels.
Retail	Gas sold to customers	Scope 3	<p>Gas volumes are based on settlements data published by Xoserve. SSE receives an allocation of the settlements data based on the total amount of gas used by the local distribution zone based on its portfolio of customers. This number covers both domestic (for the island of Ireland) and business customers (industrial and commercial) for Great Britain and the island of Ireland.</p> <p>The carbon emissions are calculated by taking the scope 3 gas sold to customers figure and applying the carbon dioxide conversion factor provided by BEIS reporting guidelines.</p>	Millions therms	In line with gas settlement industry standard, gas reported contains a portion of unidentified gas supplied. This is to ensure total supply matches demand for the UK gas delivery.

<i>Business unit</i>	<i>GHG emissions source¹</i>	<i>GHG emissions level scope</i>	<i>Data source & collection process</i>	<i>Data collection unit</i>	<i>Uncertainty (description)</i>
Transmission and distribution losses for electricity use	Electricity use in non-operational buildings *	Scope 3	This is the transmission and distribution losses (the energy loss that occurs getting the electricity to SSE non-operational buildings from the power plant) associated with the electricity consumed by SSE's non-operational buildings (offices, depots, call centres). This figure is calculated by taking the scope 2 electricity consumption figure for non-operational buildings and applying a carbon dioxide conversion factor provided by BEIS reporting guidelines.	kWh	
Transmission and distribution losses for electricity use	Electricity use in substations	Scope 3	This is the transmission and distribution losses (the energy loss that occurs getting the electricity to SHE Transmission, SEPD and SHEPD substations from the power plant) associated with the electricity consumed in SHE Transmission, SEPD and SHEPD substations. This figure is calculated by taking the scope 2 substation electricity consumption and applying a carbon dioxide conversion factor provided by BEIS reporting guidelines.	kWh	

<i>Business unit</i>	<i>GHG emissions source¹</i>	<i>GHG emissions level scope</i>	<i>Data source & collection process</i>	<i>Data collection unit</i>	<i>Uncertainty (description)</i>
Transmission	Losses (National Grid)	Scope 3	<p>When transferring power across the SHE Transmission System, some of the power is 'lost' known as 'Transmission Losses'.</p> <p>Figures for transmission losses are calculated using standard transmission losses guidance (produced by Elexon) to compute the losses in the transmission system.</p> <p>This data is reported by National Grid as the system operator. They report this figure for the period of July to June to SSE for its assets. The figure is for the previous financial year as a result of the timing of the data capture process. This means for the financial year 1 April 2019 to 31 March 2020 the data will be based on the previous financial year July 2018 to June 2019. The data is verified by an independent third party, WSP, for National Grid.</p>	kWh	Based on industry standards for transmission losses

5.3 - GHG conversion factors

To calculate all the fuel sources into GHG emissions the BEIS UK conversion factors spreadsheet developed by CarbonSmart is downloaded annually from BEIS website - <https://www.gov.uk/government/collections/government-conversion-factors-for-company-reporting>. The following conversion factors are applied to each source of emissions (table 3).

For the Fuel Used by generation the emissions are calculated by the power stations and converted using the EU ETS guidelines. This is then verified by independent third parties and evidence submitted to regulators in accordance with EU ETS legislation.

Table 3: GHG emissions conversion factors source.

Activity	Conversion Factor source	Category of emission factor used
Generation	EU ETS statements	As per EU ETS categories
Operational vehicles & plant (diesel)	https://www.gov.uk/government/collections/government-conversion-factors-for-company-reporting	Fuels
Operational vehicles & plant (petrol)	https://www.gov.uk/government/collections/government-conversion-factors-for-company-reporting	Fuels
Mobile plant – gas oil	https://www.gov.uk/government/collections/government-conversion-factors-for-company-reporting	Fuels
Fugitive emissions (SF ₆) – SHE Transmission, SHEPD & SEPD	https://www.gov.uk/government/collections/government-conversion-factors-for-company-reporting	Refrigerant & other
Fuel combustion – for mobile and fixed generation on distribution networks (diesel) – SHEPD & SEPD	https://www.gov.uk/government/collections/government-conversion-factors-for-company-reporting	Fuels
Losses (SHE transmission, SHEPD & SEPD)	https://www.gov.uk/government/collections/government-conversion-factors-for-company-reporting	UK electricity
Non-operational building electricity consumption	https://www.gov.uk/government/collections/government-conversion-factors-for-company-reporting	UK electricity and overseas electricity
Thermal power station electricity consumption	https://www.gov.uk/government/collections/government-conversion-factors-for-company-reporting	UK electricity
Non-operational buildings – gas usage	https://www.gov.uk/government/collections/government-conversion-factors-for-company-reporting	Fuels
Substations – SHE transmission, SHEPD & SEPD	https://www.gov.uk/government/collections/government-conversion-factors-for-company-reporting	UK electricity
Flights - domestic	https://www.gov.uk/government/collections/government-conversion-factors-for-company-reporting	Business travel - air
Flights – short haul	https://www.gov.uk/government/collections/government-conversion-factors-for-company-reporting	Business travel – air

Flights – long haul	https://www.gov.uk/government/collections/government-conversion-factors-for-company-reporting	Business travel – air
Flights – international	https://www.gov.uk/government/collections/government-conversion-factors-for-company-reporting	Business travel – air
Train	https://www.gov.uk/government/collections/government-conversion-factors-for-company-reporting	Business travel – land
SSE & SEC cars (petrol & diesel)	https://www.gov.uk/government/collections/government-conversion-factors-for-company-reporting	Passenger vehicles
Transmission and distribution losses for electricity use in non-operational and thermal power stations buildings	https://www.gov.uk/government/collections/government-conversion-factors-for-company-reporting	Transmission and distribution
Transmission and distribution losses for electricity use in SHE Transmission, SEPD and SHEPD substations	https://www.gov.uk/government/collections/government-conversion-factors-for-company-reporting	Transmission and distribution
Transmission and distribution losses in the transmission (National Grid) network	https://www.gov.uk/government/collections/government-conversion-factors-for-company-reporting	Transmission and distribution
Well to tank emissions for fuel purchased for generation	https://www.gov.uk/government/collections/government-conversion-factors-for-company-reporting	WTT - fuels
Gas sold to customers	https://www.gov.uk/government/collections/government-conversion-factors-for-company-reporting	Fuels

5.4 - GHG emissions source exclusions

Emissions sources in Table 3 have been identified and excluded from the GHG emissions inventory.

Table 3: GHG emissions sources excluded from the inventory

Business unit	GHG emissions source	GHG emissions level scope	Reason for exclusion
	Operational vehicles on the island of Ireland	Scope 1	Minimal
	Bus travel	Scope 3	Bus not used for business travel
	Taxi travel	Scope 3	Minimal – taxis only taken on short journeys – distances not logged.
	Hire Car Travel	Scope 3	Minimal
	Boat and helicopter travel	Scope 3	Minimal
	Electricity consumption in residential property and leased buildings.	Scope 2	Minimal
	Gas consumption in residential property, leased buildings and generation sites where it is used for heating purposes on the site itself.	Scope 1	Minimal
	Waste to Landfill	Scope 3	Minimal
	Water & Waste Water	Scope 3	Minimal
	Fugitive emissions of methane from Gas Storage venting	Scope 1	Minimal
	SF ₆ from Generation switchgear and embedded distribution	Scope 1	Minimal
	Well to tank emissions from other fuel use in operations that is not related to generation activities	Scope 3	Minimal
	Thermal power station electricity consumption at sites with capacity lower than 100MW (18 sites) that do not have meters to measure consumption. Thermal power stations in Ireland are excluded.	Scope 2	Minimal

5.5 - GHG emissions calculations and results

GHG emissions for the organisation are calculated in excel spreadsheet 'Appendix 1' where they are stated by greenhouse gas, by scope, by business unit and as total emissions.

6 - Water reporting criteria

This document aims to detail the water data collection, collation, conversion and reporting process used by SSE to report annual water volumes in millions of cubic meters (millions m³) for the reporting period.

6.1 - Water source inclusions

The water sources included in this inventory are those required by BEIS reporting standards and include the total water (billions m³):

- **abstracted** – the volume of water taken from rivers, lochs, sea, estuaries and mains supplies for operational activities;
- **consumed** – the volume of water used by the business to conduct its operations; and
- **returned** – the volume of water returned to source (river, loch, sea or estuary).

SSE uses water for four main purposes:

1. to cool its generation plant (thermal generation operations);
2. as process water for a variety of operations (thermal generation operations);
3. as a source of energy in hydro generation schemes; and
4. for amenities in offices and buildings.

The table below details the source of the water data, how the water data is collected and reported, and any uncertainties in the water data.

<i>Business unit</i>	<i>Water volume source</i>	<i>Data source & collection process</i>	<i>Uncertainty (description)</i>
Generation (thermal)	Water volumes abstracted and returned at entry and exit points of each power plant	<p>Flow meters transfer water volumes automatically from the flowmeters to the PI (process information) system. Water use data is automatically downloaded from this system into excel.</p> <p>For Great Island power station in Ireland, water for cooling is measured using a pump running hours methodology rather than flowmeters as these are not available. This methodology uses the pump performance and pump curve to measure flow rates and has been agreed with the EPA.</p>	<p>For the power stations that use flow meters, if there is a failure in the flowmeter PI system then there is backup process used which involves pump running hours (this takes account of pump performance and the pump curve to measure flow rates) and has been agreed with the Regulators.</p> <p>Data for ROI and NI covers the periods between 1 January and 31 December 2019 and GB covers the periods between 1 April and 31 March 2019/20.</p>
Hydro generation	Water volumes abstracted and returned is the water that passes through the hydro generation turbine at the SSE power station	<p>Volumes of water abstracted and returned are measured via telemetry. The telemetry system collects and records the input data (which is based on the water head (the intake and the loch level) and the power generation) to estimate the volume of water that passes through a turbine each time.</p> <p>The input data uses the power generated to calculate the flow of water that would have been required (and so effectively uses the turbine as a flowmeter).</p>	
Non-operational offices and buildings	Water	<p>Non-operational buildings are classed as offices, depots, warehouses, call centres and shops. There are around 200 non-operational sites. Only 21 sites out of the 200 have water meters. Over 75% of the water consumption is from these 21 key non-operational sites.</p> <p>Monthly meter readings are manually recorded at the 16 sites and logged centrally.</p>	<p>Water consumption is based on 21 key properties that are metered which make up over 75% of the water consumption based on non-operational buildings employee occupation.</p>
Generation (thermal) offices and buildings	Water	<p>Monthly meter readings are manually recorded at the sites and logged centrally.</p>	