SSE's Economic Contribution to the UK, Scotland and the Republic of Ireland

FY20 Results
June 2020

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Context, key notes
and assumptions

Context and use of this data

Context

SSE plc ("SSE") has commissioned PwC ("we"/"us") to estimate SSE's gross contribution to the GDP and employment of the UK, Scotland and the Republic of Ireland (Ireland). The results tables in this document provide the final results of the analysis for the financial year ending 31 March 2020 (FY20), along with the results already provided to SSE in previous years' reports (stated in current prices but otherwise unadjusted), and make up the final deliverable as per our Engagement Letter with SSE dated 26 February 2020.

PwC's and SSE's role

SSE provided PwC with input data, profits, wages, employment headcount and expenditure, which we used for our calculations. SSE also provided the geographical location and sector of the economy for the majority (over 90%) of their spend in FY20 using their professional judgement and published guidance from statistics authorities. We used this data, as well as data from statistics authorities, as inputs to estimate SSE's economic contribution, using economic models built by us.

We have not tested or audited any of the data provided by SSE, or data obtained from statistics authorities that have been used within the models. We provide no assurance over these data or any outputs based on these data.

Use of this data

This document has been prepared for SSE plc in accordance with the terms of our Engagement Letter dated 26 February 2020.

We do not accept or assume any liability or duty of care for any other purpose or to any other person to whom this document is shown or into whose hands it may come save where expressly agreed by us giving our prior consent in writing.

Key notes and assumptions

Data treatment

- SSE provided all data related to its business. We obtained other inputs for our modelling from statistics authorities.

- We have used these data in our analysis, but we have not tested any of these input data and so do not provide any assurance over them.

- SSE used its judgement to map the majority (over 90%) of its supplier expenditure to the relevant sector of the economy and the geographical location of the supplier.

- As agreed with SSE, we apportioned all remaining expenditure using the proportional distribution of the mapped expenditure, to obtain total expenditure by sector and country. It's possible that a great proportion of the smaller suppliers which weren't mapped by SSE were based in the UK or Republic of Ireland creating a relatively lower economic impact in these countries, which would disproportionately impact the results of some of SSE's business units.

- SSE also provided data on employment headcount, profits and wages from its annual accounts.

- The data provided by SSE are for the financial year 1 April 2019 to 31 March 2020. The data that underpins our economic model, as well as those used to contextualise our estimates, are measured on a calendar year basis. We denote financial year data as FY[yy] (where yy denotes the end of the period) and calendar year data as 20[yy]. When comparing financial years to calendar years, we use 2011 for FY12, 2012 for FY13, 2013 for FY14, 2014 for FY15, 2015 for FY16, 2016 for FY17, 2017 for FY18, 2018 for FY19 and 2019 for FY20.

Key notes and assumptions

Data treatment (continued)

- In order to ensure consistency between our model and SSE's financial data, we have adjusted past values so that they are measured in comparable prices. All financial data received from SSE reflect the prices paid or received for goods and services during FY20. Ideally, to account for price changes that have occurred since the year of the national statistics that we use and SSE's financial data, we would adjust past values to the average price level of FY20. However, due to time lags in the provision of data, price level data are not available for the first quarter of 2020 at the time of analysis. Therefore, we adjust past values to 2019 prices using the GDP deflator for the relevant country. For convenience, we refer to this approximately equivalent price level as "current prices". The previous estimates of SSE's economic contribution between FY12 and FY19, which are also presented in this document, have be adjusted to current prices in the same way.

- To contextualise SSE's estimated economic contribution we use national GDP and employment data from statistics authorities. 2019 data are not yet available for all the relevant statistics. Consequently, where 2019 data are not available SSE's estimated economic contribution in FY20 is compared to statistics from the latest year for which data are available. GDP data are inflated to current prices. This means that the impact of COVID-19 on the UK economy is not captured.

- A significant share of SSE's purchases relate to commodity trading. As agreed with SSE, we have only included SSE's net expenditure on energy commodities, as this best measures the economic contribution of the company. For financial instruments, we have only included the commission paid by SSE, for the same reason.

Key notes and assumptions

Data treatment (continued)

• Part of SSE's expenditure is Feed-In Tariff (FIT) payments. These are subsidies to renewable energy generators required by Ofgem based on their share of the retail market. SSE pays these subsidies directly to generators and also indirectly via balancing payments administered by Ofgem. SSE has mapped FIT expenditure as payments to the UK Public Administration and Defence sector, consistent with previous economic contribution reports published by SSE. However, this is a simplification as these payments are eventually distributed across a range of generators who operate across a variety of sectors. This simplification has been made because the available information about the recipients of FIT was limited. In future, the accuracy of the results would be improved if more specific data became available. For the FY15 analysis we tested the sensitivity of our results to this specific approach, and found that alternative assumptions about the sectors of the economy in receipt of FIT payments could change the total UK employment contribution by up to 3% and up to 1.5% for the UK GDP contribution. However, in the absence of more reliable information on the specific beneficiaries of SSE's FIT payments, we have agreed with SSE that the current approach is a reasonable way to treat FIT transactions for the purposes of this analysis and is consistent with previous years' analyses.

Key notes and assumptions

Modelling methodology

- We have used Input-Output Analytical Tables and employment statistics from the UK Office for National Statistics (ONS), Ireland's Central Statistics Office (CSO) and the Scottish Government to create economic models that we have used, in conjunction with the data provided by SSE, to estimate SSE's indirect and induced economic contribution.

- All of the analysis is presented in 'gross' terms. We have not assessed the 'net' contribution of SSE to the economy (i.e. we have not considered what would have happened in the economy if SSE did not exist).

- SSE is a group of companies and we have excluded any transactions between the individual companies that make up the group to avoid double-counting contributions. Procurement by SSE subsidiaries is included in the analysis.

- Employment and GVA are different indicators that are driven by the same underlying economic activity. They should not be considered as additional to each other.

Key notes and assumptions

Modelling methodology (continued)

- We have used three stand-alone models to estimate SSE's economic contribution in the UK, Scotland and Ireland. These models are not linked and the results presented are, therefore, only related to the direct expenditure in each geography. They do not take into account feedback loops between geographies. For example, if SSE within Scotland purchases goods from an English supplier, and that English supplier sources goods from Scotland to enable it to meet SSE's demand, this additional spending in Scotland is not captured. The results, therefore, represent a conservative estimate of SSE's economic contribution (particularly in Scotland). For this reason, SSE's contribution in England, Wales and Northern Ireland cannot be derived by calculating the difference between the results for the UK and Scotland.

- The estimated economic contribution for UK, Scotland and Ireland is based on total SSE expenditure in these regions. For example, the economic contribution for Ireland reflects the purchases of the entire SSE Group from suppliers within Ireland, not just the purchases made by SSE Ireland.

Key notes and assumptions

Modelling methodology (continued)

- For the FY20 analysis, we have used the FY20 average exchange rate to convert all foreign currency transactions. This approach is consistent with the principles outlined in International Accounting Standard 21 'The effects of changes in foreign exchange rates'. Results from our analysis relating to previous years use the average exchange rate for the relevant year.

- SSE's UK direct GVA is apportioned to Scotland based on Scotland's share of SSE's UK wage payments, as agreed with SSE.

- For several years it was agreed with SSE that we would not update the Input-Output tables with newer released versions to maintain consistency between annual analysis. However, after seven financial years of analysis, for FY19 SSE requested the most recent tables were used to ensure greater accuracy in its economic contribution results. In 2018, the Scottish Government released a new Input-Output table for 2015. In 2018, the UK released a new Input-Output table for 2014. In 2018, Ireland released a new Input-Output table for 2015. These are the tables that were included in the FY19 analysis and subsequently for the FY20 analysis this year. A consequence of this is that the FY20 results are not directly comparable for previous years other than FY19.

- A full description of modelling methodology is available in the FY16 report of SSE's economic contribution(1).

1. http://sse.com/media/407622/FY16-UK-Scotland-and-Republic-of-Ireland.pdf

Key changes to FY20 notes and assumptions

Modelling methodology

- This year, in addition to estimating the economic contribution of SSE Group, and SSE Group less SSE Energy Services, SSE requested that we also provide breakdowns by entity for the following specific business units: SSE Renewables, SSE Thermal, SSEN Distribution and SSEN Transmission. The results by entity have been included as an appendix to this report.

- On 15th January 2020, SSE completed the sale of SSE Energy Services Group Limited ("SSE Energy Services"), its household energy and services business in GB, to OVO Energy Limited ("OVO"). In addition to estimating SSE's gross contribution to the GDP and employment of the UK, Scotland and the Republic of Ireland, SSE plc ("SSE") has commissioned PwC ("we"/"us") to estimate the gross contribution of the SSE Group, less SSE Energy Services, to the GDP and employment of the UK.

- SSE also requested a breakdown of the top 5 industries in SSE's supply chain contributing GDP and employment. This is derived from SSE's procurement spend data, and provided in the body of the report.

- In previous years, profit data included exceptionals and remeasurements. Following a number of major transactions by the SSE Group over FY19 and FY20 which resulted in significant swings and volatility in these figures, it was agreed with SSE that the profit data included in the analysis for FY20 should use adjusted profits which exclude exceptionals and remeasurements. This change in methodology aims to ensure a more consistent approach with SSE's other reporting of its annual financial performance and provide a fairer reflection of SSE's direct economic contribution.

Key changes to FY20 notes and assumptions

Treatment of Joint Ventures

- As per prior years, where possible, we have included SSE's share of the procurement and profit for its Joint Ventures. For example, SSE owns 40% of Beatrice Offshore Windfarm Limited (BOWL) but manages 100% of BOWL's procurement spend on behalf of the joint venture. Consequently we consolidated 40% of the value of Beatrice's spend for FY20 into the analysis. SSE also included 40% of the profits from Beatrice into their profit data set. This approach was taken for all Joint Ventures where SSE manages the procurement and has data available. SSE's Joint Ventures are listed in the SSE Annual Report 2020.

- This year, in order to fully capture SSE's contribution to the economy, we have attempted to include purchases made by the SSE Group from SSE's Joint Ventures at the percentage not owned by SSE Group. For example, where SSE Group has purchased from BOWL, we have included this at 60%. This is consistent with the approach taken for purchases made by the SSE Group with other external entities (though these are captured at 100%) and means that increased spend on external entities is now being captured in the analysis. These figures were previously excluded from our analysis in prior years. This approach will be applied going forward now that SSE Group's business model is transitioning into entering into more Joint Ventures than previously.

- Where a different organisation in the Joint Venture manages the procurement and SSE doesn't have the data available, any economic impacts from procurement by the Joint Ventures which could be assigned to SSE are excluded. However, SSE has included their share of the profits from the Joint Venture in their profit data set.

External data sources

- SSE's direct contribution to GDP is estimated from data contained in its financial accounts, which are prepared on an accruals basis for the financial year. For a more detailed description of the approach used in this section, please refer to Appendix C in this report.

- Average output per employee is defined as Gross Value Added per employee.

- UK and Scotland national labour source: ONS, PwC analysis. UK or Scottish average defined as the unweighted average of all UK or Scottish sectors.

- UK and Scotland national employment source: Business Register and Employment Survey ("BRES"), PwC analysis.

- UK and Scotland GDP source: Office for National Statistics (ONS), PwC analysis. GDP measured at factor cost, which we have adjusted to current prices using the GDP deflator, for consistency.

- Ireland national labour source: Central Statistics Office (CSO). Irish average defined as the unweighted average of all Irish sectors.

- Ireland national employment source: CSO, PwC analysis.

- Ireland GDP source: CSO, PwC analysis. GDP measured at factor cost, which we have adjusted to current prices using the GDP deflator, for consistency.

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Results
SSE Group

SSE Group

Key information for interpreting the results

- The **total** result is the sum of the direct, indirect and induced results

- The **direct** results are taken from the financial data provided

- The **indirect** results are driven by the quantity of procurement spending (with some multiplicative effect)

- The **induced** results are driven by the quantity of procurement spending and the wage spend (~ proportional to headcount)

Overall results

	GVA (£m)				Employment			
	Direct	**Indirect**	**Induced**	**Total**	**Direct**	**Indirect**	**Induced**	**Total**
UK	2,960	3,720	1,060	7,740	18,700	32,660	9,970	83,040
Scotland*	1,140	254	42	1,437	6,730	3,230	570	10,530
RoI	182	412	56	650	830	2,170	740	3,740
Total UK and RoI	3,142	4,132	1,116	8,389	19,530	51,170	16,080	86,780

Please see note on results on page 26 of this report.

* Please note that the Scotland results are also included within the UK results

SSE's contribution to the UK & ROI economy in FY20

		Direct	Indirect	Induced	Total*
UK & RoI	**Results**				
	GVA (£bn)	3.14	4.13	1.12	8.39
	Employment (number of jobs)	19,530	51,170	16,080	86,780
	SSE GVA multiplier				2.6
	SSE employment multiplier				4.4

* Please note that due to rounding some of the figures may not sum to the number in the Total column. Employment figures are rounded to the nearest 10 jobs.

SSE's contribution to the UK economy in FY20

UK		Direct	Indirect	Induced	Total*
Results					
GVA (£bn)		2.96	3.72	1.06	7.74
Employment (number of jobs)		18,700	49,000	15,340	83,040
SSE GVA multiplier					2.6
SSE employment multiplier					4.4
Contextual metrics					
SSE labour productivity (£GVA per employee)		158,050			
UK national labour productivity		61,540			
Ratio of SSE's labour productivity to the UK's national labour		2.6			
SSE supported employment as % of UK employment		0.1	0.2	0	0.3
SSE contribution to GDP as % of UK GDP		0.2	0.2	0.1	0.5

* Please note that due to rounding some of the figures may not sum to the number in the Total column. Employment figures are rounded to the nearest 10 jobs.

SSE's historic contribution to the UK economy

		Direct	Indirect	Induced	Total*
GVA (£bn current prices)					
	FY20	2.96	3.72	1.06	7.74
	FY19	2.81	4.48	1.77	9.06
	FY18	3.09	4.22	1.59	8.90
	FY17	3.73	4.43	1.66	9.82
	FY16	2.86	4.90	1.84	9.60
	FY15	2.92	4.91	1.74	9.57
	FY14	2.54	5.62	1.85	10.01
	FY13	2.61	5.84	1.80	10.25
	FY12	2.29	5.68	1.85	9.82
UK	**Employment (number of jobs)**				
	FY20	18,700	49,000	15,340	83,040
	FY19	19,610	55,580	25,980	101,170
	FY18	20,060	52,370	26,570	99,000
	FY17	20,450	55,150	28,120	103,720
	FY16	20,370	62,340	30,930	113,640
	FY15	19,150	57,800	29,370	106,320
	FY14	19,090	62,340	30,520	111,950
	FY13	19,170	63,730	29,330	112,230
	FY12	18,900	67,690	29,810	116,400

* Please note that due to rounding some of the figures may not sum to the number in the Total column. Employment figures are rounded to the nearest 10 jobs.

SSE's contribution to the Scotland economy in FY20

Scotland		Direct	Indirect	Induced	Total*
Results					
	GVA (£m)	1,140	254	42	1,436
	Employment (number of jobs)	6,730	3,230	570	10,530
	SSE GVA multiplier				1.3
	SSE employment multiplier				1.6
	Contextual metrics				
	SSE labour productivity (£GVA per employee)	169,440			
	Scotland's national labour productivity	56,390			
	Ratio of SSE's labour productivity to Scotland's national labour	3.0			
	SSE supported employment as % of Scottish employment	0.3	0.1	0	0.4
	SSE contribution to GDP as % of Scottish GDP	0.8	0.2	0.0	1.0

* Please note that due to rounding some of the figures may not sum to the number in the Total column. Employment figures are rounded to the nearest 10 jobs.

SSE's historic contribution to the Scotland economy

		Direct	Indirect	Induced	Total*
GVA (£m current prices)					
	FY20	1,140	254	42	1,436
	FY19	1,085	337	198	1,620
	FY18	1,198	488	206	1,892
	FY17	1,377	441	196	2,014
	FY16	1,039	444	201	1,684
	FY15	1,009	391	194	1,594
	FY14	940	399	194	1,533
	FY13	860	537	185	1,582
	FY12	747	375	162	1,285
Employment (number of jobs)					
	FY20	6,730	3,230	570	10,530
	FY19	7,320	4,460	2,700	14,480
	FY18	7,530	6,800	3,030	17,360
	FY17	7,380	6,700	2,920	17,000
	FY16	7,240	7,070	2,980	17,290
	FY15	6,410	7,630	3,690	17,730
	FY14	6,910	6,530	3,570	17,010
	FY13	6,060	7,210	3,610	16,880
	FY12	5,930	5,940	3,140	15,010

(Left side vertical label: Scotland)

* Please note that due to rounding some of the figures may not sum to the number in the Total column. Employment figures are rounded to the nearest 10 jobs.

SSE's contribution to the Republic of Ireland economy in FY20

		Direct	Indirect	Induced	Total*
	Results				
	GVA (€m)	182	412	56	650
	Employment (number of jobs)	830	2,170	740	3,740
	SSE GVA multiplier				3.6
	SSE employment multiplier				4.5
	Contextual metrics				
	SSE labour productivity (€GVA per employee)	218,400			
	Ireland's national labour productivity	125,350			
	Ratio of SSE's labour productivity to Ireland's national labour	1.7			
	SSE supported employment as % of Irish employment	0.0	0.1	0.0	0.1
	SSE contribution to GDP as % of Irish GDP	0.0	0.1	0.0	0.1

(Republic of Ireland)

* Please note that due to rounding some of the figures may not sum to the number in the Total column. Employment figures are rounded to the nearest 10 jobs.

SSE's historic contribution to the RoI economy

		Direct	Indirect	Induced	Total*
GVA (€m current prices)					
	FY20	182	412	56	650
	FY19	237	381	71	689
	FY18	212	510	96	818
	FY17	162	539	94	795
	FY16	165	560	89	814
	FY15	175	720	103	998
	FY14	199	699	104	1002
	FY13	91	674	84	849
	FY12	91	621	78	790
Employment (number of jobs)					
	FY20	830	2,170	740	3,740
	FY19	760	2,330	990	4,090
	FY18	720	2,870	930	4,520
	FY17	710	3,020	990	4,720
	FY16	750	3,030	1,140	4,920
	FY15	820	3,240	1,330	5,390
	FY14	800	3,130	1,400	5,330
	FY13	620	2,770	1,120	4,510
	FY12	590	2,580	1,030	4,200

Republic of Ireland

* Please note that due to rounding some of the figures may not sum to the number in the Total column. Employment figures are rounded to the nearest 10 jobs.

Top 5 industries in SSE's supply chain

The below tables show a breakdown of the top 5 industries in SSE's supply chain contributing GDP and employment.

UK	
Electricity, transmission and distribution	19%
Gas; distribution of gaseous fuels through mains; steam and air conditioning supply	9%
Construction	9%
Public administration and defence services; compulsory social security services	5%
Office administrative, office support and other business support services	5%
Other industries	54%
Total	**100%**

Scotland	
Construction	30%
Business support services	19%
Other professional services	10%
Gas etc	3%
Public administration & defence	3%
Other industries	35%
Total	**100%**

RoI	
Electricity and gas supply	72%
Security, office and business support activities	4%
Public administration	4%
Rental and leasing activities	4%
Repair and installation of machinery and equipment	2%
Other industries	14%
Total	**100%**

Note on results

- The two factors detailed below were the primary drivers of the decrease in the economic contribution SSE made between financial years 2018/19 and 2029/20:

    - SSE's capital procurement spend is driven by the cyclical nature of large capital projects in Renewables and Networks developments, which due to the long term nature of projects can result in peaks and troughs in any given year. FY 19/20 saw a drop in recorded spend due to the completion of significant projects like Beatrice Offshore Wind Farm and the Caithness Moray HVDC project which had been running in parallel over the preceding two years. Projects of this size and scale take a considerable time to move through the respective opportunity, development and construction phases and are also heavily influenced by corresponding regulatory approvals. That being the case it is not always possible, or prudent given prevailing competition for capex, to line up a series of projects of this size and scale to run consecutively which ultimately could have an effect on economic impact in a particular 12 month period.

    - In 2019/20 there was also a reduction in the volume of energy traded, represented by a reduction of procurement data within the EIMS database, resulting in a decreased indirect and induced economic impact for the SSE Group. Furthermore, EIMS input data was also reduced by the amended mapping of PwC codes and the handling of Joint Venture procurement data.

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Appendix C: Detailed approach

Economic contribution approach (1/7)

Overview

SSE's economic contribution is defined in terms of its contribution to GDP and employment supported.

Contribution to GDP is measured in terms of Gross Value Added (GVA). GVA is a monetary measure of the value a company adds during its production process. Hence, it is the difference between the price of its products (outputs) and the price of the inputs it uses in producing these (or intermediate consumption). GVA is an alternative term for GDP at factor cost, which is GDP before taxes and subsidies on products. As such, GVA is the company-level equivalent of GDP.

The contribution to GDP and employment is estimated at the direct, indirect and induced levels. The direct contribution results from the company's own operations: it includes the people employed directly by a company and the economic value the company creates. The indirect contribution is generated in a company's supply chain through the procurement of inputs. The induced contribution is generated through the spending by employees throughout the value chain from their earnings. It includes both SSE's own employees and those within its supply chain.

SSE provided us with the input data to estimate its direct economic contribution. We also relied upon data from various statistics authorities to build the economic Input-Output models used in our calculations (as described on the following pages). We did not carry out any testing of, and do not provide any assurance over, the underlying data provided by SSE or obtained from the other external sources, and hence do not provide any assurance over outputs based on such data.

Approach to estimating direct economic contribution

We estimate SSE's direct contribution to GDP using an income approach from data contained in its financial accounts that are prepared on an accruals basis for the financial year (rather than relating to the cash spent during the year). The following equation is used:
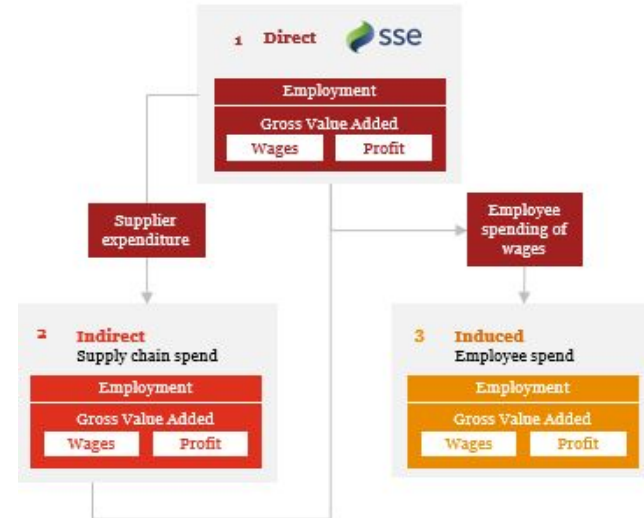
Direct contribution to GDP
= profit before interest and taxation + employee costs + depreciation + amortisation.

These data are provided by SSE for the UK and Ireland. SSE do not provide separate financial data for Scotland and therefore it was agreed with SSE to apportion a share of SSE's direct contribution to UK GDP to Scotland on the basis of employee compensation.

Direct employment is taken directly from SSE's human resources data. The breakdown by country and nation is based on the home address of its employees.

A more detailed explanation of our approach can be found on the following pages.

Figure 1: The relation between the three levels of economic contribution

Economic contribution approach (2/7)

The indirect and induced economic contributions are estimated using an Input-Output model which describes how different industries in the economy relate to each other. On this basis we can estimate how activity by one company stimulates activity elsewhere in the economy.

SSE's indirect (or supply chain) contribution is estimated using its procurement data. SSE gathered and provided data from its accounts which it analysed to identify the sectors of the economy from which it purchases its inputs. The Input-Output tables show how much a typical business in each supplier's sector requires to produce one unit of output. Equally, it shows what inputs are required from other sectors to produce one unit of its own output. In this way we can estimate SSE's input requirements through the entire supply chain and estimate the total value of production stimulated. This process of one company stimulating economic activity in other companies is referred to as the multiplier effect.

In addition to the above, an Input-Output table provides data on the share of revenue that constitutes profit and wages for each sector. We apply this ratio to the total production value stimulated to estimate the total GVA in the supply chain by sector. We also use government statistics on employment in each sector to estimate the total employment associated with SSE's activity. We derive the average output per head by sector and apply this to the total production value stimulated in each sector in the supply chain. In this way, we estimate the indirect employment supported by SSE.

These steps are repeated to estimate the induced contribution, but through using wage data to estimate how much production is stimulated in the supply chain that supports the products employees buy, e.g. accommodation, food and entertainment.

The data sources used for our modelling are described on the following pages.

Figure 2: A simplified version of an Input-Output table, the basis for an Input-Output model

	Agriculture	Manufacturing	Transport	Retail	Financial services	Household demand	Gov't demand	Gross capital formation	Export demand	Total demand
Agriculture										100
Manufacturing	10								20	
Transport										
Retail										
Financial services					50					
Imports										
Taxes minus subsidies										
Employee wages			20							
Gross operating surplus										
Total output	100									

Intermediate consumption: Agriculture, Manufacturing, Transport, Retail, Financial services

Final consumption: Imports, Taxes minus subsidies, Employee wages, Gross operating surplus

Agricultural companies bought £10m of manufacturing products

Finacial service companies bought £50m of financial services

Manufacturing companies exported £20m

Total demand for agricultural products equal £100m

The total cost of supplying agricultural products (including profits) equals £100

Emplyees in transport earn a total of £20m
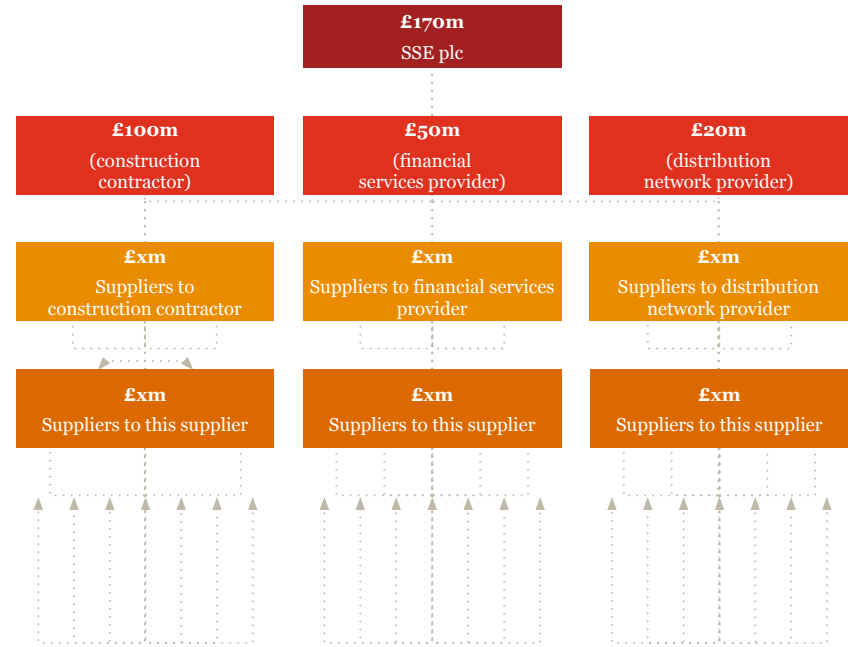
Economic contribution approach (3/7)

Model data sources

The Input-Output models for each geography are based on Input-Output tables provided by the relevant national official statistics offices. These are described in detail on the next page.

Input-Output tables are based on data collected through business surveys undertaken by national statistics offices on an annual basis. We have combined data from the Input-Output tables with employment data for the relevant years to obtain employment to output ratios. These have been updated using estimates for labour productivity and inflation to reflect the time period covered by our assessment. It should be noted that this type of adjustment does not capture structural changes in the economy that occur between the Input-Output table year and the year of analysis. This means that results should be treated with caution for sectors that have changed significantly since the preparation of the most recent Input-Output tables.

SSE provided us with the input data we used to estimate its direct economic contribution. We also relied upon official statistics to build the economic models used in our calculations (as described on the following pages). We did not carry out any testing of, and do not provide any assurance over the underlying data provided by SSE or obtained from any other external source.

Figure 3: A simplified representation of the relationship between SSE and its supply chain (note: hypothetical numbers used below)

Economic contribution approach (4/7)

Country	Source
Table 1: Key data sources	
Input-Output tables	
UK	Office for National Statistics (ONS). UK Input-Output Analytical Tables, 2014
Scotland	Scottish Government. Input-Output Analytical Tables, 2015
Ireland	Central Statistics Office (CSO). Input-Output Tables for Ireland, 2015
Employment data	
UK	ONS. Annual Employment Statistics (UK Business Register and Employment Survey (BRES))
Scotland	Scottish Government. Input-Output Analytical Tables, 2015 and ONS Annual Employment Statistics (BRES)
Ireland	CSO. Quarterly National Household Survey ("QNHS") and Earnings Hours and Employment Costs Survey ("EHECS")
GDP data	
UK	ONS. GVA statistics
Scotland	Scottish Government. Quarterly National Accounts
Ireland	CSO. National Accounts
Inflation data	
UK and Scotland	ONS. GDP deflator
Ireland	International Monetary Fund (IMF). International Financial Statistics database
Labour productivity	
UK and Scotland	ONS. Labour productivity statistics
Ireland	The Organisation for Economic Co-operation and Development (OECD). Productivity statistics
Household income	
UK	ONS. UK Economic Accounts
Scotland	Scottish Government. Input-Output Analytical Tables, 2015
Ireland	CSO. National Accounts
SSE profits, wages, headcount and expenditure data	
All geographies	SSE

Economic contribution approach (5/7)

SSE provided all data related to its business. We obtained other inputs for our modelling from statistics authorities.

We have used these data in our analysis, but we have not tested any of these input data and so do not provide any assurance over them.

SSE used its judgement to map the majority (over 90%) of its supplier expenditure to the relevant sector of the economy and the geographical location of the supplier.

As agreed with SSE, we apportioned all remaining expenditure using the proportional distribution of the mapped expenditure, to obtain total expenditure by sector and country.

SSE also provided data on employment headcount, profits and wages from its annual accounts.

The data provided by SSE are for the financial year 1 April 2019 to 31 March 2020. The data that underpins our economic model, as well as those used to contextualise our estimates, are measured on a calendar year basis. We denote financial year data as FY[yy] (where yy denotes the end of the period) and calendar year data as 20[yy]. When comparing financial years to calendar years, we use 2011 for FY12, 2012 for FY13, 2013 for FY14, 2014 for FY15, 2015 for FY16, 2016 for FY17, 2017 for FY18, 2018 for FY19, and 2019 for FY20.

In order to ensure consistency between our model and SSE's financial data, we have adjusted past values so that they are measured in comparable prices. All financial data received from SSE reflect the prices paid or received for goods and services during FY20. Ideally, to account for price changes that have occurred since the year of the national statistics that we use and SSE's financial data, we would adjust past values to the average price level of FY20. However, due to time lags in the provision of data, price level data are not available for the first quarter of 2020 at the time of analysis. Therefore, we adjust past values to 2019 prices using the GDP deflator for the relevant country. For convenience, we refer to this approximately equivalent price level as "current prices". The previous estimates of SSE's economic contribution between FY12 and FY19 that are presented in this report have be adjusted to current prices in the same way.

To contextualise SSE's estimated economic contribution we use national GDP and employment data from statistics authorities. 2019 data are not yet available for all the relevant statistics. Consequently, where 2019 data are not available SSE's estimated economic contribution in FY20 is compared to the latest year for which data are available. GDP data are inflated to current prices.

A significant share of SSE's purchases relate to commodity trading. As agreed with SSE, we have only included SSE's net expenditure on energy commodities as this best measures the economic contribution of the company. For financial instruments, we have only included the commission paid by SSE, for the same reason.

Part of SSE's expenditure is Feed-In Tariff (FIT) payments. These are subsidies to renewable energy generators required by Ofgem based on their share of the retail market. SSE pays these subsidies directly to generators and also indirectly via balancing payments administered by Ofgem. SSE has mapped FIT expenditure as payments to the UK Public Administration and Defence sector, consistent with previous economic contribution reports published by SSE. However, this is a simplification as these payments are eventually distributed across a range of generators who operate across a variety of sectors. This simplification has been made because the available information about the recipients of FIT was limited. In future, the accuracy of the results would be improved if more specific data became available. For the FY15 analysis we tested the sensitivity of our results to this specific approach, and found that alternative assumptions about the sectors of the economy in receipt of FIT payments could change the total UK employment contribution by up to 3% and up to 1.5% for the UK GDP contribution. However, in the absence of more reliable information on the specific beneficiaries of SSE's FIT payments, we have agreed with SSE that this is a reasonable way to treat FIT transactions for the purposes of this analysis and is consistent with previous years' analyses.

Economic contribution approach (6/7)

Modelling methodology

We have used Input-Output Analytical Tables and employment statistics from the UK Office for National Statistics (ONS), Ireland's Central Statistics Office (CSO) and the Scottish Government to create economic models that we have used, in conjunction with the data provided by SSE, to estimate SSE's indirect and induced economic contribution.

All of the analysis is presented in gross terms. We have not assessed the net contribution of SSE to the economy (i.e. we have not considered what would have happened in the economy if SSE did not exist).

SSE is a group of companies and we have excluded any transactions between the individual companies that make up the group to avoid double-counting contributions.

Where possible, we have included SSE's share of the procurement and profit for its Joint Ventures. For example, SSE owns 40% of Beatrice Offshore Windfarm Limited (BOWL) but manages 100% of BOWL's procurement spend on behalf of the joint venture. Consequently we consolidated 40% of the value of Beatrice's spend for FY20 into the analysis. SSE also included 40% of the profits from Beatrice into their profit data set.

In order to fully capture SSE's contribution to the economy, we have attempted to include purchases made by SSE Group from SSE's Joint Ventures at the percentage not owned by SSE Group. For example, where SSE Group has purchased from BOWL, we have included this at 60%. These figures were previously excluded from our analysis in prior years. This approach will be applied going forward.

Where a different organisation in the Joint Venture manages the procurement and SSE doesn't have the data available, any economic impacts from procurement by the Joint Ventures which could be assigned to SSE are excluded. However, SSE has included their share of the profits from the Joint Venture in their profit data set.

Employment and GVA are different indicators that are driven by the same underlying economic activity. They should not be considered as additional to each other.

We have used three stand-alone models to estimate SSE's economic contribution in the UK, Scotland and Ireland. These models are not linked and the results presented are, therefore, only related to the direct expenditure in each geography. They do not take into account feedback loops between geographies. For example, if SSE within Scotland purchases goods from an English supplier, and that English supplier sources goods from Scotland to enable it to meet SSE's demand, this additional spending in Scotland is not captured. The results, therefore, represent a conservative estimate of SSE's economic contribution (particularly in Scotland). For this reason, SSE's contribution in England, Wales and Northern Ireland cannot be derived by calculating the difference between the results for the UK and Scotland.

The estimated economic contribution for UK, Scotland and Ireland is based on total SSE expenditure in these regions. For example, the economic contribution for Ireland reflects the purchases of the entire SSE Group from suppliers within Ireland, not just the purchases made by SSE Ireland.

For the FY20 analysis, we have used the FY20 average exchange rate to convert all foreign currency transactions. This approach is consistent with the principles outlined in International Accounting Standard 21 '*The effects of changes in foreign exchange rates*'. Results from our analysis relating to previous years use the average exchange rate for the relevant year.

SSE's UK direct GVA is apportioned to Scotland based on Scotland's share of SSE's UK wage payments, as agreed with SSE.

Any summation of the estimates of SSE's contribution to GDP, across the 9 years of analysis, should consider applying a discount rate to account for changes in society's time preference for money.

Economic contribution approach (7/7)

Table 2: Key definitions	
Indicators	**Definition**
Model indicators	
GVA	GVA is a measure of the value generated in the economy and represents the difference between the value of goods and services sold and the goods and services used as an input to their production. Hence, it is the company-level equivalent of GDP: adding up the GVA of all individual companies in the economy is equivalent to a country's GDP after adjusting for taxes and subsidies on products, which are components of GDP that are not included in the calculation of GVA.
Employment	Employment supported: expressed as number of jobs (headcount).
Multipliers	GVA multiplier: total GVA (direct + indirect + induced) for every £1 or €1 of GVA generated directly by SSE. Employment multiplier: total employment (direct + indirect + induced) for every job supported directly by SSE.
Contextual metrics	
Labour productivity	SSE's labour productivity is defined as SSE's direct GVA per employee (based on headcount). National labour productivity is defined as national GVA divided by national employment. National labour productivity was calculated using data from the most recent year where both employment and GVA data was available. The GVA data was then adjusted to current prices.
SSE contribution to GDP as % of national GDP	SSE's contribution to national GDP as a percentage of total GDP at factor costs. For the UK we used 2019 GDP data, for Scotland we used 2018 data and for Ireland we used 2015 data (the most recent available) adjusted to current prices using GDP deflator data from the IMF.
SSE supported employment as % of national employment	Total employment supported by SSE as a percentage of national employment. We used 2017 employment data (the latest available) for the UK, Scotland and Ireland.