SSE's Economic Contribution to the UK, Scotland and the Republic of Ireland
FY18 Results

May 2018

pwc

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 2018 (FY18), 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 22 February 2018.

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 the companies with which they spent their money in FY18 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 22 February 2018.

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.

- 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 2017 to 31 March 2018. 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 and 2017 for FY18.

- 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 FY18. 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 FY18. However, due to time lags in the provision of data, price level data are not available for the first quarter of 2018 at the time of analysis. Therefore, we adjust past values to 2017 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 FY17, which are also presented in this document, have be adjusted to current prices in the same way.

Key notes and assumptions

Data treatment (continued)

- To contextualise SSE's estimated economic contribution we use national GDP and employment data from statistics authorities. 2017 data are not yet available for all the relevant statistics. Consequently, where 2017 data are not available SSE's estimated economic contribution in FY18 is compared to statistics from 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 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.

- Our analysis does not cover SSE's Joint Ventures and Associates, as defined in SSE's annual accounts, unless they are suppliers to SSE, in which case they are treated like other suppliers in the analysis (with the exception of the Beatrice Offshore Windfarm Joint Venture, see below). SSE's subsidiaries are included in the analysis.

- Construction of the Beatrice Offshore Windfarm, by the Beatrice Offshore Windfarm Joint Venture, commenced in FY17. This Joint Venture is 40% owned by SSE. During FY18, SSE managed 100% of Beatrice's procurement spend and, each quarter, was reimbursed by its infrastructure partners to the value of 60% of the expenditure from the previous quarter. In order to fully capture SSE's contribution to the economy through this procurement, it was agreed to consolidate 40% of the value of Beatrice's spend, for FY18, into the analysis. This was on the understanding that these transactions between SSE and Beatrice are not captured elsewhere 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.

- For the FY18 analysis, we have used the FY18 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.

- Since the FY16 analysis was carried out, the Scottish Government has released a new Input-Output table for 2014, updating the 2012 table. The UK has also released a new Input-Output table for 2014, updating the 2010 table. It was agreed with SSE that we would not use these new tables for the FY18 analysis. Whilst this provides consistency between the FY16 and FY18 analyses, continuing to use the earlier tables means that the analysis does not capture any changes in the structures of the UK and Scottish economies that may have occurred between 2010/2012 and 2014.

Results tables

SSE's contribution to the UK economy in FY18

		Direct	Indirect	Induced	Total*
UK	**Results**				
	GVA (£bn)[1]	2.97	4.05	1.53	8.55
	Employment (number of jobs)	20,060	52,370	26,570	99,000
	SSE GVA multiplier				2.9
	SSE employment multiplier				4.9
	Contextual metrics				
	SSE labour productivity (£GVA per employee)[2]	148,120			
	UK national labour productivity[3]	57,350			
	Ratio of SSE's labour productivity to the UK's national labour productivity	2.6			
	SSE supported employment as % of UK employment[4]	0.1	0.2	0.1	0.3
	SSE contribution to GDP as % of UK GDP[5]	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.

1. 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. This year, the financial accounts data used in the analysis are pre-audit. For a more detailed description of the approach used in this section, please refer to Appendix 1 in this report.
2. Average output per employee is defined as Gross Value Added per employee.
3. Source: Office for National Statistics (ONS), PwC analysis. UK average defined as the unweighted average of all UK sectors.
4. Source: Business Register and Employment Survey ("BRES"), PwC analysis.
5. Source: ONS, PwC analysis. GDP measured at factor cost.

SSE's historic contribution to the UK economy

		Direct	Indirect	Induced	Total*
UK	**GVA (£bn current prices)**				
	FY18	2.97	4.05	1.53	8.55
	FY17	3.59	4.26	1.59	9.45
	FY16	2.75	4.70	1.77	9.22
	FY15	2.80	4.71	1.66	9.17
	FY14	2.43	5.39	1.77	9.59
	FY13	2.50	5.60	1.73	9.82
	FY12	2.19	5.44	1.77	9.40
	Employment (number of jobs)				
	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 FY18

		Direct	Indirect	Induced	Total*
Scotland	**Results**				
	GVA (£m)[1]	1,152	469	198	1,819
	Employment (number of jobs)	7,530	6,800	3,030	17,360
	SSE GVA multiplier				1.6
	SSE employment multiplier				2.3
	Contextual metrics				
	SSE labour productivity (£GVA per employee)[2]	152,890			
	Scotland's national labour productivity[3]	52,570			
	Ratio of SSE's labour productivity to Scotland's national labour productivity	2.9			
	SSE supported employment as % of Scottish employment[4]	0.3	0.3	0.1	0.7
	SSE contribution to GDP as % of Scottish GDP[5]	0.9	0.4	0.1	1.4

* 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.

1. 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. This year, the financial accounts data used in the analysis are pre-audit. For a more detailed description of the approach used in this section, please refer to Appendix 1 in this report.

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

3. Source: ONS, PwC analysis. Scottish average defined as the unweighted average of all Scottish sectors.

4. Source: BRES, PwC analysis.

5. Source: ONS, PwC analysis. GDP measured at factor cost, which we have adjusted to current prices using the GDP deflator, for consistency.

SSE's historic contribution to the Scotland economy

Scotland		Direct	Indirect	Induced	Total*
	GVA (£m current prices)				
	FY18	1,152	469	198	1,819
	FY17	1,324	424	189	1,937
	FY16	998	426	193	1,617
	FY15	968	376	186	1,530
	FY14	901	382	186	1,469
	FY13	824	514	177	1,515
	FY12	715	359	155	1,230
	Employment (number of jobs)				
	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

* 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 FY18

Republic of Ireland		Direct	Indirect	Induced	Total*
	Results				
	GVA (€m)[1]	209	502	95	806
	Employment (number of jobs)[2]	720	2,870	930	4,520
	SSE GVA multiplier				3.9
	SSE employment multiplier				6.4
	Contextual metrics				
	SSE labour productivity (€GVA per employee)[3]	289,610			
	Ireland's national labour productivity[4]	123,490			
	Ratio of SSE's labour productivity to Ireland's labour productivity	2.3			
	SSE supported employment as % of Irish employment[5]	<0.1	0.1	<0.1	0.2
	SSE contribution to GDP as % of Irish GDP[6]	0.1	0.2	<0.1	0.3

* 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.
1. 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. This year, the financial accounts data used in the analysis are pre-audit. For a more detailed description of the approach used in this section, please refer to Appendix 1 in this report.
2. Please note that we look at the overall contribution of SSE's to Ireland, which includes procurement from the UK business. This does not reflect the multiplier effect of Irish operations only.
3. Average output per employee is defined as Gross Value Added per employee.
4. Central Statistics Office (CSO). Irish average defined as the unweighted average of all Irish sectors.
5. Source: CSO, PwC analysis.
6. Source: CSO, PwC analysis. GDP measured at factor cost, which we have adjusted to current prices using the GDP deflator, for consistency.

SSE's historic contribution to the Republic of Ireland economy

Republic of Ireland		Direct	Indirect	Induced	Total*
	GVA (€m current prices)				
	FY18	209	502	95	806
	FY17**	158	527	91	776
	FY16**	163	552	88	802
	FY15**	172	708	101	981
	FY14**	195	686	102	983
	FY13**	89	660	82	831
	FY12**	89	607	76	772
	Employment (number of jobs)				
	FY18	720	2,870	930	4,520
	FY17	710	3,020	990	4,720
	FY16	750	3,030	1,140	4,910
	FY15	820	3,240	1,330	5,380
	FY14	800	3,130	1,400	5,340
	FY13	620	2,770	1,120	4,500
	FY12	590	2,580	1,030	4,200

* 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 GDP in the Republic of Ireland during previous years are stated in current prices, using the IMF's GDP deflators. This has also been done for SSE's contribution to UK and Scottish GDP, to report results across different years in a consistent way, to aid comparability. This does not represent any change or restatement in the size of the contribution, although it does mean that the same years' estimate is a different 'nominal' value to that reported in previous years. For the Republic of Ireland, these nominal values are different to those reported last year, due to revisions of Ireland's National Accounts http://www.imf.org/external/pubs/cat/longres.aspx?sk=44140.0.

Appendix 1 - 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:
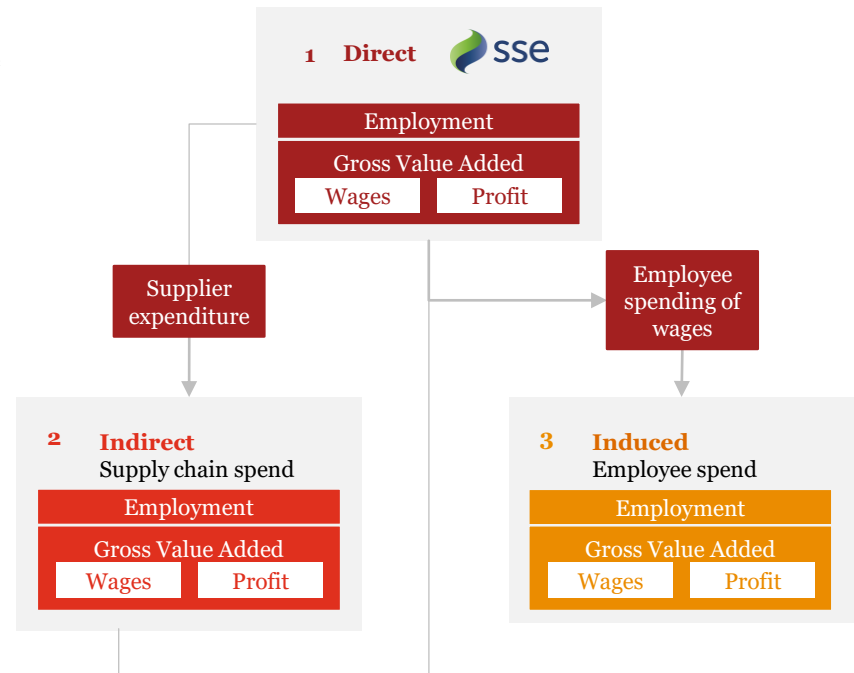
> **Direct contribution to GDP**
> = profit before interest and taxation + employee costs
> + depreciation + amortisation.

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)

Approach to estimating indirect and induced economic contribution

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

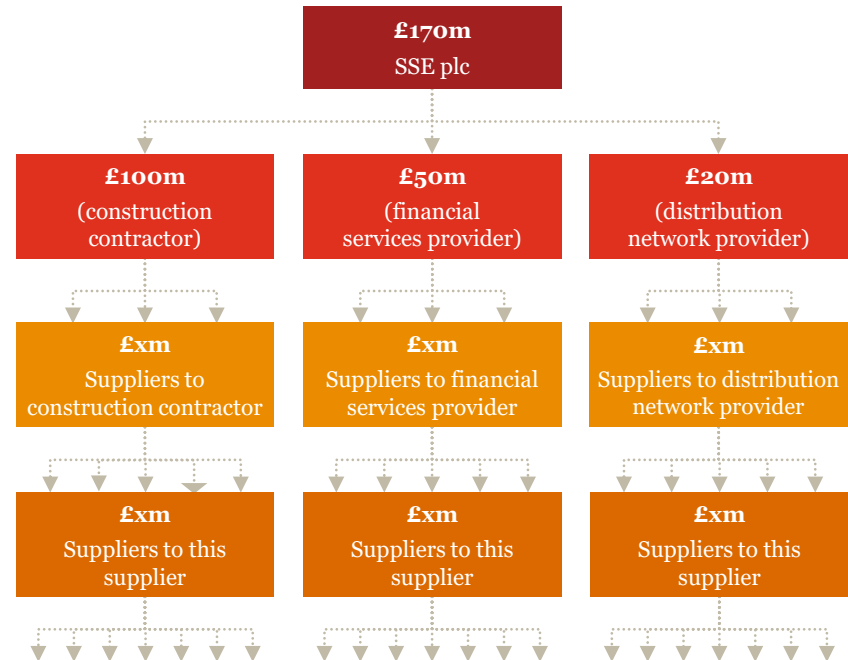# *Economic contribution approach (3/7)*

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)

Table 1: Key data sources	
Country	**Source**
Input-Output tables	
UK	Office for National Statistics (ONS). UK Input-Output Analytical Tables, 2010
Scotland	Scottish Government. Input-Output Analytical Tables, 2012
Ireland	Central Statistics Office (CSO). Input-Output Tables for Ireland, 2011
Employment data	
UK	ONS. Annual Employment Statistics (UK Business Register and Employment Survey (BRES))
Scotland	Scottish Government. Input-Output Analytical Tables, 2012 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, 2012
Ireland	CSO. National Accounts
SSE profits, wages, headcount and expenditure data	
All geographies	SSE

Economic contribution approach (5/7)

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.

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 2017 to 31 March 2018. 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 and 2017 for FY18.

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 FY18. 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 FY18. However, due to time lags in the provision of data, price level data are not available for the first quarter of 2018 at the time of analysis. Therefore, we adjust past values to 2017 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 FY17 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. 2017 data are not yet available for all the relevant statistics. Consequently, where 2017 data are not available SSE's estimated economic contribution in FY18 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.

Our analysis does not cover SSE's joint ventures and associates, as defined in SSE's annual accounts, unless they are suppliers to SSE, in which case they are treated like other suppliers in the analysis analysis (with the exception of the Beatrice Offshore Windfarm Joint Venture, see below). SSE's subsidiaries are included in the analysis.

Construction of the Beatrice Offshore Windfarm, by the Beatrice Offshore Windfarm Joint Venture, commenced in FY17. This Joint Venture is 40% owned by SSE. During FY17, SSE managed 100% of Beatrice's procurement spend and, each quarter, was reimbursed by its infrastructure partners to the value of 60% of the expenditure from the previous quarter. In order to fully capture SSE's contribution to the economy through this procurement, it was agreed to consolidate 40% of the value of Beatrice's spend, for FY17, into the analysis. This was on the understanding that these transactions between SSE and Beatrice are not captured elsewhere 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.

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 FY18 analysis, we have used the FY18 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 7 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 2017 GDP data, for Scotland we used 2017 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 2016 employment data (the latest available) for the UK and Scotland and 2017 data for Ireland.