

# Economic Analysis of Strathy North Wind Farm

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A report to SSE Renewables  
January 2020





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# 1. Executive Summary

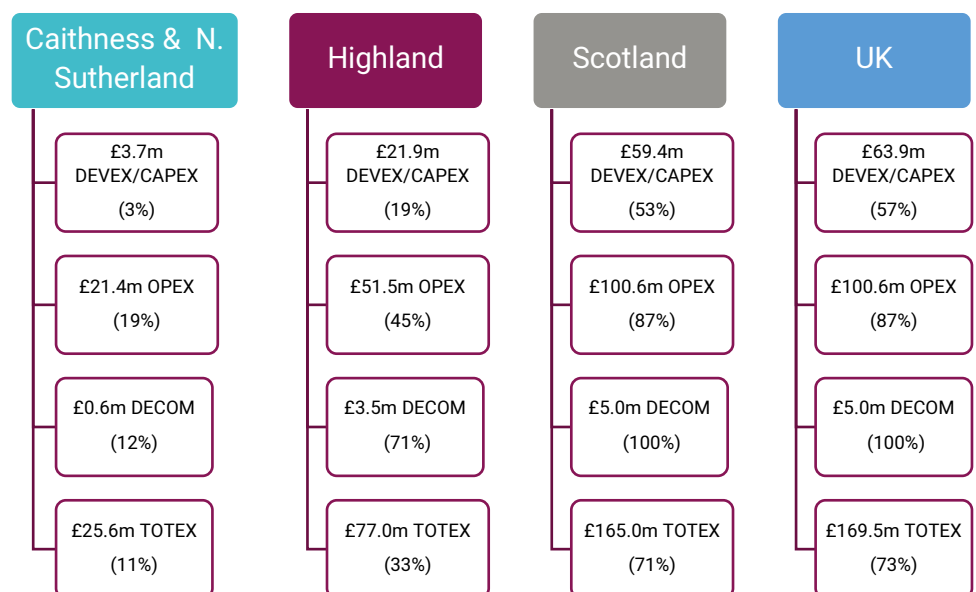
The development, construction and operation of Strathy North Wind Farm has generated substantial local and national impacts and will continue to do so throughout its operational lifetime and beyond.

Strathy North Wind Farm, which is based in the north of Scotland, near Strathy in North Sutherland, was developed and built at a cost of **£113 million** (DEVEX/CAPEX). Operational expenditure (OPEX) and decommissioning costs over its 25-year lifetime are expected to be **£121 million**. The expected total expenditure (TOTEX) is **£234 million**.

During the development and construction of Strathy North Wind Farm, it was estimated that companies and organisations in Scotland secured contracts worth **£59.4 million**. The area is expected to secure **£100.6 million** in OPEX contracts over the wind farm’s operational lifetime (£4.0 million annually). Overall the expenditure, including decommissioning, secured in Scotland is expected to be **£165.0 million**, or **73% of TOTEX**.

Highland is expected to secure **£21.9 million** in DEVEX/CAPEX contracts and **£51.5 million** in OPEX contracts (£2.1 million annually). Overall, Highland is expected to secure contracts worth **£77.0 million**, or **33% of TOTEX**. Of this, **£25.6 million**, equivalent to **11% of TOTEX** is expected to be secure in Caithness and North Sutherland.

**Figure 1-1 – Strathy North Wind Farm Contract Values and Shares by Stage**





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## Strathy North secured a high proportion of work from local and national companies.

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During the development and construction phase it was estimated that Strathy North Wind Farm generated:

- **£1.4 million GVA** and **supported 19 years of employment** in Caithness and North Sutherland;
- **£12.9 million GVA** and **supported 193 years of employment** in Highland;
- **£46.8 million GVA** and **supported 700 years of employment** in Scotland; and
- **£72.1 million GVA** and **supported 1,218 years of employment** in the UK.

This economic activity includes those directly employed by Strathy North Wind Farm and its contractors, as well as companies in the supply chain and spending of wages by workers in the wider economy.

This has particularly benefitted companies in the construction sector, such as **RJ McLeod**, a primary contractor responsible for the enabling and main construction works that took on a number of local workers. **Gunn**, a local firm, also benefitted: it undertook road surfacing, provided quarry material from its **Melvich Quarry**, and provided concrete to the site. The contract enabled it to purchase a mobile concrete plant that has been used on other projects.

There will also be long-term economic impacts during the operational phase of the wind farm. It was estimated that in an average year, it would generate:

- **£0.6 million GVA** and support **6 jobs** in Caithness and North Sutherland;
- **£1.4 million GVA** and support **17 jobs** in Highland;
- **£3.3 million GVA** and support **39 jobs** in Scotland; and
- **£5.1 million GVA** and support **69 jobs** in the UK.

This economic activity includes those directly employed by Strathy North Wind Farm and its contractors, as well as companies in the supply chain and spending of wages by workers in the wider economy.

The decommissioning activity at the end of the operational life of the project is expected to generate £2.0 million GVA and support 31 years of employment in Highland and £3.8 million GVA and 60 years of employment across Scotland

The contribution over the lifetime of the wind farm to the Strathy North Community Fund will be **£4.5 million**, with a contribution of **£170,000 annually**

To date, grants of **£1.0 million** have been approved, supporting and strengthening local communities. This includes a grant that has renovated **Armadale Community Hall**, which will provide a space for local people, and enable the community to take advantage of the opportunities presented by the North Coast 500.



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## 2.

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# Introduction

In 2019, BiGGAR Economics was commissioned by SSE Renewables to undertake a socio-economic impact assessment of Strathy North Wind Farm.

## 2.1 Background

Strathy North Wind Farm is approximately 7km from the village of Strathy in North Sutherland. It has been operational since November 2015 and consists of 33 turbines with a total installed capacity of 68MW. The cost of development and construction was £113 million and it is expected that operation will cost a further £121 million.

## 2.2 Approach

Details on the approach taken to quantifying the economic impact of Strathy North Wind Farm and the sources used are provided in Appendix B. A brief outline of the approach used is provided in this section.

### 2.2.1 Metrics of Assessment

The primary metrics of assessment used in this report are:

- Gross Value Added (GVA) – this is a measure of economic value added by an organisation or industry. It is typically estimated by subtracting the non-staff operational costs from the revenues of an organisation; and
- Years of employment – this is a measure of the employment which is equivalent to one person being employed for an entire year and is typically used when considering short-term employment impacts, such as those associated with construction; and
- Jobs – this is a measure of employment which considers the headcount employment in an organisation or industry.

### 2.2.2 Study Areas

The study areas considered as part of this report are:

- Caithness and North Sutherland, which is the area covered by the Caithness and North Sutherland Regeneration Partnership (CNSRP);
- Highland, which is the Highland Council Area;
- Scotland; and
- the UK.



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The impacts in this study are reported inclusively unless otherwise stated. Therefore the figures given for the impact in Highland include the impacts in Caithness and North Sutherland.

### 2.2.3 Types of Impact

The economic impacts associated with development and capital expenditure, and operational expenditure have been assessed. Development and capital expenditure impacts have already occurred, while operational impacts have either occurred or are expected to occur over the lifetime of the project.

For each contract, an assumption was made about the proportion that would be secured in each study area and they were then assigned a sector. On the basis of these sectors, economic ratios and multipliers were derived, which were then used to estimate economic impacts.

There are three significant types of economic impact associated with Strathy North Wind Farm:

- direct impact – this is the direct impact associated with Tier 1 supplier, including employing and paying staff, and generating profits. This impact is calculated by dividing the expenditure on a contract by the turnover/GVA and turnover/employee for the relevant sectors<sup>1</sup> to estimate direct GVA and employment impacts;
- indirect impact – this is the impact associated with spending in the supply chain of Tier 1 suppliers. This is captured by applying Type 1 economic multipliers<sup>2 3</sup> to the direct economic impacts;
- induced impact – this is the impact associated with staff spending their wages in the wider economy, and is captured by subtracting Type 1 multipliers from Type 2 multipliers, and applying this to the direct impact.

### 2.2.4 Consultations

A small number of consultation were undertaken with staff within SSE and with a number of contractors to gain a better understanding of Strathy North Wind Farm's economic impact. A list of consultees is provided in [Appendix A – Consultations](#).

## 2.3 Report Structure

The remainder of this report is structured as follows:

- Chapter 3 assesses the economic impact of Strathy North Wind Farm;
- Chapter 4 discusses the community benefit associated with the wind farm;
- Chapter 5 is an appendix listing consultees; and

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<sup>1</sup> Office for National Statistics (2018), Annual Business Survey – 2017

<sup>2</sup> Scottish Government (2018), Input-Output Tables 2015

<sup>3</sup> ONS (2018), UK Input-Output Tables 2015



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- Chapter 6 is an Appendix outlining more details on the methodology used in this study.



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## 3. Economic Impact of Strathy North Wind Farm

This chapter considers the economic impact of Strathy North Wind Farm in its development and construction, operational and decommissioning phases.

### 3.1 Development and Construction Impacts

The capital expenditure (Capex) for developing and constructing Strathy North Wind Farm was £113.1 million. For each transaction that makes up this total figure, a sector was assigned and an assumption was made about the proportion of each contract that could be secured in each study area.

During this phase, companies in the UK secured contracts worth £63.9 million, equivalent to 57% of total expenditure, and companies in Scotland were awarded contracts with a value of £59.4 million (53%). Companies in Highland received contracts worth £21.9 million (25%) and companies in Caithness and North Sutherland (C&NS) received contracts worth £3.7 million (3%).

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### **£22 million of capital investment was spent within Highland**

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The lease of the land was included as part of the development and construction costs. Although this was a real estate transaction, this will in effect support the business operations of the landowner, a commercial forestry company based outside of Highland and therefore the expenditure was considered to be secured in Scotland and the UK.





**Table 3.1 Development and Construction Expenditure by Study Area (£m)**

	C & NS	Highland	Scotland	UK	Total
Turnover	3.7	21.9	59.4	63.9	113.1
Turnover (%)	3%	19%	53%	57%	-

Source: SSE Renewables/BiGGAR Economics Assumptions

The two primary contractors for Strathy Wind Farm were Senvion, a German company which supplied the wind turbines themselves, and RJ McLeod, a Scottish company which provided civil engineering and construction services.



## RJ McLeod

### Primary contractor – civil engineering and construction services

RJ McLeod is a civil engineering company founded in 1951 which operates through offices in Glasgow and Dingwall in the north of Scotland. It is one of the largest privately owned construction companies in Scotland, with turnover in 2018 of £88 million and over 400 staff and operatives. RJ McLeod was one of the primary contractors for Strathy North Wind Farm, and constructed the civil infrastructure, such as roads, bridges, drainage and turbine bases.

Strathy North represented a significant contract for the company. As well as supporting existing Highland-based employees, this project led RJ McLeod to take on 7 more local people. This included 5 people working as labour and plant operatives, enabling them to gain valuable experience, as well as hiring an office administrator and cleaner. In addition, RJ McLeod worked with a number of local companies such as G&A Barnie in Thurso, Envirassist in Wick, which was the Environmental Clerk of Works, and Gunn in Lybster, which is discussed in another case study on p8.

RJ McLeod has significant experience in the onshore wind farm sector, and building Strathy North Wind Farm was its 63<sup>rd</sup> wind farm contract. Other wind farms it has worked on include SSE’s Spurness, Achany and Gordonbush Wind Farms. The Strathy North project further strengthened RJ McLeod’s relationship with SSE, and supported the company’s successful bids for other projects, such as Dunmaglass, Bhlaraidh and Stronelairg Wind Farms. Together these projects have contributed significantly to the Scottish and local economies.

This expenditure generated economic impact across the UK. It was estimated that Strathy North Wind Farm generated £1.4 million GVA in Caithness and North



Sutherland, £12.9 million GVA across Highland, £46.8 million GVA across Scotland and £72.1 million GVA across the UK.

**Table 3.2 Economic Impact of Development and Construction Expenditure, GVA (£m)**

	C & NS	Highland	Scotland	UK
Direct impact	1.2	9.1	27.1	29.1
Indirect impact	0.1	1.8	11.9	22.5
Induced impact	0.2	2.0	7.8	20.5
<b>Total</b>	<b>1.4</b>	<b>12.9</b>	<b>46.8</b>	<b>72.1</b>

Source: BIGGAR Economics Calculations. Note, totals may not sum due to rounding

The contracts also supported employment in these companies, which were estimated using turnover per employee ratios, and jobs in the wider economy, which were estimated using employment multipliers. As the contracts are short term, the employment impact is measured in years of employment.

It was estimated that throughout the project, 19 years of employment were supported in Caithness and North Sutherland, 193 years of employment were supported in Highland, 700 years of employment were supported in Scotland and 1,218 years of employment were supported in the UK.

**Table 3.3 Economic Impact of Construction and Development Expenditure, Employment (years of employment)**

	C & NS	Highland	Scotland	UK
Direct impact	16	143	436	477
Indirect impact	1	26	171	394
Induced impact	2	23	93	347
<b>Total</b>	<b>19</b>	<b>193</b>	<b>700</b>	<b>1,218</b>

Source: BIGGAR Economics Calculations. Note, totals may not sum due to rounding

A number of local contractors also worked on the wind farm, either through RJ McLeod or contracted directly, including;

- Gunn, a company in Lybster that supplied concrete and quarry materials;
- Alan Gow Groundworks, a company in Halkirk that provided the turbines bases;
- Charles Angus Agricultural Engineers, accompany in Thurso that provided logistical support;
- G&A Barnie a company in Wick that undertook electrical works;
- MM Miller a company in Wick that installed cattle grids on the A836; and
- GMR Henderson, a company in Thurso that provided mobile rock crushing services. .



## Gunn

### Gunn supplied concrete and quarry materials, and undertook road surfacing

Gunn is a Caithness-based company that was founded in 1912, and has remained a family-managed business for four generations. It works in areas including quarrying, civil engineering and house building, and employs approximately 40 people.

As a sub-contractor to RJ McLeod, Gunn provided concrete and quarry materials, such as stone, as well as laying road surfaces. The materials were provided from its Melvich Quarry, one of three that it owns in Caithness, which is just 6-8 miles from Strathy North Wind Farm. The project directly supported 3 workers at the quarry, as well as 3-4 lorry drivers to transfer materials to the site, and sustained existing staff.

As part of the Strathy North project, Gunn purchased a mobile concrete plant which it would not otherwise have acquired. This has enabled the company to bid more competitively for other work, and has been used in 3-4 other projects.

## 3.2 Operational Impacts

This section considers the long-term impact that will occur during the 25-year lifetime of Strathy North Wind Farm.

SSE Renewables provide financial projections, which indicate that between 2015/16 and 2039/40 operational expenditure (Opex) associated with Strathy North Wind Farm is expected to be £115.4 million. This excludes the capital repayment component of the transmission charges paid to the network operator, which covers the initial costs of setting up the grid connection and is included as part of the construction expenditure.

As these impacts occur over a longer period of time, they are treated differently from the construction phase. As a result, the impacts are presented in three formats:

- average impact, which considers the average annual impact;
- undiscounted impact, which uses the gross figures provided by the financial analysis; and
- Net Present Value (NPV) impact, which applies a discount rate to the figures provided by the financial analysis.

In order to assess the potential economic impact of this expenditure it was necessary to make an assumption about the sector of these contracts and the proportion of contracts that could be secured in each of the study areas. It was



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known in some instances that contracts would be secured in the study areas, for example non-domestic rates would be held within Scotland. However, it was necessary to make assumptions about the proportion of other significant categories of expenditure that could be secured in each study area. These assumptions were based on:

- SSE Renewables expertise and experience in operating and maintaining renewable assets;
- BiGGAR Economics expertise and experience of economic analysis of renewable assets; and
- other economic impact studies of renewable projects in the area.

Applying the percentages of contracts for each of the study areas for each category suggests that Caithness and North Sutherland could secure 19% of contracts, Highland could secure 45% of contracts and Scotland and the UK could each secure 87% of contracts.

The operational impact will include employees working directly on Strathy North Wind Farm, and directly employed by SSE. Often, one employee will work on a number of wind farms, for example wind farms within Caithness and North Sutherland, or operating throughout Highland.

It will also include employees who are contracted to undertake maintenance and testing of the wind turbines and electrical systems. Several of these employees are based in Caithness and North Sutherland and employed by Senvion, which is the original equipment manufacturer (OEM) and provides the servicing contract.

In addition, Gow Groundworks, a local Thurso-based company, is the primary general contractor, providing a range of services, such as landscaping, snow clearing etc. They are also sometimes contracted to find local tradespeople, such as joiners and plumbers. Other companies that provide more specialised maintenance include AAT Wind Energy Limited, a company based in Ayrshire which tests lifting and haulage equipment, and British Engineering, which has an engineer operating throughout Highland.

Transmission costs paid by the wind farm, as well as providing capital repayment for grid connection work previously undertaken, will also support local network maintenance employees based in Thurso.

### **3.2.1 Average Annual Operational Expenditure**

Over 25 years, the average annual operational expenditure was projected to be £4.6 million, with £0.9 million taking place in Caithness and North Sutherland, £2.1 million taking place in Highland, and £4.0 million taking place the UK, of which all is expected to be spent within Scotland.



**Table 3.4 Annual Operational Expenditure by Study Area (£m)**

	<b>C &amp; NS</b>	<b>Highland</b>	<b>Scotland</b>	<b>UK</b>	<b>Total</b>
Turnover	0.9	2.1	4.0	4.0	4.6
Turnover (%)	19%	45%	87%	87%	-

Source: SSE Renewables/BiGGAR Economics Assumptions

Applying appropriate economic ratios and multipliers indicates that this expenditure could support £0.5 million GVA and 6 jobs annually in Caithness and North Sutherland, £1.4 million GVA and 15 jobs annually in Highland, £3.2 million GVA and 36 jobs annually in Scotland, and £4.9 million GVA and 54 jobs annually in the UK<sup>4</sup>.

**Table 3.5 Economic Impact of Annual Operational Expenditure, GVA (£m)**

	<b>C &amp; NS</b>	<b>Highland</b>	<b>Scotland</b>	<b>UK</b>
Direct impact	0.5	1.2	2.3	2.3
Indirect impact	<0.1	0.1	0.4	1.2
Induced impact	<0.1	0.2	0.5	1.5
<b>Total</b>	<b>0.5</b>	<b>1.4</b>	<b>3.2</b>	<b>4.9</b>

Source: BiGGAR Economics Calculations. Note, totals may not sum due to rounding

**Table 3.6 Economic Impact of Annual Operational Expenditure, Employment (jobs)**

	<b>C &amp; NS</b>	<b>Highland</b>	<b>Scotland</b>	<b>UK</b>
Direct impact	5	11	24	24
Indirect impact	0	2	5	14
Induced impact	1	2	7	16
<b>Total</b>	<b>6</b>	<b>15</b>	<b>36</b>	<b>54</b>

Source: BiGGAR Economics Calculations. Note, totals may not sum due to rounding

### 3.2.2 Undiscounted Impact

Over 25 years, the total operational expenditure was projected to be £115.4 million, with £21.4 million taking place in Caithness and North Sutherland, £51.5 million taking place in Highland, and £100.6 million taking place the UK, of which all is expected to be spent within Scotland.

<sup>4</sup> The economic impact in the UK is higher than that of Scotland because the companies included in the supply chain of the directly contracted companies and their staff will include those in England, Wales and Northern Ireland.



## Over £100 million will be spent within Scotland during the operational lifetime of Strathy North

**Table 3.7 Total Operational Expenditure by Study Area (£m)**

	C & NS	Highland	Scotland	UK	Total
Turnover	21.4	51.5	100.6	100.6	115.4
Turnover (%)	19%	45%	87%	87%	-

Source: SSE Renewables/BiGGAR Economics Assumptions

Applying appropriate economic ratios and multipliers indicates that this expenditure over Strathy North's operational life could support £13.6 million GVA in Caithness and North Sutherland, £35.5 million GVA in Highland, £79.8 million GVA in Scotland, and £122.9 million GVA in the UK.

**Table 3.8 Economic Impact of Operational Expenditure, GVA (£m)**

	C & NS	Highland	Scotland	UK
Direct impact	12.3	29.0	57.0	57.0
Indirect impact	0.2	2.3	10.9	29.1
Induced impact	1.0	4.2	11.9	36.9
<b>Total</b>	<b>13.6</b>	<b>35.5</b>	<b>79.8</b>	<b>122.9</b>

Source: BiGGAR Economics Calculations. Note, totals may not sum due to rounding

### 3.2.3 Net Present Value Impact

Over 25 years, the NPV of operational expenditure was projected to be £79.9 million, with £14.8 million taking place in Caithness and North Sutherland, £35.8 million taking place in Highland, and £69.8 million taking place the UK, of which all is expected to be spent within Scotland.

**Table 3.9 NPV Operational Expenditure by Study Area (£m)**

	C & NS	Highland	Scotland	UK	Total
Turnover	14.8	35.8	69.8	69.8	79.9
Turnover (%)	19%	45%	87%	87%	-

Source: SSE Renewables/BiGGAR Economics Assumptions

Applying appropriate economic ratios and multipliers indicates that this expenditure could support £9.4 million GVA in Caithness and North Sutherland, £24.6 million GVA in Highland, £55.2 million GVA in Scotland, and £85.1 million GVA in the UK.



**Table 3.10 NPV Economic Impact of Operational Expenditure, GVA (£m)**

	<b>C &amp; NS</b>	<b>Highland</b>	<b>Scotland</b>	<b>UK</b>
Direct impact	8.5	20.0	39.4	39.4
Indirect impact	0.2	1.6	7.6	20.2
Induced impact	0.7	2.9	8.2	25.5
<b>Total</b>	<b>9.4</b>	<b>24.6</b>	<b>55.2</b>	<b>85.1</b>

Source: BiGGAR Economics Calculations. Note, totals may not sum due to rounding

### 3.3 Decommissioning Impacts

It is also expected that there will be an impact associated with decommissioning Strathy North Wind Farm at the end of its 25-year lifetime.

The decommissioning activity, will occur over a short period of time, which is likely to be shorter than the development and construction activity. Therefore, the employment opportunities that this activity will generate short term and are reported as years of employment in this section.

Decommissioning is projected to cost £5.0 million, with the demolition contract representing over three-quarters of the cost. It is expected that all of the contracts would be secured within Scotland, and that Highland could secure £3.5 million of contracts. Caithness and North Sutherland would be expected to account for £0.6 million of the contract values.

**Table 3.11 Decommissioning Expenditure by Study Area (£m)**

	<b>C &amp; NS</b>	<b>Highland</b>	<b>Scotland</b>	<b>UK</b>	<b>Total</b>
Turnover	0.6	3.5	5.0	5.0	5.0
Turnover (%)	12%	71%	100%	100%	-

Source: SSE Renewables/BiGGAR Economics Assumptions

Applying the appropriate turnover to GVA and turnover per employee ratios implies that the decommissioning of Strathy North Wind Farm would support £0.3 million GVA and 5 years of employment in Caithness and North Sutherland, £2.0 million GVA and 31 years of employment in Highland, £3.8 million GVA and 60 years of employment in Scotland and £5.3 million GVA and 86 years of employment in the UK.



**Table 3.12 Economic Impact of Decommissioning Expenditure, GVA (£m)**

	<b>C &amp; NS</b>	<b>Highland</b>	<b>Scotland</b>	<b>UK</b>
Direct impact	0.2	1.4	2.0	2.0
Indirect impact	<0.1	0.3	1.1	1.9
Induced impact	<0.1	0.3	0.7	1.4
<b>Total</b>	<b>0.3</b>	<b>2.0</b>	<b>3.8</b>	<b>5.3</b>

Source: BiGGAR Economics Calculations. Note, totals may not sum due to rounding

**Table 3.13 Economic Impact of Decommissioning Expenditure, Employment (years of employment)**

	<b>C &amp; NS</b>	<b>Highland</b>	<b>Scotland</b>	<b>UK</b>
Direct impact	4	22	31	31
Indirect impact	<1	5	19	32
Induced impact	1	5	10	24
<b>Total</b>	<b>5</b>	<b>31</b>	<b>60</b>	<b>86</b>

Source: BiGGAR Economics Calculations. Note, totals may not sum due to rounding

### 3.4 Summary of the Economic Impact

The total expenditure associated with Strathy North Wind Farm, including Devex, Capex, Opex and decommissioning is expected to be £228.5 million. Of this:

- £25.6 million of contracts, equivalent to 11% of the total, is expected to be secured in Caithness and North Sutherland,
- £77.0 million (33%) are expected to be secured in Highland,
- £165.0 million (71%) is expected to be secured in Scotland, and
- £169.5 million (73%) is expected to be secured in the UK.

As can be seen in [Table 3.14](#) the main opportunity for the local areas is operations and maintenance.

**£77 million is expected to be spent in the Highland Council Area as a result of Strathy North Wind Farm**





**Table 3.14 Total Expenditure: Turnover by Study Area (£m)**

	<b>C &amp; NS</b>	<b>Highland</b>	<b>Scotland</b>	<b>UK</b>	<b>Total</b>
Devex and Capex	3.7	21.9	59.4	63.9	113.1
Opex	21.4	51.5	100.6	100.6	115.4
Decommissioning	0.6	3.5	5.0	5.0	5.0
<b>Total</b>	<b>25.6</b>	<b>77.0</b>	<b>165.0</b>	<b>169.5</b>	<b>233.5</b>
Total (%)	11%	33%	71%	73%	-

Source: BIGGAR Economics Calculations. Note, totals may not sum due to rounding

Over the lifetime of the wind farm, total expenditure associated with these contracts is expected to support:

- £15.2 million GVA in Caithness and North Sutherland;
- £50.4 million GVA in Highland;
- £130.4 million GVA in Scotland; and
- £200.3 million GVA in the UK.

**Table 3.15 Total Expenditure: Economic Impact, GVA (£m)**

	<b>C &amp; NS</b>	<b>Highland</b>	<b>Scotland</b>	<b>UK</b>
Capex	1.4	12.9	46.8	72.1
Opex	13.6	35.5	79.8	122.9
Decommissioning	0.3	2.0	3.8	5.3
<b>Total</b>	<b>15.2</b>	<b>50.4</b>	<b>130.4</b>	<b>200.3</b>

Source: BIGGAR Economics Calculations. Note, totals may not sum due to rounding

### 3.5 Impact in Context

The analysis of the contracts awarded during the development, construction and operations of Strathy North Wind Farm have found that a greater share of contracts was awarded at a local and Scottish level than the average for the sector across the UK.

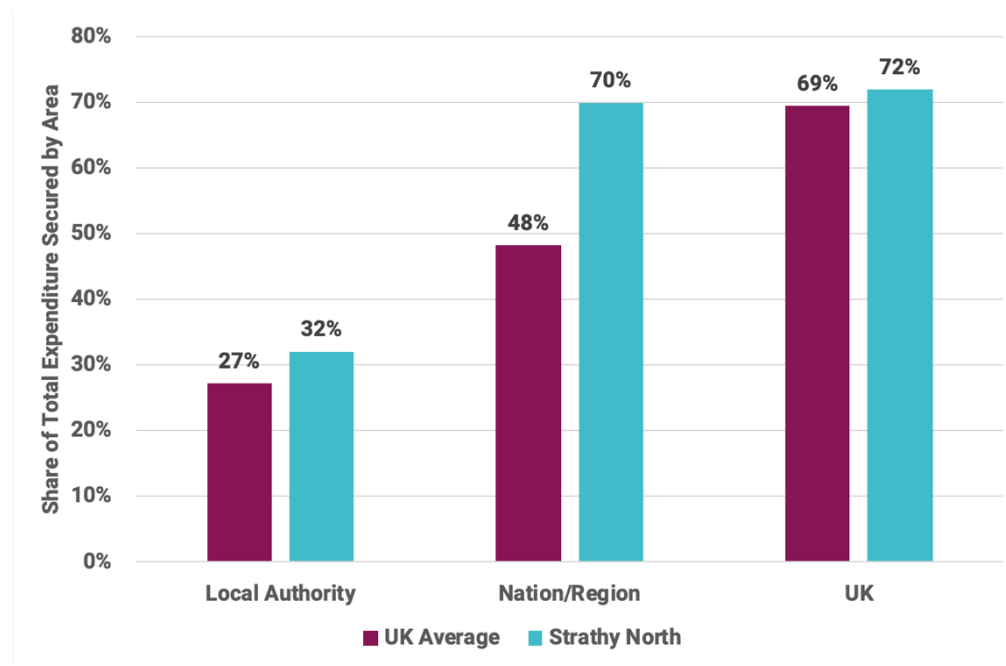
**Strathy North procured a greater than average share of contracts from Highland, Scotland and the UK**



In 2015, BiGGAR Economics undertook a study of wind farm developments across the UK<sup>5</sup> that considered the local and national component of their expenditure. This found that an average wind farm constructed in that period had 69% of UK content, of which 48% was at a national/regional level and 27% was within the local authority that the wind farm was developed<sup>6</sup>.

Strathy North procured a greater share of contracts from each of these areas than the UK average. As shown in [Figure 3-1](#), the greatest difference is between the average expenditure which a UK wind farm would be expected to procure from the nation or region they operate in (48%) and the total Strathy North expenditure secured from Scotland (70%). This is a result of Strathy North procuring the majority of their domestic UK expenditure from Scotland, particularly during the operational phase of the wind farm.

**Figure 3-1 TOTEX Share by Area, Strathy North vs UK Average**



Source: BiGGAR Economics Analysis

## Organisations in Highland will secure contracts worth £11 million more than would be expected

Within Highland, Strathy North secured 32% of the expenditure compared to the average wind farm across the UK which would typically secure 27% of expenditure in the Local Authority area in which it is built. This is equivalent to an additional £11

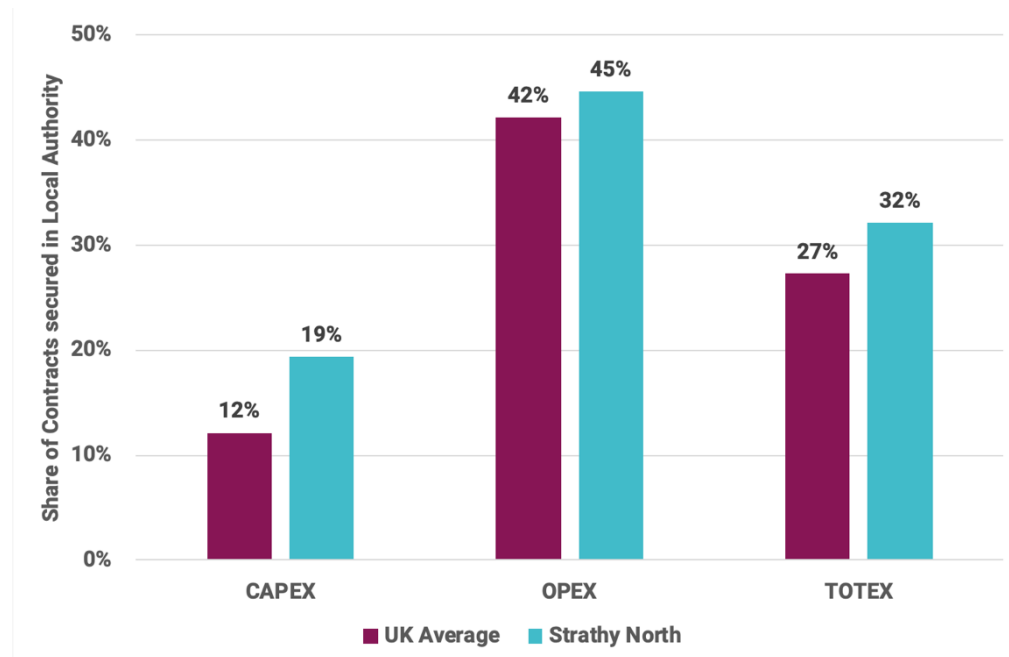
<sup>5</sup> RenewableUK (2015) Onshore Wind Economic Impacts in 2014

<sup>6</sup> Note that the RenewableUK study did not consider decommissioning and so Strathy North figures used in the comparison exclude decommissioning



million worth of contracts in Highland over the lifetime of the wind farm. As shown in [Figure 3-2](#) the largest difference was during the capital investment phase (development and construction) where organisations in Highland secured 19% of the total contract value, compared to an average of 12%.

**Figure 3-2 Contract Share in Local Authority, Strathy North vs UK Average**



Source: BIGGAR Economics Analysis

# 4.

## Community Benefit

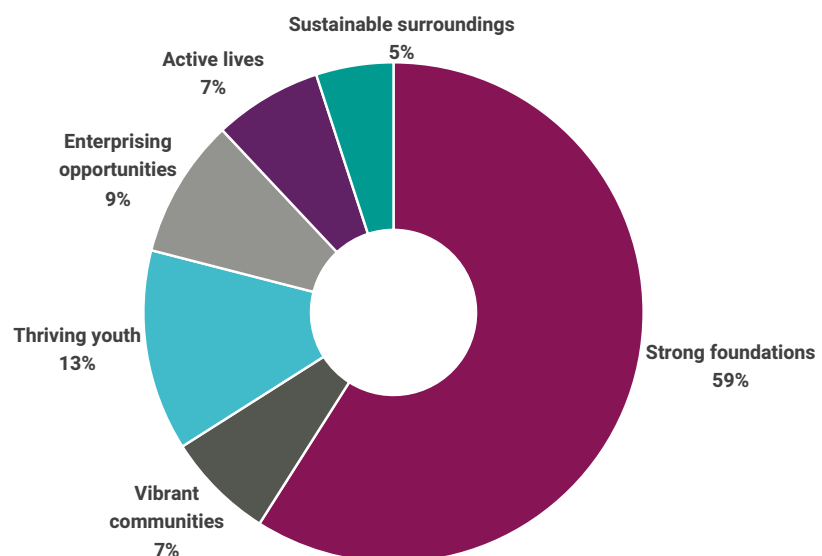
SSE Renewables has approved community benefit grants of £1.0 million to fund local projects, strengthening and supporting the local area. This funding can have many positive impacts in these communities including economic development.

The community benefit funds associated with wind farms can support fragile, rural communities by providing a source of funding that creates and sustains social and economic benefits. For example, they can support initiatives aimed at boosting local tourism, education and infrastructure.

### 4.1 SSE Community Investment

SSE has a well-established programme of community benefit funds associated with renewable energy projects, and in 2018/19 invested £6.6 million in 463 projects, a 30% increase from the previous year. This funding supports fragile rural areas, and ensures that share in the benefits of onshore wind.

**Figure 4-1 – Fund Awards by SSE Renewable Energy Funds, 2018/19**



Source: SSE (2019), SSE Community Investment Review 2018/19

The largest categories of awards are strong foundations and thriving youth, which help support the fabric of communities throughout Scotland and the rest of the UK (Figure 4-1). As well as direct support, SSE also enables communities to leverage in



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funding from other organisations – on average for every £1 of funding £4.47 was leveraged in from other organisations.

## 4.2 Strathy North Joint Community Fund

Since 2014 SSE has provided funding to local communities through the Strathy North Joint Community Fund. The focus of the fund is young people, with the goal that they are not disadvantaged by the rural location in which they live and are able to experience the same economic and social opportunities as young people living in towns and cities. The importance of widening access to economic opportunities is recognised by the Scottish Government, which has made 'Inclusive Growth' one of the key pillars of the national economic strategy.

The fund will run until 2039, and over that time period make £4.5 million available to support communities. Each year, the fund makes around £170,000 available, and includes an initial fund of £228,000, and this supports the community Council areas of:

- Bettyhill, Strathnaver and Altnaharra;
- Melvich;
- Strathy and Armadale.

SSE has developed strong relationships with the communities and their representatives and has held a number of events to find out their needs and views on a range of proposed projects.

The community councils were initially asked if they wanted individual pots of money or a joint fund. Given their common issues and needs and the interdependence of the communities, with many of the facilities such as shops, schools and leisure facilities being shared, it was decided that a pooled fund would best meet their needs.

As of August 2019, the fund has paid or approved grants of over £1.0 million to the local communities. This represents a significant investment, especially given the relatively small population of the local area. Examples are discussed in Section 4.4.

## 4.3 Application Process

The community fund supports a range of activities and services that build the sustainability and vibrancy of the local area. Potential uses for the fund include:

- group running costs;
- employees or essential workers;
- events and festivals;
- the cost of purchasing equipment; and
- maintenance or refurbishment of community facilities.



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Funding applications are received at three deadlines throughout the year in February, June and October. Each group that is applying for funding has to submit an application as well as any supporting documentation, such as accounts. The Community Investment Manager then writes an assessment of each application and performs due diligence.

The assessment is then forwarded to a panel of local people, including community council representatives that decides if the application should be funded. At this stage conditions can be attached by the panel or by the Community Investment Manager, such as ensuring access for disadvantaged groups.

## 4.4 Funded Projects

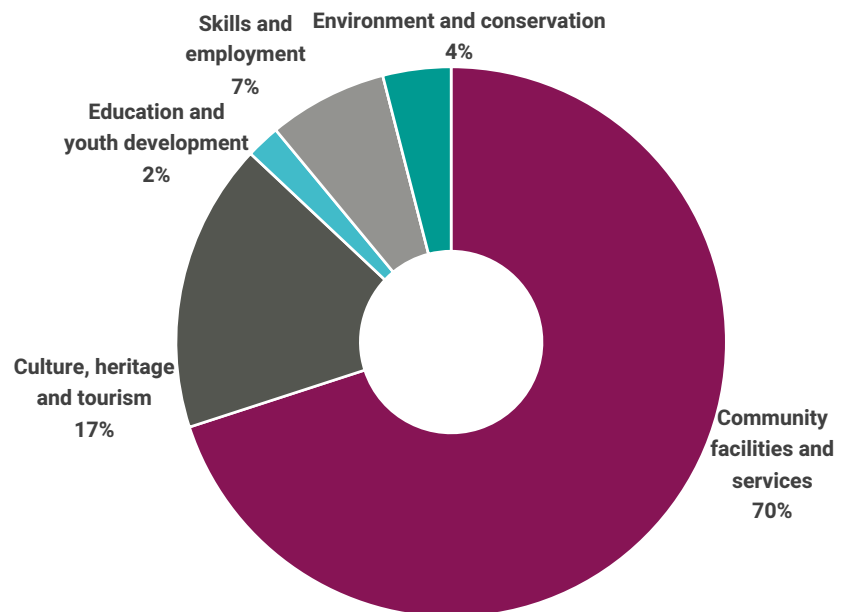
To date about 120 projects have been funded by the Strathly North Joint Community Fund. These have included:

- local lifeguard training;
- befriending groups for the elderly;
- contributing to staff and running cost as leisure centres and trusts;
- summer facilities for children;
- refurbishing the war memorial in Melvich;
- helping to fund the purchase of Reay Golf Club, on the condition that a set number of days are accessible to local children; and
- the Fèis Air an Oir, an annual festival that supports music tuition for children and young people.

The share of awards by category in 2018/19, is presented in [Figure 4-2](#) below. The main category of awards is community facilities and services, which includes the Armadale Village Hall, which is discussed as a case study below.



**Figure 4-2 – Fund Awards by Strathy North Community Fund, 2018/19**



Source: SSE (2019), SSE Community Investment Review 2018/19

The funding enables the communities to have more control over their villages and focus on the social, economic and environmental priorities that are most important to them, and support initiatives boosting local tourism, education and infrastructure.

#### **4.4.1 Armadale Village Hall**

The community in Armadale initially approached the fund, seeking help with refurbishment costs, although early studies discovered that the building had no foundations and was a structural risk. The fund therefore supported the building of a new village hall and enabled the community to receive match funding from two other sources.

The hall, which is scheduled to be completed in June 2020, will support village life, providing a venue for people to meet and hold events. In addition, it will have facilities, such as showers and chemical toilets, for tourists on the North Coast 500. In addition to reducing the environmental impact of tourism, it will increase opportunities for the village to benefit from tourism spending.

To date, the fund has offered almost £0.3 million to support building and developing the hall, making it the most significant project supported by the fund.

#### **4.4.2 Melvich Bay**

A further project that has been funded is the enhancement of the slipway at Portskerra, which overlooks Melvich Bay. The fund provided £15,000 to support the project, with a further £4,000 coming from other funders, enabling them to refurbish the slipway and create a hardstanding for turning. The fund has also provided an additional £12,000 to Portskerra Harbour Authority for supplementary work.



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The project has improved the safety of the slipway and led to higher usage. For example, the improvements make it possible for local fishermen to operate out of the harbour. One fisherman commented that after “20 years nothing really seemed to be getting done with the slipway” but now “it’s brought commercial fishing back to the village.”

The work has also enabled recreational users, such as Caithness Diving Club and Pentland Canoe Club, and local tourism ventures to access the coves and coastline.

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## **“It’s brought commercial fishing back to the village.”**

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### **4.4.3 Farr Edge 2000**

The fund has made several awards totalling £67,627.22 to Farr Edge 2000 to enable the only childcare and youth service based within the communities to deliver holiday and year-round activities. The activity programme is designed in consultation with the young people, offering opportunities to address rural isolation.

One of the awards was used to upgrade the premises to provide a safe and secure environment appropriate for use across the wide age range from 0-18. The Strathy North Fund has helped maintain this crucial service for families and young people and the funding provided has enabled the organisation to secure additional match funding.

### **4.4.4 Summary of Community Benefit**

The contribution over the lifetime of the wind farm to the Strathy North Community Fund will be £4.5 million, with a contribution of £170,000 annually<sup>7</sup> and an initial fund of £228,000. This will be distributed to the relatively small community council areas of Strathy and Armadale, Bettyhill, Strathnaver and Altnaharra, and Melvich, with which SSE Renewables has developed a strong relationship.

To date, grants of £1.0 million have been approved, supporting and strengthening local communities. This includes a grant that has renovated Portskerra Slipway, Melvich, supporting local fishing as well as tourism and recreation. It also includes a substantial grant of £0.3 million to support the construction of the new Armadale Community Hall, which will provide a space for local people, and enable the community to take advantage of the opportunities presented by the North Coast 500.

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<sup>7</sup> From Year 5 this will increase in line with the Retail Price Index measures on inflation, applied every 5 years.





## 5.

# Appendix A – Consultations

Below is the list of people consulted as part of the consultation process, as well as their role and organisation.

**Table 5.1 Consultations**

<b>Consultee</b>	<b>Role</b>	<b>Organisation</b>
Rod Crawford	Project Manager	SSE Renewables
Ian Gunn	Director	Gunn
Fiona Morrison	Community Investment Manager	SSE Renewables
Charles Murray	Director	Charles Murray Agricultural Engineers
Angela Rae	Agent	RJ McLeod
Michael Smith	Business Development Manager	MM Miller
David Turney	Site Supervisor	SSE Renewables



6.

## Appendix B – Economic Impact Methodology

This section gives a detailed discussion of the methodology used to estimate the economic impact of Strathy North Wind Farm.

### 6.1 Metrics of Assessment

The primary metrics of assessment used in this report are:

- Gross Value Added (GVA) – this is a measure of economic value added by an organisation or industry. It is typically estimated by subtracting the non-staff operational costs from the revenues of an organisation; and
- Years of employment – this is a measure of the employment which is equivalent to one person being employed for an entire year and is typically used when considering short-term employment impacts, such as those associated with construction and infrastructure projects; and
- Jobs – this is a measure of employment which considers the headcount employment in an organisation or industry.

In addition, in some instances where impacts are expected to occur over a number of years, a discount rate has been applied. This allows impacts that occur sooner to be valued more highly than impacts that occur in the future, a concept known as time preference. In this instance a discount rate of 3.5% has been chosen, which is in line with the UK Government's Green Book<sup>8</sup>.

### 6.2 Types of Impact

Impacts have been measured across three different project stages: development expenditure (DEVEX), capital expenditure (CAPEX) and operational expenditure (OPEX). DEVEX and CAPEX have already occurred (or will occur in the very near future), and OPEX is expected to occur in the over the 25-year operational lifetime of Strathy North Wind Farm

There are three significant types of economic impact associated with Strathy North Wind Farm:

- direct impact – this is the direct impact associated with Tier 1 suppliers, which will include employing and paying staff, and generating profits;

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<sup>8</sup> HM Treasury (2018), The Green Book: Central Government Guidance on Appraisal and Evaluation



- indirect impact – this is the impact associated with spending in the supply chain of Tier 1 suppliers; and
- induced impact – this is the impact associated with staff spending their wages in the wider economy.

This approach captures the economic activity that may not be immediately identifiable as deriving from Strathy North Wind Farm. For example, if a hotel receives a significant level of custom for half a year from contractors working on Strathy North Wind Farm, then the jobs supported in this time at the hotel will be captured in this model. These will be in addition to the direct jobs of the contractors. Similarly, if Strathy North Wind Farm procured the services of a helicopter rental company, the helicopter pilot would be included in the jobs impact. A proportion of a mechanics job, who was paid to maintain the helicopter would also be included in this model.

## 6.3 Input-Output Modelling

### 6.3.1 Study Areas

The study areas considered as part of this report are:

- Caithness and North Sutherland, which is the area covered by the Caithness and North Sutherland Regeneration Partnership (CNSRP);
- Highland, which is the Highland Council Area;
- Scotland; and
- the UK.

The impacts in this study are reported inclusively unless otherwise stated. Therefore the figures given for the impact in Highland include the impacts in Caithness and North Sutherland.

### 6.3.2 Development Expenditure (DEVEX) and Capital Expenditure (CAPEX)

The first part of the Input-Output modelling exercise was to establish the inputs. This was the cost of each contract, and this data was provided by SSE Renewables, which managed the project. As well as representing a cost to the developer, these transactions represent an increase in turnover to the company providing the service, supporting economic activity.

Each transaction was categorised as being either UK or non-UK, and if the contractor was based in the UK it was also considered whether the impact was Scottish or non-Scottish. In some instances, where the supplier is based abroad but a portion of the economic activity is likely to occur in either of the study areas, an assumption was made about the proportion of the contract that might occur in Scotland or the UK.

Transactions were then categorised to one of the Input-Output sectors used by the Scottish and UK Governments in the Input-Output Tables, e.g. construction, mining support services, architectural and engineering services etc. These sectors were used as the basis for estimating GVA and employment impacts. Information on



turnover, GVA and employment is sourced from the UK Annual Business Survey (ABS), which is published by the Office for National Statistics (ONS)<sup>9</sup>. In some cases, where data is not available in the ABS, this has been supplemented by data from the UK Input-Output Tables<sup>10</sup> and the Business Register and Employment Survey<sup>11</sup>.

For each sector GVA can be presented as a % of turnover and therefore, in order to estimate the direct GVA impact, turnover is multiplied by GVA/turnover. Similarly, to estimate the direct employment impacts turnover in each contract is divided by turnover/employee in the relevant sector.

This is demonstrated in [Figure 6.1](#).

**Figure 6.1 Direct Impact**

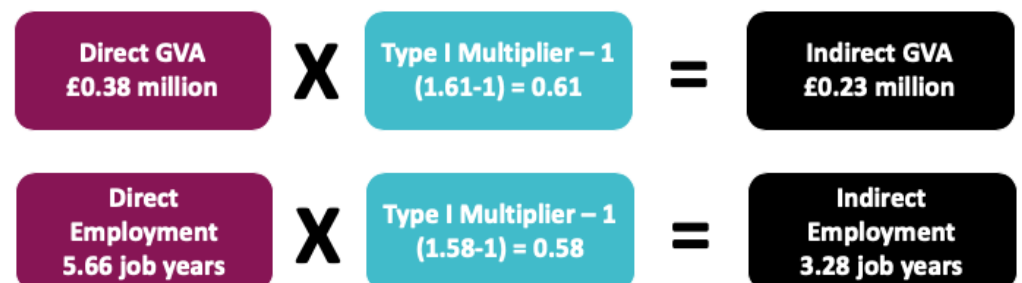


Source: BiGGAR Economics

As well as the direct GVA and employment impacts, there will also be indirect and induced impacts associated with spending in the wider supply chain and employee's expenditure. These impacts were estimated by applying sector-specific Type I (indirect) and Type II (indirect and induced) multipliers to the direct impact. These multipliers were sourced from the ONS<sup>12</sup> and the Scottish Government<sup>13</sup>.

This is demonstrated in [Figure 6.2](#) and [Figure 6.3](#).

**Figure 6.2 Indirect Impact**



Source: BiGGAR Economics

<sup>9</sup> Office for National Statistics (2018), Annual Business Survey – 2017 Provisional Results

<sup>10</sup> ONS (2018), UK Input-Output Tables 2015

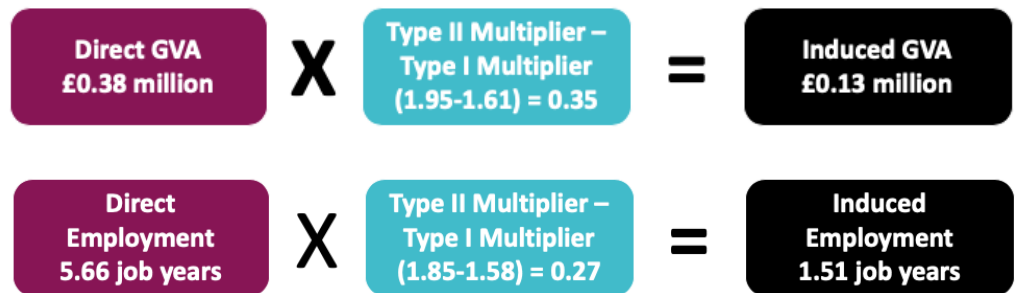
<sup>11</sup> ONS (2019), Business Register and Employment Survey

<sup>12</sup> ONS (2018), UK Input-Output Tables 2015

<sup>13</sup> Scottish Government (2018), Input-Output Tables 2015



**Figure 6.3 Induced Impact**



Source: BiGGAR Economics

The total GVA and employment impacts of Strathy North Wind Farm are the direct impacts, added to the indirect and induced impacts (Figure 6.4).

**Figure 6.4 Total Impact**



Source: BiGGAR Economics

### 6.3.3 Operational Expenditure (OPEX)

As with the DEVEX and CAPEX, it was first necessary to establish the costs of operating the development, which was projected over a time period of 25 years. The basis of this was an internal financial modelling exercise at SSE Renewables, which considered different components of spending such as operational costs, grid costs and insurance.

A proportion of each category of spend was assumed to take place either in Scotland or the UK, and each category was assigned to one of the Input-Output sectors. Direct GVA and employment impacts, as well as indirect and induced impacts, were then estimated using the same method as outlined.

### 6.3.4 Net Present Value

The long-term impacts are represented in terms of their net present value (NPV). This is an adjustment made to impacts that will be realised in the future to reflect the fact that benefits realised in the future are valued less than those realised in present time.

To reflect this, impacts which are expected to be realised in the future are discounted at a rate of 3.5% has been chosen, which is in line with the UK



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Government's Green Book<sup>14</sup>. This is applied to all impacts that will occur after the 2019/20 financial year.

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<sup>14</sup> HM Treasury (2018), The Green Book: Central Government Guidance on Appraisal and Evaluation



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