

# Economic Impact of SSE Renewables Projects in Sutherland

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A report to SSE Renewables  
December 2020





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# 1.

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## Executive Summary

The development, construction and operation of four wind farms in Sutherland has generated significant substantial local, regional and national impacts.

SSE Renewables has four wind farms in Sutherland that it has either built and is operating, or is in the process of building, including:

- Strathy North Wind Farm, near the village of Strathy, which has a capacity of 67.65MW became operational in 2015;
- Achany Wind Farm, near Lairg, which has a capacity of 38MW and became operational in 2010;
- Gordonbush Wind Farm, west of Brora, which has a capacity of 71.75MW and became operational in 2012; and
- Gordonbush Extension, which will generate up to 38MW and is expected to become operational in 2021.

These projects were developed and built at an estimated cost of **£362 million** (DEVEX/CAPEX). Operational expenditure is expected to amount to **£282 million** over their operational lifetimes of 25 years each. The expected total expenditure (TOTEX) is therefore **£644 million**.

During the development and construction phases, it was estimated that the UK secured contracts worth **£182 million** and is expected to secure **£247 million** in operation and maintenance contracts over the operational lifetimes of the projects (£10 million annually). Overall the expenditure secured in the UK is expected to be **£429 million, or 67% of TOTEX**.

It was also estimated that:

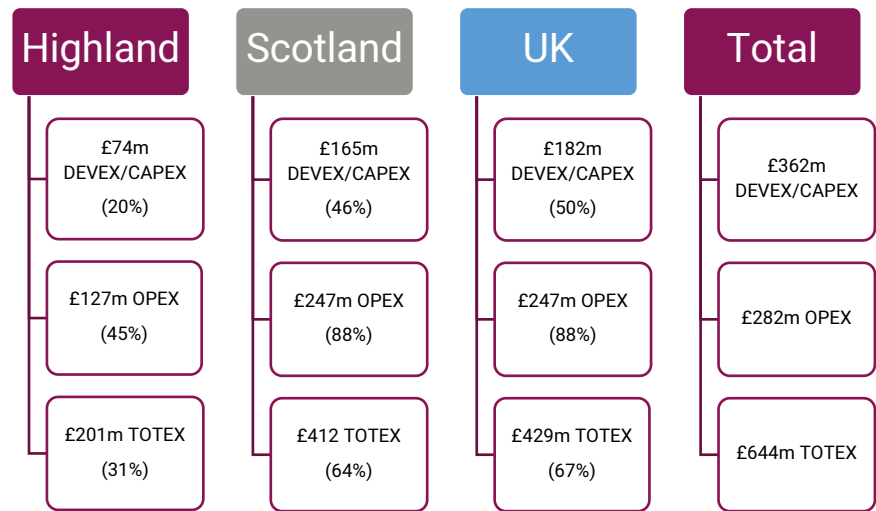
- Scotland secured **£165 million** in DEVEX/CAPEX contracts and **£247 million** in OPEX contracts (£10 million annually). Overall, it is expected to secure **£412 million, or 64% of TOTEX**; and
- Highland<sup>1</sup> secured **£74 million** in DEVEX/CAPEX contracts and **£127 million** in OPEX contracts (£5 million annually). Overall, it is expected to secure **£201 million, or 31% of TOTEX**.

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<sup>1</sup> As defined by the Local Authority Area of Highland



**Figure 1-1 Sutherland Projects – Contract Values and Shares by Stage**



This expenditure supports local economic activity, measured in Gross Value Added (GVA), which is measure of economic activity that includes wages and profits, and employment.

During the development and construction phase it was estimated that the four projects supported:

- **£43 million GVA** and **520 years of employment** in Highland;
- **£129 million GVA** and **1,710 years of employment** in Scotland; and
- **£190 million GVA** and **2,840 years of employment** in the UK.

The economic activity includes the contractors directly employed to build the four projects, and it also includes the wider economic impact associated with these companies spending in their supply chain (the indirect impact) and the spending of employees in their supply chain (the induced impact).

There would also be long-term economic impacts associated with the projects as a result of OPEX, which includes the direct, indirect and induced impacts. It was estimated that in an average year, the projects would support:

- **£4 million GVA** and **50 jobs** in Highland;
- **£8 million GVA** and **120 jobs** in Scotland; and
- **£12 million GVA** and **180 jobs** in the UK.



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## 2.

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# Introduction

In 2020, BiGGAR Economics was commissioned by SSE Renewables to undertake a socio-economic impact assessment of four wind farms in Sutherland.

## 2.1 Background

The study considers the economic impact of four wind farms in Sutherland, including:

- Strathy North Wind Farm, near the village of Strathy, which has a capacity of 67.65MW became operational in 2015;
- Achany Wind Farm, near Lairg, which has a capacity of 38MW and became operational in 2010;
- Gordonbush Wind Farm, west of Brora, which has a capacity of 71.75MW and became operational in 2012; and
- Gordonbush Extension, which has a capacity of 47MW and is expected to become operational in 2021.

## 2.2 Approach

Details on the approach taken to quantifying the economic impact of the projects and the sources used are provided in Appendix A. 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.

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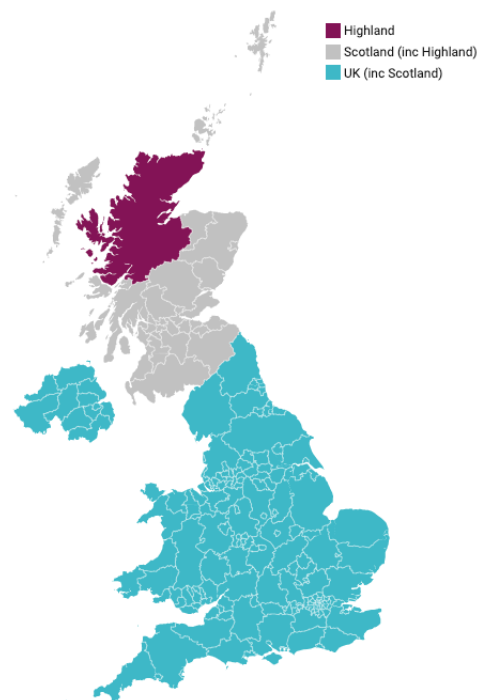
### 2.2.2 Study Areas

The study areas considered as part of this report are:

- Highland, which is the Highland Council Area;
- Scotland; and
- the UK.

The study areas are shown in Figure 2-1.

**Figure 2-1 Study Areas**



Source: BiGGAR Economics

The impacts in this study are reported inclusively unless otherwise stated. Therefore, the figures given for the impact in Scotland include the impact in Highland, and the figures for the impact in the UK include the impact in Scotland.

### 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.



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There are three significant types of economic impact associated with these wind farms:

- direct impact – this is the direct impact associated with Tier 1 suppliers, 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>2</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>3 4</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 consultations were undertaken with staff within SSE and with a number of contractors to gain a better understanding of project expenditure in the study areas. This included consultations that took place in place in 2019 as part of a study focusing on Strathy North Wind Farm. A list of consultees is provided in Appendix B.

## **2.3 Report Structure**

The remainder of this report is structured as follows:

- Chapter 3 quantifies the economic impact of the Sutherland Wind Farms;
- Chapter 4 is an Appendix outlining more details on the methodology used in this study; and
- Chapter 5 is an Appendix that lists the consultations undertaken to inform the analysis; and
- Chapter 6 is an Appendix detailing the economic impacts of each wind farm.

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<sup>2</sup> Office for National Statistics (2020), Annual Business Survey 2018 Revised

<sup>3</sup> Scottish Government (2020), Input-Output Tables 2017

<sup>4</sup> ONS (2018), UK Input-Output Tables 2015



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# 3. Economic Impact of SSE Renewables Projects in Sutherland

This chapter considers the economic impact of the SSE Renewables' wind farms in Sutherland during their development and construction, and operational phases.

## 3.1 Development and Construction Impacts

The combined development expenditure (DEVEX) and capital expenditure (CAPEX) for developing and constructing each of the wind farms was £362 million, denoted in 2019 prices. The cost in 2019 prices of:

- Strathy North Wind Farm was £119 million;
- Achany Wind Farm was £76 million;
- Gordonbush Wind Farm was £126 million; and
- the Gordonbush Extensions is projected to be £40 million.

SSE Renewables provided data on companies that were involved in each stage of the projects. Based on BiGGAR Economics' analysis of this data, it was assumed that 20% of contracts would be secured in Highland (£74 million), 46% would be secured in Scotland (£165 million), and 50% would be secured in the UK (£182 million).





## RJ McLeod

SSE Renewables has ensured a high level of local content by using Dingwall based RJ McLeod as the main civil contractor on all four wind farms.

The construction of Achany Wind Farm in 2009 was the first onshore wind project that RJ McLeod was involved with. At that time, renewable energy projects accounted for around 20% of the turnover of the company. Through the experience that RJ McLeod gained on Achany, and the subsequently Gordonbush Wind Farm and Strathy North Wind Farm, it was able to grow this area of business and secure wind farm contracts further afield. At times, renewable energy has accounted for the majority of its turnover.

RJ McLeod has a strong relationship with its supply chain and subcontractors within Caithness, Sutherland and the wider Highland region. It considers itself to be a Highland contractor and aims to only procure subcontractors from outside of Highland if there is no capacity within the area to meet their demands. It does this through nurturing strong relationships with its supply chain over time and by using the Open4Business platform, which was created by SSE in 2012 and is now operated by Inverness Chamber of Commerce on behalf of Highlands and Islands Enterprise, to reach new suppliers in the area who can bid for the smaller contracts. While other civil contractors may use some local content, the approach of RJ McLeod generates the greatest possible economic impact in Highland from the civil contract.

### **Appointing RJ McLeod as the lead civil contractor on these four wind farms ensured the maximum possible benefit to the Highland economy**

When it was introduced to the onshore wind market, through SSE Renewables work in Sutherland, RJ McLeod brought with it many local contractors who have gone on to benefit from wider opportunities in the onshore wind market. This includes companies such as Gow Groundworks in Halkirk, CS Drilling in Thurso and others that have used the experience as subcontractors to RJ McLeod on these wind farms to develop specialist skills that they have used to secure contracts elsewhere. In this way, the SSE Renewables' wind farms in Sutherland have served as a catalyst for developing onshore wind expertise in the area.



Each contract secured by a company represents an increase in turnover of that company, which will in turn generate an increase in its economic impact. For each transaction an economic sector was assigned, for example construction, and turnover to GVA ratios were then applied to estimate the direct GVA created.

Wider impact as a result of spending in the supply chain (indirect impacts) and spending by staff (induced impacts) were captured by applying Type I and Type II economic multipliers to the direct GVA.

Therefore, it was estimated that during the development and construction phase, the projects supported £43 million GVA in Highland, £129 million GVA in Scotland, and £190 million GVA in the UK.

**Table 3.1 Economic Impact of Development and Construction Expenditure, GVA (£m)**

	Highland	Scotland	UK
Direct impact	30	73	81
Indirect impact	6	33	60
Induced impact	7	23	49
<b>Total</b>	<b>43</b>	<b>129</b>	<b>190</b>

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

The contracts also supported direct 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 during the construction and development phase, the Sutherland Wind Farms supported 520 years of employment in Highland, 1,710 years of employment in Scotland, and 2,840 years of employment in the UK.



**Table 3.2 Economic Impact of Construction and Development Expenditure, Employment (years of employment)**

	Highland	Scotland	UK
Direct impact	360	990	1,110
Indirect impact	90	460	960
Induced impact	80	260	770
<b>Total</b>	<b>520</b>	<b>1,710</b>	<b>2,840</b>

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

## 3.2 Operational Impacts

This section considers the long-term impact that will occur during the operational lifetimes of SSE Renewables' onshore wind farms in Sutherland.

SSE Renewables provided financial data and projections on each of the projects. This indicates that over the lifetimes of each project operational expenditures (OPEX) is expected to be £282 million, with

- OPEX at Strathy North Wind Farm of £115 million;
- OPEX at Achany Wind Farm of £55 million;
- OPEX at Gordonbush Wind Farm of £94 million; and
- OPEX at the Gordonbush Extension of £18 million.

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.

### 3.2.1 Average Annual Operational Expenditure

Over 25 years, the average annual operational expenditure was projected to be £12 million, with £5 million taking place in Highland, and £10 million taking place the UK, of which all is expected to be spent within Scotland.



**Table 3.3 Annual Operational Expenditure by Study Area (£m)**

	<b>Highland</b>	<b>Scotland</b>	<b>UK</b>	<b>Total</b>
Turnover	5	10	10	12
Turnover (%)	45%	88%	88%	-
Lifetime	127	247	247	282

Source: SSE Renewables/BiGGAR Economics Assumptions

Applying appropriate economic ratios and multipliers indicates that this expenditure could support £4 million GVA and 50 jobs annually in Highland, £8 million GVA and 120 jobs annually in Scotland, and £12 million GVA and 180 jobs annually in the UK<sup>5</sup>.

<sup>5</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.



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## Melvich Hotel

Demand for accommodation from workers on the Sutherland wind farms has enabled some accommodation providers to remain open during the winter season.

Melvich Hotel, based in the village of Melvich near the site of Strathy North Wind Farm, has been in operation since 1850 and has been run by Rob and Jo Wyke since 2007. The hotel has 13 beds and also operates a restaurant and public house. As an accommodation provider in the Highland area, the business is seasonal with the hotel closing in November and opening in late March/early April. Typically, two full-time staff are employed during the winter months, increasing to four full-time and five part-time staff during the summer months.

During the two year construction phase of Strathy North Wind Farm, the hotel was the 'go to' provider for many contractors coming to the site. This led to increased occupancy rates, particularly in the shoulder seasons of spring and autumn, and the hotel was able to remain fully open through two winter seasons. Other accommodation providers, in the area, such as Bettyhill Hotel and self-catering providers, also benefitted from increased business visitors. There has been continuing activity supported as SSE Renewables develops the neighbouring Strathy South Wind Farm.

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### **The business from the construction workers of Strathy North provided employment for four full time members of staff at Melvich Hotel.**

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As a part of the wider community, the hotel has also benefitted from wider benefits supported by the wind farm, such as improvements in the road network, which provide a safe, high-quality road for walking and cycling, and investments supported by the community benefit fund. This has included Melvich Harbour improvements, general tourism improvements and promotional material for the North Coast 500, which has generated a significant boost in tourism activity and occupancy rates since it was launched in 2015.



**Table 3.4 Economic Impact of Annual Operational Expenditure, GVA (£m)**

	Highland	Scotland	UK
Direct impact	3	6	6
Indirect impact	<1	1	3
Induced impact	<1	1	4
<b>Annual</b>	<b>4</b>	<b>8</b>	<b>12</b>
Lifetime	88	198	294

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

**Table 3.5 Economic Impact of Annual Operational Expenditure, Employment (jobs)**

	Highland	Scotland	UK
Direct impact	40	80	80
Indirect impact	<10	20	40
Induced impact	10	20	60
<b>Annual</b>	<b>50</b>	<b>120</b>	<b>180</b>

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



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## Highland Hydroseeding

A landscaping business based in Forss, near Thurso, has added onshore wind farms to its list of specialisms.

Highland Hydroseeding is a groundcare and landscaping business based in Caithness, which was established in 1988. The company has five full-time employees, including a father and son team, and also employs contractors for bigger contracts.

The company worked on the Strathy North Wind Farm during the construction phase, and the contract included hydroseeding (applying a mix of seed, water and fibre mulch) a large area to prevent soil and peat erosion, with a seed mix specified by NatureScot (Formerly SNH) as part of the application process. The work was carried out over a season, with typically 3 or 4 employees working on it at a time.

In addition to the work during the construction period, Highland Hydroseeding has also secured landscaping contracts for the maintenance of the substation that serves Strathy North Wind Farm.

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**“I think [SSE’s] investment up north has been really good and I appreciate that they’re employing local people when they can”**

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Developing a relationship with RJ McLeod and SSE has been important in securing additional work for the company. Strathy North Wind Farm was the first onshore wind project that Highland Hydroseeding had worked on and it has since worked on a number of other wind farms, including SSE Renewables’ Stronelairg Wind Farm and Greencoat’s Tom nan Clach Wind Farm, and is discussions about providing reinstating for the Gordonbush Extension.



### 3.2.2 Net Present Value Impact

Over 25 years, the NPV of operational expenditure was projected to be £204 million, with £92 million taking place in Highland, and £180 million taking place the UK, of which all is expected to be spent within Scotland.

**Table 3.6 NPV Operational Expenditure by Study Area (£m)**

	Highland	Scotland	UK	Total
Turnover	92	179	179	204
Turnover (%)	45%	88%	88%	-

Source: SSE Renewables/BiGGAR Economics Assumptions

Applying appropriate economic ratios and multipliers indicates that this expenditure could support £64 million GVA in Highland, £145 million GVA in Scotland, and £212 million GVA in the UK.

**Table 3.7 NPV Economic Impact of Operational Expenditure, GVA (£m)**

	Highland	Scotland	UK
Direct impact	51	101	101
Indirect impact	4	21	41
Induced impact	8	23	71
<b>Total</b>	<b>64</b>	<b>145</b>	<b>212</b>

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





## Waverley Engineering

The Golspie based contractor has been able to provide multiple services to SSE Renewables in Sutherland.

Waverley Engineering is a construction contractor, plant supplier and commercial repair company based in Golspie. It employs between 5 and 10 people depending on demand, including apprentices.

Waverley Engineering was contracted to work on the construction phase of Achany Wind Farm, Strathy North Wind Farm and Gordonbush Wind Farm, and is currently working on the Gordonbush Extension. The company has provided a range of services, such as landscaping, enabling works and leasing equipment. The construction phases of these projects have been a significant source of activity, with typically 2-3 employees on site.

The company also undertakes ongoing operation and maintenance contracts for Achany Wind Farm and Gordonbush Wind Farm, which includes landscaping, road repairs, drainage, plate testing and snow clearance.

Gordonbush Wind Farm was also important as it was the first project with RJ McLeod, which has since proven a productive long-term relationship, as well as strengthening their relationship with SSE Renewables. In addition, Gordonbush Wind Farm was the first onshore wind project that the company had worked on, and it has since worked on a number of wind farms, often with RJ McLeod, outside of Sutherland, including SSE Renewables' Stronelaig Wind Farm and ScottishPower Renewable's Beinn Tharsuin Wind Farm. These projects have supported the company's growth, and provided a base for working on projects as far afield as Aberdeen.

In addition to working directly on these onshore wind farms, Waverley Engineering has also been involved in projects that have been funded by these wind farms' community benefit funds that have been established in the area. This included Golspie Community Council's £29,000 project to upgrade the Big Burn walk to make it more accessible for disabled and pushchair users. The project was part funded by the Gordonbush Wind Farm Community Benefit Fund.



### 3.3 Summary of the Economic Impact

The total expenditure associated with the Sutherland Wind Farms, including DEVEX, CAPEX, and OPEX is expected to be £644 million. Of this:

- £201 million (31%) are expected to be secured in Highland,
- £412 million (64%) is expected to be secured in Scotland, and
- £429 million (67%) is expected to be secured in the UK.

As can be seen in Table 3.8 the main opportunity for the local areas is operations and maintenance.

**Table 3.8 Total Expenditure: Turnover by Study Area (£m)**

	Highland	Scotland	UK	Total
DEVEX/CAPEX	74	165	182	362
OPEX	127	247	247	282
<b>TOTEX</b>	<b>201</b>	<b>412</b>	<b>429</b>	<b>644</b>
Total (%)	31%	64%	67%	-

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

## £201 million is expected to be spent in the Highland Council Area as a result of these wind farms over their lifetime

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

- £131 million GVA in Highland;
- £327 million GVA in Scotland; and
- £485 million GVA in the UK.

**Table 3.9 Total Expenditure: Economic Impact, GVA (£m)**

	Highland	Scotland	UK
DEVEX/CAPEX	43	129	190
OPEX	88	198	295
<b>TOTEX</b>	<b>131</b>	<b>327</b>	<b>485</b>

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



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## 4.

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# Appendix A – Economic Impact Methodology

This section gives a detailed discussion of the methodology used to estimate the economic impact of the Sutherland Wind Farms.

## 4.1 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>6</sup>.

## 4.2 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 lifetimes of the wind farms

There are three significant types of economic impact associated with the wind farms:

- 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>6</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 the wind farms. For example, if a hotel receives a significant level of custom for half a year from contractors working on Strata 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 the 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.

## 4.3 Input-Output Modelling

### 4.3.1 Study Areas

The study areas considered as part of this report are:

- 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 Scotland include the impact in Highland, and the impact for the UK include the impact in Scotland.

### 4.3.2 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. In some instances where data was not available at a more granular level industry averages, based on studies by BiGGAR Economics<sup>7 8</sup> were used to inform the split by type of contract. 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 sectors used by the Scottish and UK Governments in official statistics, e.g. construction, mining support services,

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<sup>7</sup> BiGGAR Economics (2012), Onshore Wind – Direct and Wider Impacts

<sup>8</sup> BiGGAR Economics (2015), Onshore Wind – Economic Impacts in 2014



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>.

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 4-1.

**Figure 4-1 Direct Impact**

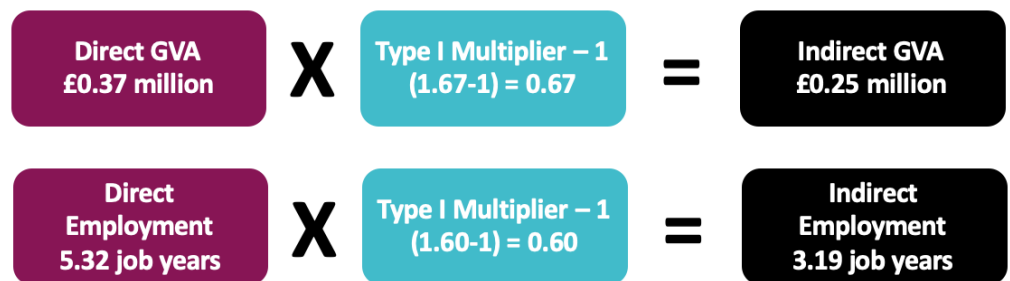


Source: BiGGAR Economics

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>10</sup> and the Scottish Government<sup>11</sup>.

This is demonstrated in Figure 4-2 and Figure 4-3.

**Figure 4-2 Indirect Impact**



Source: BiGGAR Economics

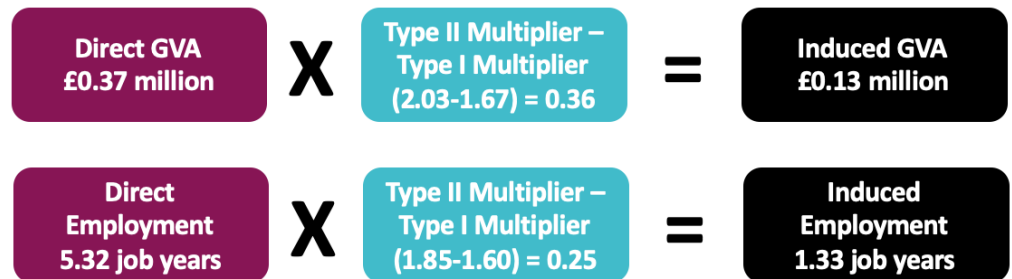
<sup>9</sup> Office for National Statistics (2020), Annual Business Survey – 2018 Revised Results

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

<sup>11</sup> Scottish Government (2020), Input-Output Tables 2017



**Figure 4-3 Induced Impact**



Source: BIGGAR Economics

The total GVA and employment impacts of the projects are the direct impacts, added to the indirect and induced impacts (Figure 4-4).

**Figure 4-4 Total Impact**



Source: BIGGAR Economics

### 4.3.3 Operational Expenditure (OPEX)

As with the DEVEX and CAPEX, it was first necessary to establish the costs of operating the developments, which were projected over a 25 year period. The basis of this was an internal financial modelling exercise at SSE Renewables, which considered components of spending such as operational 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 sectors. Direct GVA and employment impacts, as well as indirect and induced impacts, were then estimated using the same method as outlined.

### 4.3.4 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 that benefits realised in the future are valued less than those realised in the present.

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 Government’s Green Book<sup>12</sup>. This is applied to all impacts that will occur after the 2019/20 financial year.

<sup>12</sup> HM Treasury (2018), The Green Book: Central Government Guidance on Appraisal and Evaluation



## 5.

# Appendix B – 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**

Consultee	Role	Organisation
Rod Crawford	Project Manager	SSE Renewables
Richard Gordon	Director	Waverley Engineering
Ian Gunn	Director	Gunn
Donald MacDonald	Director	Highland Hydroseeding
Duncan MacKay	Sole trader	-
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
Jo Wyke	Director	Melvich Hotel

## 6.

# Appendix C – Project Impacts

This appendix presents the impacts of each of the four projects individually.

## 6.1 Strathy North Wind Farm

It is expected that the total expenditure associated with the DEVEX/CAPEX and OPEX of the Strathy North Wind Farm would be £234 million, of which:

- £75 million is expected to be secured in Highland (32%);
- £163 million is expected to be secured in Scotland (70%); and
- £168 million is expected to be secured in UK (72%).

**Table 6.1 Strathy North Wind Farm: Total Expenditure - Turnover by Study Area (£m)**

	Highland	Scotland	UK	Total
DEVEX/CAPEX	23	62	67	119
OPEX	52	101	101	115
<b>TOTEX</b>	<b>75</b>	<b>163</b>	<b>168</b>	<b>234</b>
Total (%)	32%	70%	72%	-

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:

- £49 million GVA in Highland;
- £129 million GVA in Scotland; and
- £199 million GVA in UK.

**Table 6.2 Strathy North Wind Farm: Total Expenditure – Economic Impact, GVA (£m)**

	Highland	Scotland	UK
DEVEX/CAPEX	14	49	76
OPEX	35	80	123
<b>Total</b>	<b>49</b>	<b>129</b>	<b>199</b>

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





## 6.2 Achany Wind Farm

It is expected that the total expenditure associated with the DEVEX/CAPEX and OPEX of the Achany Wind Farm would be £131 million, of which:

- £40 million is expected to be secured in Highland (31%);
- £81 million is expected to be secured in Scotland (62%); and
- £86 million is expected to be secured in UK (66%).

**Table 6.3 Achany Wind Farm: Total Expenditure - Turnover by Study Area (£m)**

	Highland	Scotland	UK	Total
DEVEX/CAPEX	15	33	38	76
OPEX	25	48	48	55
<b>TOTEX</b>	<b>40</b>	<b>81</b>	<b>86</b>	<b>131</b>
Total (%)	31%	62%	66%	-

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:

- £26 million GVA in Highland;
- £65 million GVA in Scotland; and
- £94 million GVA in UK.

**Table 6.4 Achany Wind Farm: Total Expenditure – Economic Impact, GVA (£m)**

	Highland	Scotland	UK
DEVEX/CAPEX	9	26	38
OPEX	17	38	56
<b>Total</b>	<b>26</b>	<b>65</b>	<b>94</b>

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



## 6.3 Gordonbush Wind Farm

It is expected that the total expenditure associated with the DEVEX/CAPEX and OPEX of the Gordonbush Wind Farm would be £220 million, of which:

- £69 million is expected to be secured in Highland (31%);
- £140 million is expected to be secured in Scotland (63%); and
- £148 million is expected to be secured in UK (67%).

**Table 6.5 Gordonbush Wind Farm: Total Expenditure - Turnover by Study Area (£m)**

	Highland	Scotland	UK	Total
DEVEX/CAPEX	26	55	64	126
OPEX	43	84	84	94
<b>TOTEX</b>	<b>69</b>	<b>140</b>	<b>148</b>	<b>220</b>
Total (%)	31%	63%	67%	-

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:

- £46 million GVA in Highland;
- £114 million GVA in Scotland; and
- £166 million GVA in UK.

**Table 6.6 Gordonbush Wind Farm: Total Expenditure – Economic Impact, GVA (£m)**

	Highland	Scotland	UK
DEVEX/CAPEX	15	44	63
OPEX	31	70	103
<b>Total</b>	<b>46</b>	<b>114</b>	<b>166</b>

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



## 6.4 Gordonbush Extension

It is expected that the total expenditure associated with the DEVEX/CAPEX and OPEX of the Gordonbush Extension would be £59 million, of which:

- £17 million is expected to be secured in Highland (29%);
- £28 million is expected to be secured in Scotland (46%); and
- £28 million is expected to be secured in UK (46%).

**Table 6.7 Gordonbush Extension: Total Expenditure - Turnover by Study Area (£m)**

	Highland	Scotland	UK	Total
DEVEX/CAPEX	10	13	13	41
OPEX	8	14	14	18
<b>TOTEX</b>	<b>17</b>	<b>28</b>	<b>28</b>	<b>59</b>
Total (%)	29%	46%	46%	-

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:

- £10 million GVA in Highland;
- £19 million GVA in Scotland; and
- £27 million GVA in UK.

**Table 6.8 Gordonbush Extension: Total Expenditure – Economic Impact, GVA (£m)**

	Highland	Scotland	UK
DEVEX/CAPEX	5	10	14
OPEX	4	9	13
<b>Total</b>	<b>10</b>	<b>19</b>	<b>27</b>

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

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