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

FINAL FY22 Results

May 2022

pwc

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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 2022 (FY22), 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 18 March 2022.

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 FY22 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 18 March 2022.

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 2021 to 31 March 2022. 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, 2019 for FY20, 2020 for FY21, 2021 for FY22.

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 FY22. 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 FY22. However, due to time lags in the provision of data, price level data are not available for the first quarter of 2022 at the time of analysis. Therefore, we adjust past values to 2021 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 FY21, which are also presented in this document, have been 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. 2021 data are not yet available for all the relevant statistics. Consequently, where 2021 data are not available SSE's estimated economic contribution in FY22 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.

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 FY22 analysis, we have used the FY22 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 also 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.

- 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 FY22 analysis this year. A consequence of this is that the FY22 results are not directly comparable for previous years other than FY21, FY20 and 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 notes and assumptions

Modelling methodology

- 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 separate reports.

- In years prior to FY20, 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 and beyond should use adjusted profits which exclude exceptionals and remeasurements. This change in methodology aimed 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 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 FY22 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 2022.

- As last 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 years before FY20. 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 A 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 for
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)

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"). Results for FY20 both with and without SSE Energy Services are shown where relevant.

Overall results for 2021/22

	GVA (£m for UK (and Total) and €m for ROI)				Employment (number of jobs)			
	Direct	Indirect	Induced	Total*	Direct	Indirect	Induced	Total*
UK	2,530	2,290	1,000	**5,820**	10,030	18,060	17,200	**45,290**
Scotland	1,287	523	210	**2,020**	4,790	2,970	3,260	**11,020**
RoI	276	114	48	**438**	730	330	780	**1,840**
Total UK and RoI	2,765	2,387	1,041	**6,193**	10,760	18,390	17,980	**47,130**

* 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 & ROI economy in FY22

	Results	Direct	Indirect	Induced	Total*
UK & RoI	GVA (£bn)	2.765	2.387	1.041	**6.193**
	Employment (number of jobs)	10,760	18,390	17,980	**47,130**
	SSE GVA multiplier				**2.24**
	SSE employment multiplier				**4.38**

* 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 FY22

Results	Direct	Indirect	Induced	Total*
GVA (£bn)	2.530	2.290	1.000	5.820
Employment (number of jobs)	10,030	18,060	17,200	45,290
SSE GVA multiplier				2.3
SSE employment multiplier				4.5
Contextual metrics	**Direct**	**Indirect**	**Induced**	**Total***
SSE labour productivity (£GVA per employee)	251,815			
UK national labour productivity	60,780			
Ratio of SSE's labour productivity to the UK's national labour productivity	4.1			
SSE supported employment as % of UK employment	0.03	0.06	0.05	0.14
SSE contribution to GDP as % of UK GDP	0.13	0.12	0.05	0.40

UK

* 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.

To contextualise SSE's estimated economic contribution we use national GDP and employment data from statistics authorities. 2021 data are not yet available for all the relevant statistics. Consequently, where 2021 data are not available SSE's estimated economic contribution in FY22 is compared to statistics from the latest year for which data are available. GDP data are inflated to current prices.

SSE's historic contribution to the UK economy

	GVA (£bn current prices)	Direct	Indirect	Induced	Total*
UK	FY22	2.53	2.29	1.00	5.82
	FY21	2.45	1.82	0.94	5.21
	FY20 (excluding SSE Energy Services)	2.81	2.46	0.76	6.03
	FY20	3.11	3.92	1.12	8.15
	FY19	2.96	4.73	1.87	9.56
	FY18	3.26	4.45	1.67	9.38
	FY17	3.93	4.67	1.75	10.35
	FY16	3.01	5.15	1.94	10.10
	FY15	3.06	5.16	1.82	10.04
	FY14	2.66	5.89	1.94	10.49
	FY13	2.74	6.14	1.90	10.78
	FY12	2.40	5.97	1.95	10.32
	10 year contribution to GVA (£bn current prices) (FY13-FY22)**	**29.71**	**44.22**	**15.95**	**89.88**

* 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.

** The total figure for 10 year contribution includes the FY20 total not FY20 (excluding SSE Energy Services).

SSE's historic contribution to UK employment

	Employment (number of jobs)	Direct	Indirect	Induced	Total*
UK	FY22	10,030	18,060	17,200	45,290
	FY21	11,610	13,640	16,150	41,400
	FY20 (excluding SSE Energy Services)	11,300	35,110	10,400	56,810
	FY20	18,700	49,010	15,340	83,050
	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
	10 year average contribution to employment (FY13-FY22)**	**17,830**	**49,000**	**24,950**	**91,780**

* 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.
** The total figure for 10 year contribution includes the FY20 total not FY20 (excluding SSE Energy Services).

SSE's contribution to the Scotland economy in FY22

	Results	Direct	Indirect	Induced	Total*
Scotland	GVA (£m)	1,287	523	210	2,020
	Employment (number of jobs)	4,790	2,970	3,260	11,020
	SSE GVA multiplier				1.6
	SSE employment multiplier				2.3
	Contextual metrics	**Direct**	**Indirect**	**Induced**	**Total***
	SSE labour productivity (£GVA per employee)	268,685			
	Scotland's national labour productivity	57,890			
	Ratio of SSE's labour productivity to Scotland's national labour productivity	4.6			
	SSE supported employment as % of Scottish employment	0.19	0.12	0.13	0.44
	SSE contribution to GDP as % of Scottish GDP	0.87	0.36	0.14	1.37

* 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.

To contextualise SSE's estimated economic contribution we use national GDP and employment data from statistics authorities. 2021 data are not yet available for all the relevant statistics. Consequently, where 2021 data are not available SSE's estimated economic contribution in FY22 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 and Ireland economy is not captured for all comparisons except for UK GVA.

SSE's historic contribution to the Scotland economy

	GVA (£m current prices)	Direct	Indirect	Induced	Total*
Scotland	FY22	1,287	523	210	2,020
	FY21	1,061	271	154	1,486
	FY20 (excluding SSE Energy Services)	1,175	201	35	1,411
	FY20	1,202	268	44	1,514
	FY19	1,146	356	209	1,711
	FY18	1,263	515	217	1,995
	FY17	1,450	464	207	2,121
	FY16	1,092	467	211	1,770
	FY15	1,060	411	204	1,675
	FY14	985	418	203	1,606
	FY13	904	564	194	1,662
	FY12	785	395	170	1,350
	10 year contribution to GVA (£m current prices) (FY13-FY22)**	**11,450**	**4,257**	**1,853**	**17,560**

* 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.
** The total figure for 10 year contribution includes the FY20 total not FY20 (excluding SSE Energy Services).

SSE's historic contribution to Scottish employment

Employment (number of jobs)	Direct	Indirect	Induced	Total*
FY22	4,790	2,970	3,260	11,020
FY21	4,660	1,350	2,390	8,400
FY20 (excluding SSE Energy Services)	4,380	2,570	440	7,390
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
10 year average contribution to employment (FY13-FY22)**	**6,500**	**5,400**	**2,870**	**14,770**

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.
** The total figure for 10 year contribution includes the FY20 total not FY20 (excluding SSE Energy Services).

SSE's contribution to the Republic of Ireland economy in FY22

Republic of Ireland	Results	Direct	Indirect	Induced	Total*
	GVA (€m)	276	114	48	438
	Employment (number of jobs)	730	330	780	1,840
	SSE GVA multiplier				1.6
	SSE employment multiplier				2.5
	Contextual metrics	**Direct**	**Indirect**	**Induced**	**Total***
	SSE labour productivity (€GVA per employee)	378,082			
	Ireland's national labour productivity	131,020			
	Ratio of SSE's labour productivity to Ireland's national labour productivity	2.9			
	SSE supported employment as % of Irish employment	0.04	0.02	0.04	0.10
	SSE contribution to GDP as % of Irish GDP	0.11	0.16	0.02	0.29

* 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.

To contextualise SSE's estimated economic contribution we use national GDP and employment data from statistics authorities. 2021 data are not yet available for all the relevant statistics. Consequently, where 2021 data are not available SSE's estimated economic contribution in FY22 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 and Ireland economy is not captured for all comparisons except for UK GVA.

SSE's historic contribution to the RoI economy

	GVA (€m current prices)	Direct	Indirect	Induced	Total*
Republic of Ireland	FY22	276	114	48	438
	FY21	181	220	51	452
	FY20 (excluding SSE Energy Services)	188	425	58	671
	FY20	188	425	58	671
	FY19	251	403	75	729
	FY18	222	535	101	858
	FY17	171	569	99	839
	FY16	177	600	95	872
	FY15	189	774	111	1,074
	FY14	214	753	112	1,079
	FY13	98	723	90	911
	FY12	98	669	84	851
	10 year contribution to GVA (€m current prices) (FY13-FY22)**	**1,967**	**5,116**	**840**	**7,923**

* 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.
** The total figure for 10 year contribution includes the FY20 total not FY20 (excluding SSE Energy Services).

SSE's historic contribution to Irish employment

Employment (number of jobs)	Direct	Indirect	Induced	Total*
FY22	730	330	780	1,840
FY21	880	490	790	2,160
FY20 (excluding SSE Energy Services)	830	2,170	740	3,740
FY20	830	2,170	740	3,740
FY19	760	2,330	990	4,080
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
10 year average contribution to employment (FY13-FY22)**	**760**	**2,340**	**1,020**	**4,120**

Republic of Ireland (row label spanning all years)

* 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.
** The total figure for 10 year contribution includes the FY20 total not FY20 (excluding SSE Energy Services).

Top 5 industries in SSE's supply chain for 2021/22

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

UK	
Construction	35%
Electricity, transmission and distribution	33%
Machinery and equipment n.e.c.	7%
Electrical equipment	5%
Other professional, scientific and technical services	5%
Other industries	15%
Total	**100%**

Scotland	
Construction	53%
Electricity	25%
Architectural services etc	5%
Business support services	2%
Other professional services	2%
Other industries	13%
Total	**100%**

RoI	
Electricity and gas supply	49%
Mining, quarrying and extraction	25%
Wholesale trade	19%
Construction and construction works	2%
Security, office and business support activities	1%
Other industries	4%
Total	**100%**

Notes on the results

- To contextualise SSE's estimated economic contribution we use national GDP and employment data from statistics authorities. 2021 data are not yet available for all the relevant statistics. Consequently, where 2021 data are not available SSE's estimated economic contribution in FY22 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 in the contextual comparisons, other than UK GVA.

- SSE's economic contribution over 2021/22 reflects a number of structural changes within SSE plc during the reporting year. These include the disposal of its Contracting and Rail business; the formation NEOS Networks, a standalone joint venture Telecoms business; and the sale of SSE's stake in SGN.

A

Appendix A
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
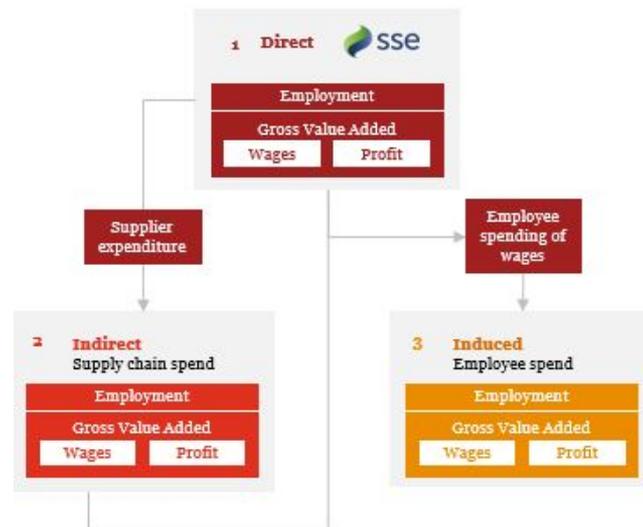
Approach to estimating indirect and induced economic contribution

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)
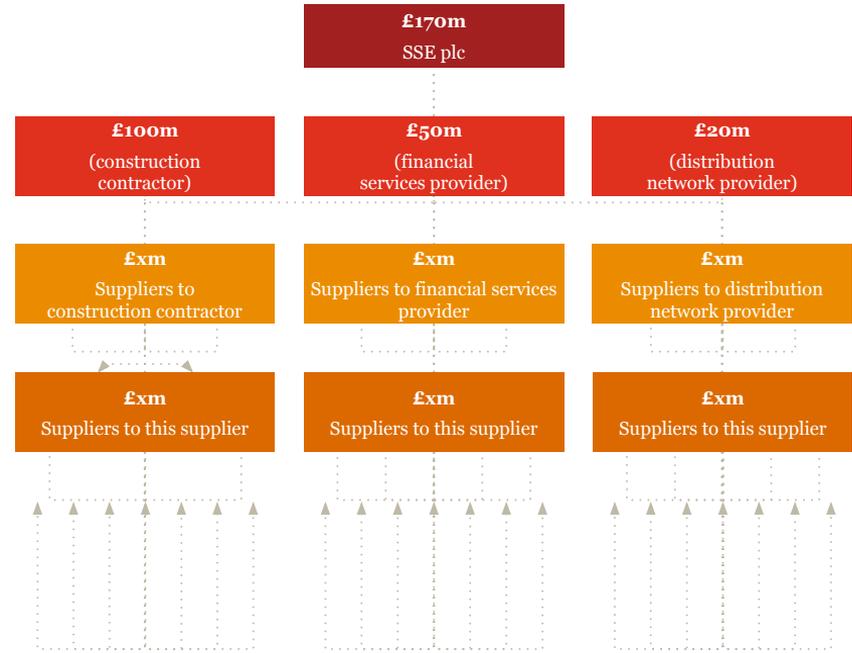
Economic contribution approach (4/7)

Table 1: Key data sources	
Country	**Source**
Input-Output tables	
UK	Office for National Statistics (ONS). UK Input-Output Analytical Tables, 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)

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 2021 to 31 March 2022. 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, 2019 for FY20, 2020 for FY21, and 2021 for FY22.

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 FY22. 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 FY22. However, due to time lags in the provision of data, price level data are not available for the first quarter of 2022 at the time of analysis. Therefore, we adjust past values to 2021 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 FY21 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. 2021 data are not yet available for all the relevant statistics. Consequently, where 2021 data are not available SSE's estimated economic contribution in FY22 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.

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 FY22 analysis, we have used the FY22 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 and Scotland we used 2021 GDP 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 2020 employment data (the latest available) for the UK, and Scotland,and 2017 employment data (the latest available) for Ireland.