BiGGAR Economics

Socio-economic & Tourism Impact Assessment: Glenshero Wind Farm

A Report to

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BiGGAR Economics
Pentlands Science Park
Bush Loan, Penicuik
Midlothian, Scotland, EH26 0PZ
+44 (0) 131 514 0850
info@biggareconomics.co.uk
www.biggareconomics.co.uk

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1 EXECUTIVE SUMMARY

The proposed Glenshero Wind Farm consists of 39 turbines with a capacity of up to 168 megawatts (MW) and is located approximately eight kilometres west of the village of Laggan in Highland. The immediately surrounding area is very rural and sparsely populated, with the population being older than both the Highland and Scottish average. Tourism, as well as manufacturing and construction, are important to the local economy.

The economic impact of the proposed Glenshero Wind Farm has been assessed based on estimates of expenditure as well as experience of what has happened at other onshore wind farms, including case studies of other onshore wind developments in Scotland as part of the BiGGAR Economics research for RenewableUK. The result of the economic analysis suggests that during the development and construction phase the proposed development is expected to contribute up to:

- £25.2 million and 224 job years of employment in Highland; and
- £65.8 million and 596 job years of employment in Scotland.

And during each year of the operation and maintenance of the proposed development could contribute up to:

- £5.2 million and 42 jobs in Highland; and
- £8.0 million and 67 jobs in Scotland.

The proposed development will support wider investments by the GFG Alliance, which acquired the Lochaber Aluminium Smelter in Fort William and is planning to build an alloy wheels facility at the site that will directly employ 400 people. Other planned GFG Alliance investments include up to £50 million to be invested in new hydro schemes over the next four years, including through the recently acquired SIMEC Green Highland Renewables, and the Dalzell steel plant in Motherwell, which is expected to supply steel to the proposed development.

Glenshero Wind Farm is expected to support the GFG Alliance's wider goals, such as its GREENMETAL initiative to make industry in the UK low carbon and sustainable, as well as its aim of reviving industry in the Highlands.

Additional wider benefits associated with the proposed development include:

- a shared ownership opportunity for local communities to invest in up to 5% of the wind farm and invest the returns in the local area, generating substantial social and economic benefits; and
- non-domestic rates estimated at £1.9 million per year, £58.0 million over 30 years.

A review of the latest research evidence suggests that there is no evidence of wind farm developments adversely impacting on the tourism economy of Scotland. However, given the importance of tourism to the local economy, an assessment of potential tourism impacts has been undertaken. That assessment notes that the region's main tourism attractions are located some distance from the site and finds no significant tourism effects.

2 INTRODUCTION

This report sets out the findings of a socio-economic and tourism assessment of the proposed Glenshero Wind Farm, undertaken by BiGGAR Economics.

The assessment has been undertaken on the basis of proposals for a 39-turbine development, each with an anticipated capacity of up to 4.3 Megawatts (MW), resulting in an indicative total generating capacity of up to 168MW.

2.1 Consultations

Comments related to socio-economics and tourism were made in relation to the Environmental Impact Assessment and these are presented in Table 2.1, as well as where and how they have been addressed.

Table 2.1 – Consultation responses

Organisation	Response	Addressed
VisitScotland	Given the importance of scenery to Scotland's tourism offering, VisitScotland asked that a Tourism Impact Statement be undertaken, which may take account of the following factors: • tourists travelling past en route to elsewhere; • the views from accommodation in the area; • the relative scale of tourism impact; • the potential positives associated with the development; and • the views of tourist organisations.	A tourism impact assessment is undertaken in Chapter 7, which considers local tourism assets, as well as evidence on the relationship between wind farms and tourism.
Mountaineering Scotland (MS)	Mountaineering Scotland would like tourism effects to be considered, looking at evidence on the impact of wind farms on tourism	Evidence on the relationship between wind farms and tourism is considered in Section 7.1, including surveys undertaken by MS

Source: Glenshero Wind Farm Scoping Responses

2.2 Study Areas

For the purposes of the socio-economic assessment, the following study areas were considered:

- Highland, covering the local authority area; and
- Scotland.

In addition, the local area has been considered when assessing the socio-economic context, and nearby tourism and recreation assets have been considered as part of the tourism assessment.

2.3 Report Structure

The remainder of this report is structured as follows:

- Chapter 3 provides a socio-economic and strategic context of the local and regional area;
- Chapter 4 quantifies the potential economic impact of the proposed development;
- Chapter 5 discusses the potential wider economic benefits of the proposed development;
- Chapter 6 considers the local and regional tourism context;
- Chapter 7 examines the relationship between wind farms and tourism and assesses how the proposed development may affect local tourism assets; and
- Chapter 8 provides a summary of the socio-economic impacts.

3 SOCIO-ECONOMIC CONTEXT

This chapter provides details of the relevant strategic context and existing economic conditions in the area around the proposed development.

3.1 Strategic Context

3.1.1 Scotland's Economic Strategy[1]

In March 2015, the Scottish Government published its economic strategy with the two main purposes of increasing competitiveness and tackling inequality. The strategy outlined four main priorities to achieve these aims:

- investing in Scotland's people, infrastructure and assets;
- promoting inclusive growth, which creates opportunity through a fair and inclusive jobs market, and regional cohesion to provide economic opportunities across all of Scotland;
- fostering a culture of innovation, which is open to change and new ways of doing things; and
- enabling Scotland to take advantage of international opportunities.

3.1.2 Scottish Energy Strategy[2]

In December 2017, the Scottish Government released the Scottish Energy Strategy, which set out the Government's vision for a Scotland's energy future.

In 2016, 54% of all electricity in Scotland was generated renewably, with a target of producing 100% from renewable sources by 2020. However, in 2015, electricity represented 24% of all energy consumed in Scotland, and the overall share of renewables was 17.8%. By 2030, the Scottish Government wants the proportion of all energy, including heat and transport, supplied from renewable sources to increase to 50%.

The Scottish Government has also highlighted that renewables present an economic opportunity as an expanding market where Scotland will support growth by capitalising on its reputation, and the Government will continue to support businesses in Scotland.

Additionally, the Scottish Government has emphasised the importance of communities benefitting from renewable energy generation, including through shared ownership.[3]

3.1.3 Highland and Islands Operating Plan 2017-18[4]

The Highland and Islands Operating Plan is based on how the region can:

- support businesses and social enterprises;
- develop growth sectors;

[1] Scottish Government. (2015). Scotland's Economic Strategy
[2] Scottish Government (2017), Scottish Energy Strategy: The Future of Energy in Scotland
[3] Scottish Government (2015), Good Practice Principles for Shared Ownership of Onshore Renewable Energy Developments
[4] Highlands and Islands Enterprise (2017), Operating Plan 2017-18

- boost regional competitiveness; and
- strengthen communities and fragile areas.

To achieve these aims community development, which promotes inclusive growth, is an essential component of economic development in the Highlands and Islands. This can have a wider social and economic impact by boosting local employment and making communities more attractive places to live and will be supported by improving infrastructure and empowering communities through asset ownership, including ownership of renewable energy.

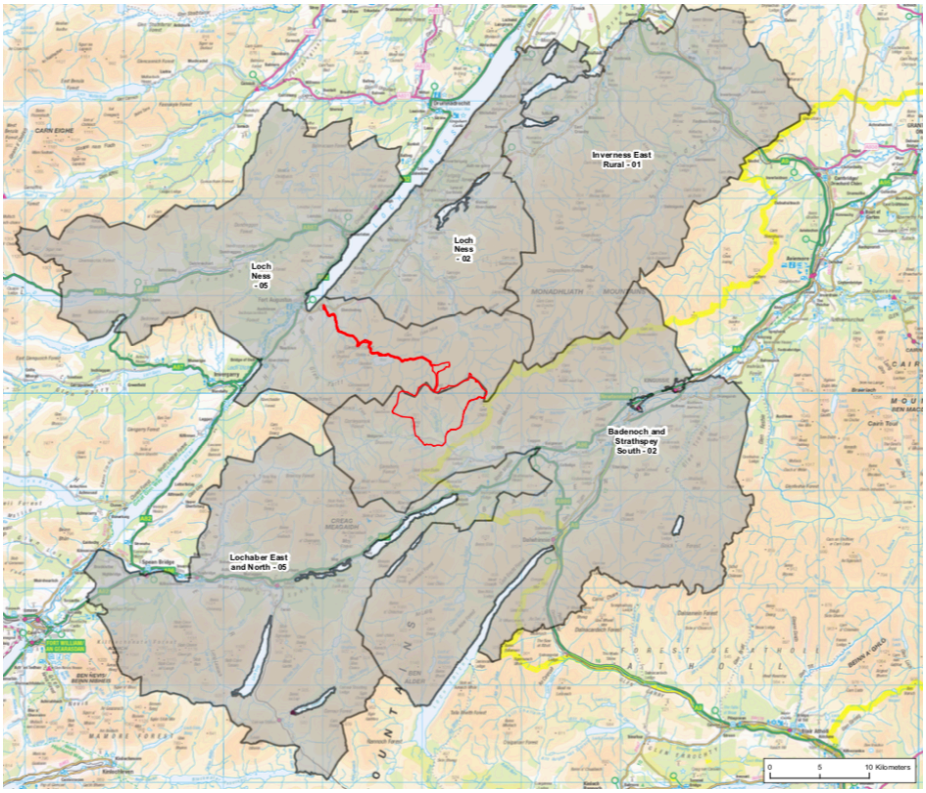
The Plan also highlights key growth sectors, including the energy sector. This includes developing new energy opportunities, such as marine energy and decommissioning, as well as promoting supply chain engagement in large-scale energy projects that are already underway. Technology and advanced engineering, including the Liberty British Aluminium plant in Fort William, are areas of opportunity where local firms can participate in the supply chain.

3.2 Socio-economic Indicators

This section presents and discusses socio-economic indicators that relate to the area immediately surrounding the proposed development. The most relevant data, capturing the nearest ward or data zones will be used where applicable.

The local area is represented by Lochaber East and North – 05, Lochaber East and North – 06, Inverness East Rural – 01, Loch Ness – 02, Loch Ness – 05, Badenoch and Strathspey South – 01, Badenoch and Strathspey South – 02, Badenoch and Strathspey South – 03, Badenoch and Strathspey South – 04 (Figure 3.1).

Figure 3.1 – Local Area



Source: Google Maps (2018)

3.2.1 Population

The combined population of the local area (which includes the towns of Fort Augustus, Kingussie and Spean Bridge) is 7,591. Over a fifth of this population is aged over 65 (22.7%), a higher proportion than Highland (21.3%) and Scotland (18.5%). The working age population is 61.3%, which is also smaller than Highland (61.6%) and Scotland (64.6%).

The local area is very rural and sparsely populated. The population density is 2.4 person per km^2, compared to 9.2 in Highland, and 69.4 in Scotland as a whole. The local area represents 3.2% of Highland's population, and 12.4% of the total land.

Table 3.1 – Population, 2016

	Local Area	Highland	Scotland
Total	7,591	234,770	5,404,700
0-15	15.9%	17.0%	16.9%
16-64	61.3%	61.6%	64.6%
65+	22.7%	21.3%	18.5%
Population density (person per km^2)	2.4	9.2	69.4

Source: National Records of Scotland (2017), Population Estimates 2016

Between 2016 and 2041 the population of Highland (data is not available at the ward level) is expected to increase slightly (1.4%), while the population of Scotland is expected to increase by 5.3%. The population is also expected to become older, with 30.4% of the population aged 65+ in 2041, compared to 25.3% in Scotland as a whole. As a result, the working age proportion is expected to fall to 54.4%.

Although data is not available at the more local level, it would be reasonable to assume that the population surrounding the wind farm is unlikely to experience significant growth and, given that its age profile is already older than Highland's, that the proportion of the population aged 65+ will be higher in 2041.

Table 3.2 – Population Projections, 2016-2041

	Highland		Scotland	
	2016	2041	2016	2041
Total	234,770	237,988	5,404,700	5,693,201
0-15	17.0%	15.2%	16.9%	15.8%
16-64	61.6%	54.4%	64.6%	58.9%
65+	21.3%	30.4%	18.5%	25.3%

Source: National Records of Scotland (2018), Population Projections 2016-41

3.2.2 Economic Activity

The economic activity rate in Highland is, at 84.6%, higher than for Scotland as a whole (77.5%), while the unemployment rate is similar (4.2% compared to 4.1%). The median annual wage is £28,282 marginally lower than Scotland (£28,371).

Table 3.3 – Economic Indicators

	Highland	Scotland
Economic Activity Rate	84.6%	77.5%
Unemployment Rate	4.2%	4.1%
Median annual wage	28,282	28,371

*Source: ONS (2018), Annual Population Survey Jan 2017 – Dec 2017. *ONS (2018), Annual Survey of Hours and Earnings*

3.2.3 Industrial Structure

The employment structure of the local area is provided in Table 3.4. There are 2,750 employees, much of which is concentrated in local towns, such as Fort Augustus and Kingussie, which are each more than 10 km from the proposed development. Agriculture and forestry (which does not include farm agriculture) accounts for 5.8% of employment, about double the Scottish level of 3.0%, and higher than the Highland level of 1.7%.

Over a fifth of workers are in the accommodation food services sector (20.4%), almost double the Highland level (11.3%) and triple the Scottish level (7.3%), which suggest how important tourism is to the area. Arts, entertainment and recreation also accounts for 5.8% of employment, higher than the Highland level (4.3%), and double the Scottish level (3.1%). However, retail corresponds to smaller proportion of employment (10.7%) than regionally (15.6%) and nationally (14.4%).

Manufacturing and construction account for 7.5% and 8.7% of employment respectively in the local area, higher than in Highland, where they represent 5.6% and 6.5%, and Scotland, where they represent 7.0% and 5.4%.

Sectors associated with the public sector, such as education, healthcare and public administration, are also responsible for relatively less employment than regionally and nationally. Combined, they represent 22.0% of employment in the local area, while in Highland and Scotland they represent 31.2% and 29.1%. However, health and social work is the second largest sector, representing 12.4% of employment.

Table 3.4 – Business Register and Employment Survey, 2016

	Local Area	Highland	Scotland
Agriculture and forestry*	5.8%	1.7%	3.0%
Mining and quarrying	3.3%	0.3%	1.2%
Manufacturing	7.5%	5.6%	7.0%
Electricity, gas, steam and air conditioning	2.0%	0.7%	0.7%
Water supply, sewerage, waste	0.0%	1.6%	0.7%
Construction	8.7%	6.5%	5.4%
Wholesale and retail trade	10.7%	15.6%	14.4%
Transportation and storage	2.4%	4.8%	4.2%
Accommodation and food services activities	20.4%	11.3%	7.3%
Information and communication	0.7%	2.1%	2.9%
Financial and insurance activities	0.0%	0.8%	3.3%
Real estate activities	2.4%	1.4%	1.5%
Professional, scientific and technical activities	4.7%	5.6%	6.9%
Administrative and support activities	1.6%	4.3%	7.3%
Public administration and defence	1.5%	5.2%	6.0%
Education	8.2%	6.9%	7.3%
Human health and social work activities	12.4%	19.0%	15.9%
Arts, entertainment and recreation	5.8%	4.3%	3.1%
Other service activities	0.9%	2.1%	2.1%
Total	2,750	115,500	2,587,500

*Source: ONS (2017), Business Register and Employment Survey. *Does not include farm agriculture*

3.3 Summary of Socio-economic Context

The area immediately surrounding the proposed development is largely rural with a low population density and a population that is older than Highland and Scotland and is likely to grow older. Employment is concentrated in small local towns, and the most important sector is accommodation and food services, suggesting that tourism is an important part of the economy. Construction and manufacturing, as well as agriculture and forestry, which does not include farm agriculture, are also important sectors.

4 SOCIO-ECONOMIC ASSESSMENT

Using the methodology described, this section considers the socio-economic impact of the proposed development's two main phases:

- construction and development; and
- operation and maintenance.

4.1 Methodology

4.1.1 Assessment of Socio-Economic Effects

There are no formally recognised standards, guidelines or methodologies for assessing the effects of wind farms on socio-economics, tourism or recreation. Therefore, to identify the significance of proposed economic effects, the assessment has been based on professional judgement of the degree of change resulting from the proposals.

Analysis of economic impacts was undertaken using a model that has been developed by BiGGAR Economics specifically to estimate the economic impacts of wind farm developments. This model was also the basis of an assessment of the economic effects of the UK onshore wind sector the then Department of Energy and Climate Change (DECC) and RenewableUK in 2012[5]. This was subsequently updated in 2015[6]. The assessments were based on case studies of the local, regional and national economic impacts of wind farms that have been developed in the UK in recent years.

Although there are no recognised methodologies for assessing the impact of wind farms, this approach is now considered best practice, having been used in reports for the DECC and RenewableUK. This model has been used by BiGGAR Economics to assess the economic effects of numerous wind farms across the UK and the results have been accepted as robust at several public inquiries.

This economic model was based on three main sources:

- estimates of capital expenditure;
- the analysis undertaken in the 2015 report on behalf of RenewableUK, which examined the size and location of contracts for components of the development, construction and operation of existing wind farms; and
- a bespoke analysis of the economies of the relevant study areas using local and national statistics.

4.1.2 Stages in Socio-Economic Analysis

The starting point for estimating the likely economic activity supported by the proposed development was to consider the level of expenditure during the construction and development, and operation and maintenance phases of the proposed development. The next step was to break this expenditure down into its main components and make reasonable assumptions about what would be expected to accrue to the main contractors and sub-contractors.

[5] Department of Energy and Climate Change, RenewableUK (2012), Onshore Wind: Direct and Wider Economic Impacts
[6] RenewableUK (2015), Onshore Wind: Economic Impacts in 2014

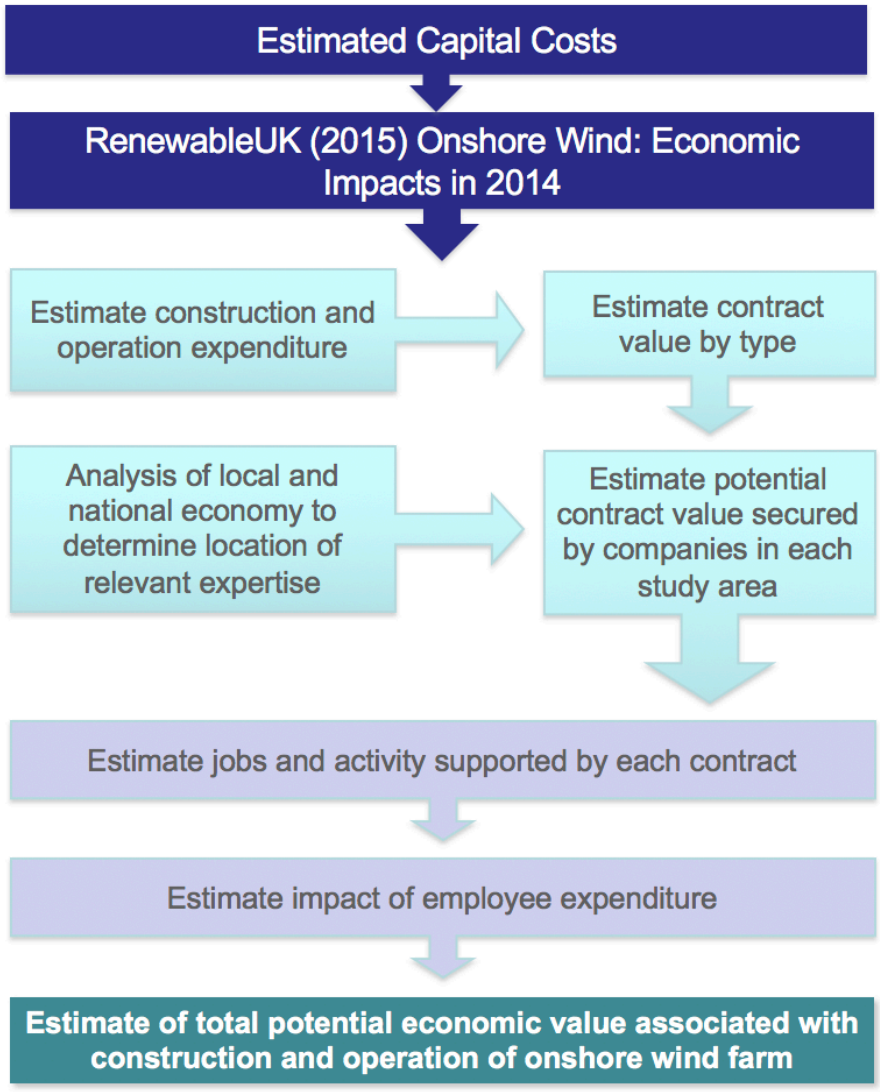
Applying these assumptions to the initial expenditure provided an estimate of the amount each component contract that could be secured by companies in Highland and Scotland. There are two sources of economic activity: the first arising from each of the component contracts and the jobs they support; the second is from the anticipated spending in the relevant study areas of people employed in these contracts (the income effect).

There are four key stages involved in this model:

- estimating total capital expenditure;
- estimating the breakdown of capital expenditure into component contracts and subcontracts, based on the RenewableUK report;
- assessing the capacity of the business base in each study area to carry out the contracts; and
- using the resulting figures to estimate economic impact.

These stages are illustrated in Figure 4.1.

Figure 4.1 – Approach to Economic Impact Assessment



Source: BiGGAR Economics

4.2 Construction and Development

The proposed development will comprise 39 turbines, each with an anticipated capacity of up to 4.3MW, resulting in an indicative total generating capacity of 168MW. The expected capital cost of the development is £158 million.

This capital expenditure is split into four main categories of contracts:

- pre-construction;
- balance of plant;
- turbines; and
- grid connection.

Based on the estimated capital expenditure, the largest proportion of capital expenditure (capex) will be on turbine related contracts, followed by balance of plant, grid connection and pre-construction.

The economic impact of the construction and development phase was estimated for Highland and Scotland. In order to do this, it was necessary to estimate the proportion of each type of contract that might be secured in each of the study areas. The assumptions were based on the average from the RenewableUK research, analysis of the industries and professions in each study area, and BiGGAR Economics previous experience. To estimate the expenditure for each contract in each of the study areas these percentages were applied to the estimated size of each component contract.

This suggested that Highland could secure contracts worth up to £24.2 million, which is equivalent to 15% of the total capital expenditure. The largest opportunity for Highland would be with the balance of plant contracts as companies in the area could secure contracts worth up to £12.8 million.

Scotland could secure up to 39% of total capex, worth up to £61.3 million (Table 4.1). This estimate was based on the assumption that the contract for the turbine towers would be secured by a Scottish manufacturer. The GFG Alliance intends that the towers will be manufactured in a GFG wind farm tower manufacturing facility in Scotland using Scottish GFG steel.

Table 4.1 – Potential Construction and Development Expenditure by Study Area and Contract Type (£m)

	Highland	Scotland
Pre-Construction	1.4	6.2
Balance of plant	12.8	29.7
Turbine	6.3	16.9
Grid connection	3.7	8.5
Total	24.2	61.3
Total (%)	15%	39%

Source: BiGGAR Economics Calculations

The contract values potentially awarded in each area would represent an increase in turnover of businesses in these. The impact that this increase turnover has on employment was estimated using industry-specific data from the Annual Business

Survey.[7] The survey gives the turnover per employee each of the industries involved, which allows the employment from any increase in turnover to be estimated.

The employment impacts during the construction and development phase are reported in job years, rather than full-time equivalents (FTEs) because the contracts would be short-term. Job years measures the number of years of full-time employment generated by a project. For example, an individual working on this project for 18 months would be reported as 1.5 job years.

In this way, the construction and development impacts were estimated to support up to 205 job years in Highland, of which up to 111 job years would be on balance of plant contracts. It was estimated that up to 507 job years would be supported in Scotland.

Table 4.2 – Potential Construction and Development Employment by Study Area and Contract Type (Job years)

	Highland	Scotland
Pre-Construction	15	66
Balance of Plant	111	239
Turbine	56	148
Grid Connection	23	55
Total (job years)	205	507

Source: BiGGAR Economics Calculations

There would also be knock on effects from the direct employment during the proposed development because the people who are employed on the project will have an impact on the wider economy when they spend their salaries. The research undertaken for RenewableUK in 2012 found that the average salary for employees in the onshore wind sector is £34,600. It was therefore estimated that up to £7.1 million would be paid in salaries to staff directly employed during the construction and development phase of the proposed development in Highland.

In order to estimate the economic impact of these salaries in each of the study areas it was necessary to make assumptions regarding the location of employee expenditure. It was assumed that employees that live in Highland would spend 40% of their salaries inside Highland and workers living in the rest of Scotland would spend 74% of their salaries in Scotland. The assumption for each of the location of spend in Scotland is based on data provided in the Scottish Government's Input-Output Tables.[8]

The economic impact of the increase expenditure was estimated using the average GVA/turnover and turnover/employee for the whole economy as reported in the Annual Business Survey.[9] In this way it was possible to estimate the induced impact direct employees would create in the construction and development phase. In Highland employees could spend £2.8 million, supporting 20 job years and £1.0 million GVA. In Scotland, direct employees could spend £12.9 million, supporting 89 job years, and £4.5 million GVA.

[7] Office for National Statistics (2017), Annual Business Survey Provisional Results 2016
[8] Scottish Government (2017), Input-Output Tables 2014
[9] ONS (2017), Annual Business Survey Provisional Results 2016

Table 4.3 – Potential Construction and Development Spending Impact

	Highland	Scotland
Employee spend (£m)	2.8	12.9
GVA (£m)	1.0	4.5
Employment (job years)	20	89

Source: BiGGAR Economics Calculations

The total impact during the construction and development phase is the sum of the direct impacts and the induced impacts from the expenditure of direct employees. The total combined impact was estimated to be up to £25.2 million and 224 job years in Highland, and up to £65.8 million and 596 job years in Scotland (Table 4.4).

Table 4.4 – Potential Economic Impact during Construction and Development

	Highland	Scotland
Economic Impact (£m)	25.2	65.8
Employment (job years)	224	596

Source: BiGGAR Economics Calculations

The developer is committed to maximising the local economic impact from the proposed development and will work with Highlands and Islands Enterprise and the Inverness Chamber of Commerce to ensure that local enterprise have an opportunity to bid for contracts. As the developer intends to have a significant presence in Highland (Section 5.1) this could provide local contractors with an opportunity to build a relationship that may lead to future contracts.

4.3 Operation and Maintenance

The operation and maintenance impact of the proposed development was estimated annually as the impact that would persist throughout the 30-year life-span of the proposed development.

Annual expenditure on operations and maintenance was estimated by multiplying the installed capacity by the industry average annual expenditure per MW on operations and maintenance. The annual expenditure per MW was estimated as £59,867 in the 2015 RenewableUK report. The proposed development was expected to have an installed capacity of up to 168MW, which implies that the annual operations and maintenance expenditure associated with the wind farm of the proposed development could be up to £10.0 million.

In order to estimate the economic impact of the operations and maintenance expenditure in each of the study areas it was first necessary to estimate the proportion of the contracts that could be secured in each of these areas. These assumptions were based on the contract proportions reported in the RenewableUK report and the analysis of the industries present in each of the study areas.

Based on this information it was assumed that Highland could secure 50% of operations and maintenance contracts, and the Scotland could secure 75% of contracts. In this way it was estimated that operations and maintenance would generate up to £5.0 million in Highland, and up to £7.5 million in Scotland.

Table 4.5 – Potential Operation and Maintenance Expenditure by Study Area

	Highland		Scotland	
	%	£m	%	£m
Operation and maintenance	50%	5.0	75%	7.5

Source: BiGGAR Economics Calculations

As with the construction phase, the contract values awarded in each of the study areas represent an increase in turnover in those areas. The economic impact of the increase in turnover on employment was estimated in the same way as the construction expenditure, using the Annual Business Survey[10], although as the impact on employment would be long-term it is presented as jobs.

In this way it was estimated that turnover generated by the operation and maintenance of the proposed development could support up to 38 jobs in Highland and 57 jobs in Scotland.

Table 4.6 – Potential Employment from Operation and Maintenance (jobs)

	Highland	Scotland
Operation and maintenance	38	57

Source: BiGGAR Economics Calculations

As with the construction expenditure, there will also be knock on effects from the direct employment during the operation of the proposed development. The people who will be employed will have an impact on the wider economy by spending their salaries. This was estimated using the same method as for the construction and development phase.

Adding together direct and induced impacts during the operation and maintenance, it was estimated that the total economic impact of up to £5.2 million and 42 jobs in Highland, and up to £8.0 million and 67 jobs in Scotland.

Table 4.7 – Potential Economic Impact during Operation and Maintenance

	Highland	Scotland
Economic Impact (£m)	5.2	8.0
Employment (jobs)	42	67

Source: BiGGAR Economics Calculations

[10] ONS (2017), Annual Business Survey Provisional Results 2016

5 WIDER SOCIO-ECONOMIC BENEFITS

5.1 Wider Investment

Glenshero Wind Farm is being developed by SIMEC on land owned by Jahama Estates, both of which are subsidiaries of the GFG Alliance, which also owns Liberty Aluminium Lochaber, an aluminium plant in Fort William, and a range of other investments.

The plant was bought from Rio Tinto by the GFG Alliance in Q4 2016, and the sale encompassed two hydro power stations at Fort William and Kinlochleven, as well as extensive estate lands, comprising 114,000 acres. These include the land that the proposed development is to be built on.

As well as developing renewable energy, the GFG Alliance is considering proposals and ideas with a wide range of community groups and local stakeholders for how its estate can be used. Its aim is to use the estate in the most productive way to maximise benefit for the economy and residents through a joined-up plan where all the different elements work together. These ideas include:

- investment to upgrade housing and visitor accommodation across the estate;
- development of high-grade facilities for tourists including accommodation and outdoor pursuits such as kayaking;
- major improvement to, and expansion of, farming, fishing forestry across the estate;
- a new helipad to serve both business and emergency services;
- support for individual enterprises related to agriculture, sport and recreation; and
- improved access to the estate lands through better signage, parking and other facilities and improved management of natural habitats and peatland.[11]

The hydro and aluminium smelter bought by the Alliance were originally built about a century ago and the Lochaber smelter is the last remaining aluminium smelter in the UK. There can be little doubt that the availability of a secure and renewably generated supply of electricity, provided by the nearby hydro power, has been a significant factor in its longevity. The availability of clean, reliable energy will continue to be important to the long term competitiveness of the Fort William complex, and in supporting the vision of the GFG Alliance.

GFG has announced that it will also be investing in a new £120 million alloy wheel facility in Fort William.[12] BiGGAR Economics has assessed the economic impact of the existing aluminium smelter, and the potential economic impact of the proposed alloy wheel facility.

The existing facility employs 170 people directly. It was estimated that its total economic impact, including supply chain and staff spending impacts, is £27.6 million GVA and 278 jobs in Highland, and £30.5 million and 348 jobs in Scotland.

[11] GFG Alliance (2017), GFG Alliance unveils new wind energy project to support the development of Scottish Industry.
[12] GFG Alliance (2018), Planning go-ahead for flagship alloy wheels plant in Highlands. http://www.gfgalliance.com/media/planning-go-ahead-flagship-alloy-wheels-plant-highlands/

It was also estimated that once the proposed aluminium wheel facility has been set up, increasing the efficiency of the Fort William operations, it would require an additional 400 employees. Including the supply chain and staff spending impact, it was estimated this could generate £43.9 million GVA and 605 jobs in Highland and £52.2 million GVA and 650 jobs in Scotland, as well as safeguarding jobs at the aluminium smelter.

This development is expected to be highly impactful in the Lochaber economy and to lead to growth in the total population of Lochaber. As a result, a recruitment drive is likely to be necessary, as is a significant increase in the housing stock, which would require significant investment, while also creating jobs and economic activity in the construction sector.[13] If this doesn't happen, employees from other businesses and organisations in Lochaber may be displaced.

Other investments that the GFG Alliance has made in the UK in recent years include several, previously distressed metals manufacturing facilities. These include the Dalzell plant in Motherwell, which was acquired in 2016 and reopened in September of that year, saving about 120 jobs.[14] It is intended that the plant, which manufactures plate steel, would roll the steel required for the proposed development. The GFG Alliance has also discussed the possibility of developing its own specialised wind tower manufacturing facility, which may be located on land adjacent to the Dalzell plant.[15]

In addition, the GFG Alliance recently acquired Green Highland Renewables a hydro power developer, now known as SIMEC Green Highland Renewables or SIMEC GHR. SIMEC GHR has delivered 45 hydro power schemes internationally, and continues to operate and maintain many of them. SIMEC and SIMEC GHR aim to build or upgrade a number of hydro schemes, including some on its Lochaber estate. To achieve this aim, the GFG Alliance has plans to invest circa £50 million in the next four years.

The GFG Alliance has invested in a range of bio-diesel generators across its industrial sites totalling 100MW, including a plant at Fort William, which opened in March 2017. These generators will provide power to the smelter and proposed alloy wheel facility and potentially renewable heat to the wheel factory and surrounding community.

These plants, as well as the hydro power and wind schemes, form part of the GFG Alliance's vision of using reliable low carbon generation to power its energy intensive steel and aluminium plants, a concept it calls GREENMETAL. In addition to using renewable energy this concept also calls for using electric arc furnaces to recycle existing scrap metal, of which the UK exports more than 7 million tonnes each year. The GFG Alliance has plans to develop 5 million tonnes of low-carbon metal-making capacity, and expects that the combination of recycled metal and clean energy can reduce the total carbon footprint to one tenth of traditional blast furnace production.[16]

[13] Golder Associates/BiGGAR Economics (2017), Environmental Impact Assessment of Alloy wheel manufacturing facility

[14] Liberty (2016), Britain's largest steel plate mill re-born following Liberty rescue. http://www.libertyhousegroup.com/news/britain-s-largest-steel-plate-mill-re-born-following-liberty-rescue/

[15] GFG Alliance (2017), GFG Alliance unveils new wind energy project to support development of Scottish industry. http://www.gfgalliance.com/media/gfg-alliance-unveils-new-wind-energy-project-support-development-scottish-industry/

[16] GFG Alliance (2017), GFG Alliance back UK Government's Industrial Strategy with 5m-tonne GREENSTEEL plan for 'Clean Growth'. http://www.gfgalliance.com/media/gfg-alliance-backs-uk-governments-industrial-strategy-5m-tonne-greensteel-plan-clean-growth/

By providing reliable, renewable energy the proposed development will help the GFG Alliance to achieve its vision of supporting GREENMETAL manufacturing throughout the UK and to revive industry in the Highlands.

5.2 Shared Ownership

The applicant has extended an opportunity to the local community (Laggan Community Association in the first instance) to share ownership in the proposed development, by investing in up to 5% of the project. Shared ownership is defined as any structure that involves a community group as a meaningful financial partner in a renewable energy group.

Preliminary discussions have indicated a preference for either Shared Revenue, where the community receives a share of revenues in exchange for a lump sum but full ownership remains with the developer, or a Joint Venture agreement, which would involve the community becoming a minority shareholder receiving a variable return in the form of dividends.

The Scottish Government Good Practice Principles for Shared Ownership of Onshore Renewable Energy Developments[17] sets out the Scottish Government's belief that shared ownership should become the standard in the renewable industry, and how this can be achieved. This commitment to shared ownership was renewed in the 2017 Onshore Wind Policy Statement[18].

The Scottish Government is committed to shared ownership because it can help to create greater positive public feeling towards proposed projects and strengthen relations between developers and communities, build the capacity of communities and empower their members, and support Scotland's ambitious targets for locally owned renewable energy.

The community are being assisted by Local Energy Scotland. Local Energy Scotland is an independent organisation that offers free and impartial advice to local communities on the process of investing in renewable energy projects. In addition, SIMEC have appointed Abundance Investment to support in the delivery of the Shared Ownership provision. Abundance Investment is an organisation that was founded to make it easy for organisations to invest in social and environmental infrastructure and is acting as the local community's direct point of contact and intermediary.

A Memorandum of Understanding has been signed between the developer and the community, which will commit both parties to continuing to explore the opportunity once the planning application has been submitted.

Any returns from the shared ownership could be used to address a wide range of potential social or economic issues. These may include provision of a local public transport service, new cycle and walk ways connecting the community, hiring a community caretaker, supporting the local school or discounting energy costs. The community is also in discussions to purchase and improve the local forest.

5.3 Non-Domestic Rates

The development will be liable for non-domestic rates, the payment of which will contribute directly to public sector finances. These non-domestic rates, by

[17] Scottish Government (2015), Good Practice Principles for Shared Ownership of Onshore Renewable Energy Developments
[18] Scottish Government (2017), Draft Onshore Wind Policy Statement

providing an additional revenue stream, will support the delivery of government services.

An analysis of the rateable values paid by several wind farms in Highland indicates that the average rateable value per MW is £22,265.

Given that the development will be up to 168MW, it is estimated that the total rateable value will be up to £3.7 million. Given a poundage rate of £0.518 per £1 of rateable value for business with a rateable value over £51,000[19] it is estimated that the development could contribute £1.9 million annually to public finances, and over 30 years could contribute £58.0 million. However, the actual contribution will depend on variables such as the actual load factor, and the potential for any relief from non-domestic rates.

[19] Scottish Parliament Information Centre (2017), Non-domestic rates and the 2017 Revaluation

6 TOURISM CONTEXT

This section discusses the tourism demographic of the local area, observing data relating to room occupancy, types of visitors as well as local and top regional attractions in relation to the proposed development site.

6.1 Tourism Economy

Tourism is a significant contributor to the economy of rural Scotland. Benefits include cash flows into a range of businesses, extending beyond accommodation, restaurants and visitor attractions. Taxis and public transport, village shops, craft workers and country estates are among the list of those receiving direct business. Local trades are also boosted through purchases by businesses and improvements to premises simulated by tourism.

Drawbacks, however, include the seasonality of tourism activity. Most tourism businesses in rural areas must take advantage of peak times in tourism, requiring enough revenue in a 6-month period to sustain them all year. This results in high-intensity periods followed by those of uncertainty, due to the unpredictable nature of demand in the sector from factors such as fluctuations in exchange rates, international terrorism, domestic prosperity and fuel prices. Wages are also often relatively low with unfavourable working hours.

Tourism is important to the economy in the Highland: it contributed £197.1 million GVA in 2015, and employed 16,000 people, accounting for around 13.9% of total Highland employment. In Scotland it employed 217,000 people, or 8.4% of total employment.

Table 6.1 – Sustainable Tourism Employment and Gross Value Added, 2015

	Employment	GVA (£m)
Highland	16,000	197.1
Scotland	217,000	3,760.8

Source: Scottish Government (2018), Growth Sector Statistics 2015

6.1.1 Visitors

In 2016, tourists from within Great Britain accounted for about 1.85 million trips to the Highlands and Islands, representing 16.1% of all GB visits to Scotland. The Highlands and Islands is composed of Highland, the Orkney islands, the Shetland Islands and the Outer Hebrides.

Table 6.2 – GB Trips by Country of Residence, 2016 (000's)

	Highlands & Islands	Scotland
Scotland	1,000	5,461
England	833	5,803
Wales	22	249
Total	1,855	11,514

Source: VisitScotland (2017). Tourism in Scotland's Regions 2016

Data on overseas trips to Scotland are provided by the International Passenger Survey. The largest proportion of visitors, as in Scotland as whole, are from the USA, with 24.1% of trips and 33.9% of spend. This suggests that about one in

three American visitors go to the Highlands and Islands. The next biggest group is from Germany, with 113,000 visitors (19.0%) and £48 million in spending (16.7%) (Table 6.2).

Table 6.3 – Overseas Trips and Spend by Country of Residence, 2016

	Highlands & Islands		Scotland	
	Trips (000s)	Spend (£m)	Trips (000s)	Spend (£m)
USA	144	97	451	510
Germany	113	48	355	212
France	56	16	152	75
Canada	33	16	149	130
Australia	37	18	132	102
Italy	27	11	123	92
Netherlands	35	13	115	62
Poland	5	<1	138	20
Spain	11	2	89	40
Sweden	12	4	89	43
Rest of World	122	59	954	564
Total	596	286	2,747	1,850

Source: VisitScotland (2017). Tourism in Scotland's Regions 2016

Table 6.4 shows the number and average trip duration of domestic and overseas trips. Domestic visitors accounted for 74% of nights spent in the Highlands & Islands, and those from overseas accounted for 26%. Whilst there were fewer nights spent by overseas visitors overall, the average amount of nights was higher. The duration of GB trips to the Highlands and Islands was also longer than for Scotland as a whole (4.7 compared to 3.4).

Table 6.4 – GB and Overseas Average Trip Duration

	Highlands & Islands	Scotland
GB Nights (000's)	8,803	38,876
Overseas Nights (000's)	3,090	21,229
Total Nights (000's)	11,893	60,105
Average GB Nights	4.7	3.4
Average Overseas Nights	5.2	7.7

Source: VisitScotland (2017). Tourism in Scotland's Regions 2016

Accommodation occupancy figures can be used to highlight the seasonality of the tourism sector and confirm that tourism is seasonal in the Highlands, with peak occupancy in the summer months and much less demand at other times, as shown in Table 6.5.

The type of accommodation most-affected by seasonality in the Highlands is Guesthouses & B&Bs, with a difference of 76% occupancy between the high and low periods. Hotels and self-catering accommodation also displays signs of seasonality with differences in occupancy of 47% for hotels and 66% for self-catering between their high and low periods. Guesthouses & B&Bs also experience

the lowest average percentage occupancy with 49% throughout the year, whilst hotels have 67% and self-catering has 56% occupancy on average.

Table 6.5 – Accommodation Occupancy (Highlands)

	Hotel (%)	Guesthouse/ B&B (%)	Self-Catering (%)
January	42	13	32
February	56	25	40
March	61	29	40
April	59	35	40
May	75	74	50
June	88	73	69
July	87	80	93
August	88	87	77
September	84	76	76
October	77	44	97
November	53	37	33
December	41	11	27
High	88	87	93
Low	41	11	27
Difference	47	76	66
Average	67	49	56

Source: VisitScotland (2017). Tourism in Scotland's Regions 2016

6.2 Local Attractions & Accommodation

The most visited attractions for the Highlands & Islands are displayed in Table 6.6 below.

Urquhart Castle is 27 kilometres (km) to the North, from the proposed site and the remaining 4 top attractions are greater than 35 km from the proposed site boundary. The furthest is the Glenfinnan Monument, which is 58 km away. Their locations with respect to the proposed development are displayed in Figure 6.1.

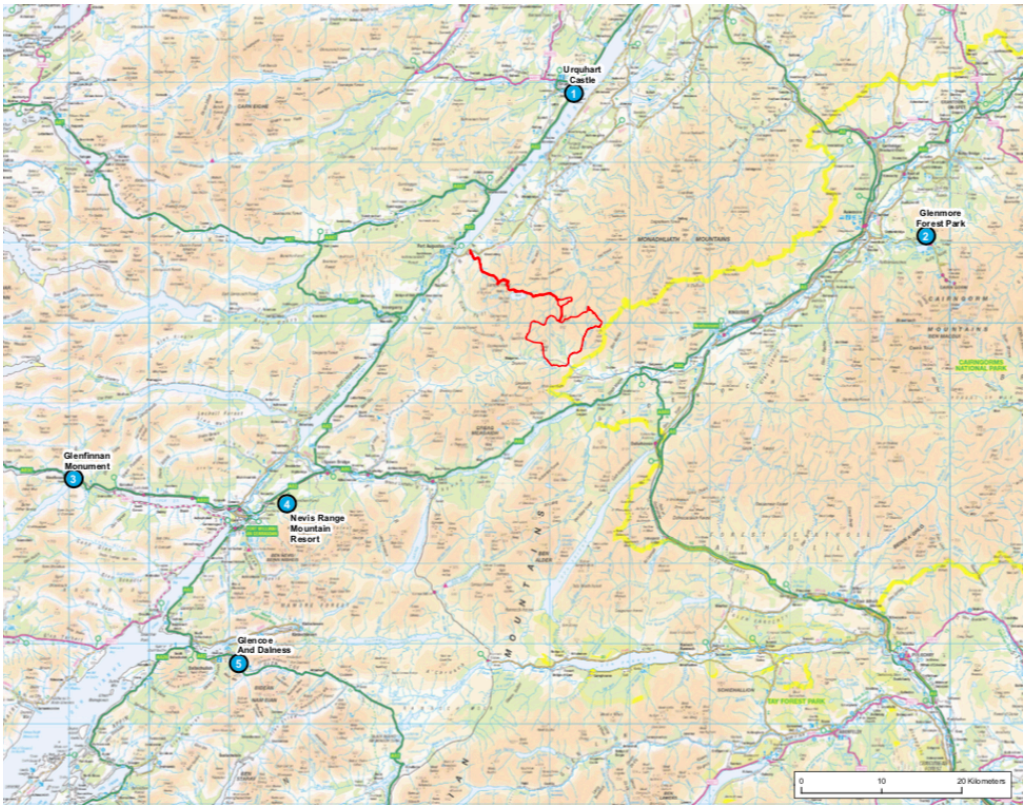
Loch Ness is also a popular tourism destination among domestic and overseas visitors, although visitor numbers to the loch are hard to measure it is considered a top regional attraction due to its cultural importance.

Table 6.6 – Top 5 Most Visited Attractions in Highlands & Islands

Name	Number of Visitors	Approximate Distance from Proposed Site Boundary (km)
(1) Urquhart Castle	396,397	27
(2) Glenmore Forest Park	304,374	40*
(3) Glenfinnan Monument	251,181	58
(4) Nevis Range	200,667	36
(5) Glencoe Visitor Centre	199,327	54

*Source: VisitScotland (2017). Tourism in Scotland's Regions 2016. *Distance to edge of the forest park.*

Figure 6.1 – Top Attractions



Source: Google Maps (2018)

Additionally, three of Scotland's Great Trails and two National Cycle Routes have been identified to pass near to the proposed development which are shown in Table 6.7 below.

Table 6.7 – Identified National Trails

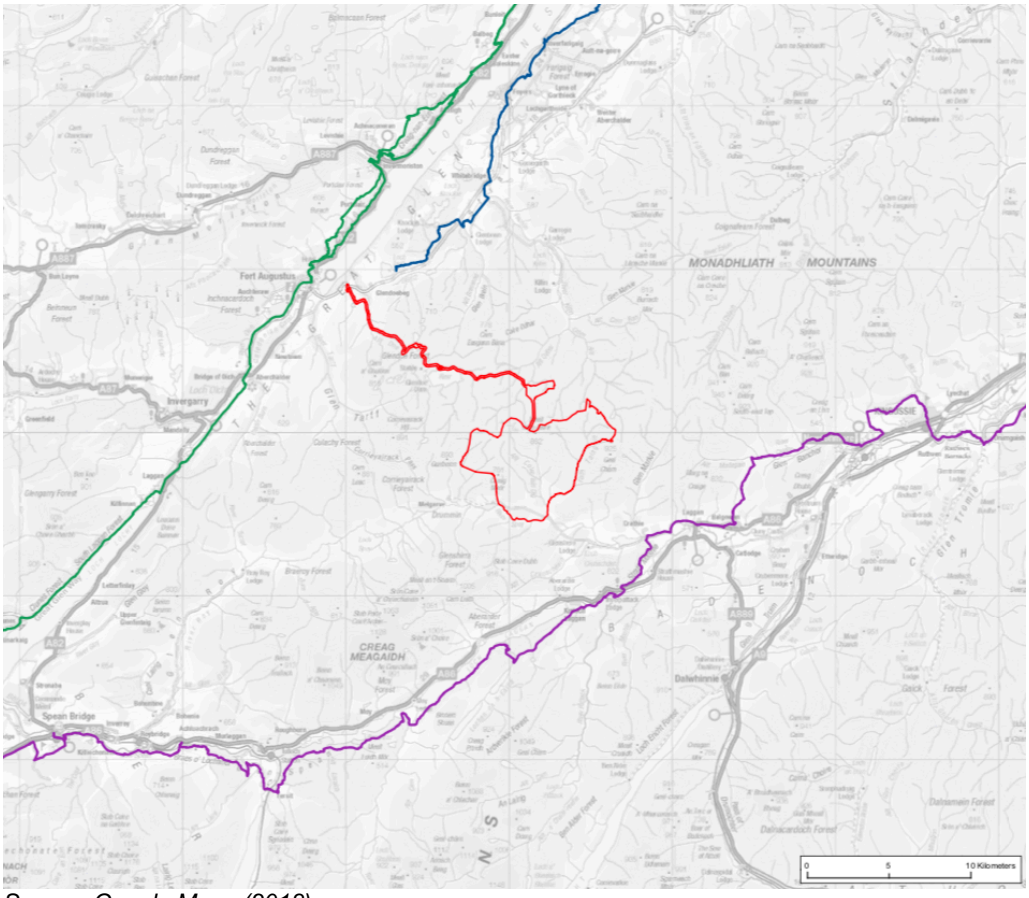
Trail	Nearest Approximate Distance to Site Boundary (km)
The East Highland Way (Purple)	6
South Loch Ness Trail (Blue)	11
Great Glen Way (Green)	14
National Cycle Route 7	14
National Cycle Route 78	10

Source: BIGGAR Economics Analysis

The Dalwhinnie to Newtonmore Railway line has also been considered in the assessment, although it is not a great scenic railway locals and visitors also travel lesser-known routes for their scenic views.

The location of the three Scottish Great Trails are also displayed in Figure 6.2. with the East Highland Way in purple, the South Loch Ness Trail in blue and the Great Glen Way in green. The National Cycle Route 7 follow the A9 to the South-East of the proposed development. The National Cycle Route 78 Follows the A82 until the centre of Fort Augustus where it follows the B862 on the Eastern side of Loch Ness, located to the West and North-West of the proposed development.

Figure 6.2 – Scottish Great Trails



Source: Google Maps (2018)

Around the proposed site, accommodation facilities and attractions are primarily situated around significant settlements such as Fort Augustus and roadways, such

as the A9 and the A82. These tourism assets have been identified using both the TripAdvisor[20] and VisitScotland[21] websites.

The number of identified local accommodation facilities around these areas, whose impact from the proposed development will be assessed, are listed below:

- Fort Augustus – 58 accommodation facilities & 6 attractions;
- Laggan – 4 self-catering facilities & no attractions;
- Newtonmore – 24 self-catering facilities & 6 attractions;
- Kingussie – 16 self-catering facilities & 4 attractions;
- Invermoriston – 8 self-catering facilities & 1 attraction;
- Kilfinnan and North & South Laggan –11 self-catering facilities & no attractions;
- General Wade's Military Road – 3 self-catering facilities & 1 attraction;
- A86 – 8 self-catering facilities & 4 attractions;
- A9 – 26 self-catering facilities & 3 attractions; and
- A82 – 4 self-catering facilities & 1 attraction.

The zone of theoretical visibility is provided in the Glenshero Wind Farm Environmental Impact Assessment Report, Volume 3, figure 4.3.

[20] TripAdvisor. (2018). Scottish Highlands. Accessed: June 2018. Available from: https://www.tripadvisor.co.uk/Tourism-g186535-Scottish_Highlands_Scotland-Vacations.html
[21] VisitScotland. (2018). The Highlands. Accessed: June 2018. Available from: https://www.visitscotland.com/destinations-maps/highlands/

7 TOURISM ASSESSMENT

7.1 Evidence on the Effect of Wind Farms on Tourism

The extent to which the development of the onshore wind sector effects the tourism sector is a well-researched topic, with several studies published over the last decade.

7.1.1 Glasgow Caledonian University (2008), The Economic Impacts of Wind Farms on Scottish Tourism[22]

This report incorporates a literature review, an intercept survey of tourists in the study area, an internet survey, a Geographic Information Systems (GIS) study about the effect on accommodation and economic analysis of the results. The study area for this report included Caithness and Sutherland, Perth Kinross and Stirling, Dumfries and Galloway, and the Scottish Borders.

The literature review found that most of the studies concluded no significant negative outcomes of wind farms on tourism in sensitive areas, as they generally don't have wind farms approved.

The intercept survey of tourists carried out in Scotland found 25% viewed wind farms negatively, but the majority had neutral or positive opinions, with negative views being less widely held among hill walkers. Respondents who had already seen a wind farm were also less likely to be hostile to them.

Although a significant minority (20-30%) preferred landscapes without wind farms, very few would change their future intention to revisit Scotland based on them.

A 2012 report[23] commissioned by the Scottish Government subsequently found that the findings of the Glasgow Caledonian report were robust, and that there had been no adverse effect on tourism in the areas considered in the original report.

7.1.2 Scottish Parliament Economy, Energy and Tourism Committee (2012), Report on the achievability of the Scottish Government's renewable energy targets[24]

In 2012, following an inquiry into the achievability of the Scottish Government's renewable energy targets, the Scottish Parliament's Economy, Energy and Tourism Committee concluded that:

"Several witnesses made assertions that there would be a negative impact on Scotland‘s tourism industry from renewable developments. However, these assertions were contradicted by research evidence from VisitScotland and others.

Whilst care always needs to be taken in terms of the planning process and decisions on the siting of individual projects in areas popular with tourists and in our more rural and remote rural areas, no witness has provided the Committee with robust, empirical evidence, as opposed to anecdotal comment and opinion, that tourism is being negatively affected by the development of renewable projects."

[22] Glasgow Caledonian University. (2008). The Economic Impacts of Wind Farms on Scottish Tourism.
[23] ClimateXchange. (2012). The Impact of Wind Farms on Scottish Tourism.
[24] Scottish Parliament Economy, Energy and Tourism Committee. (2012). Report on the achievability of the Scottish Government's renewable energy targets.

7.1.3 VisitScotland (2012), Wind Farm Consumer Research[25]

In 2011, VisitScotland commissioned a survey into attitudes of tourists towards wind farms, which surveyed 2,000 people in the UK and 1,000 people in Scotland, who had visited Scotland recently. The majority (86-91%) were in agreement about the importance of the natural scenery and landscape, for most of the respondents (80-83%) their decision to stay in the UK for a short holiday would not be affected by the presence of a wind farm. In general, the respondents did not feel that wind farms ruined the tourism experience.

7.1.4 Mountaineering Scotland Surveys[26] [27]

In 2014, Mountaineering Scotland, a membership body that represents Scottish hillwalkers and mountaineers, conducted a survey of its members. It found that wind farms had an adverse effect on Scottish mountaineering, with many responding that they would avoid areas with wind farms and that they were also found to reduce the scale of Scottish tourism.

Following criticisms about the impartialness of the original findings Mountaineering Scotland conducted another survey of its members in 2016. When asked about the impact of wind farms on plans to walk and climb, 75% of respondents answered that wind farms have no effect on their plans, although some expressed that they may decrease their enjoyment. 22% responded that they go as often, but avoid areas with wind farms, while 1% go to the mountains less. However, 2% of respondents said they go to the mountains more often and like to see wind farms.

7.1.5 BiGGAR Economics (2017), Wind Farms and Tourism Trends in Scotland[28]

In 2017, BiGGAR Economics undertook a study analysing the effects of wind farms on the tourism sector in Scotland at a National, Regional and Local level. This was an updated study of work previously published in 2016.

The report found that while the capacity of wind farms has more than doubled over the study period, employment in sustainable tourism had increased by more than 15%. Furthermore, the analysis found no correlation between tourism employment and the number of turbines at the Local Authority level. The study also considered the impact on employment up to 15 km from developments, and the wind farms considered were those constructed between 2009 and 2015.

The study concludes that national statistics suggest there is no relationship between the development of onshore wind farms and tourism employment in Scotland, the Local Authority in which the wind farms are located or the local area surrounding the development.

7.2 Significance Assessment

7.2.1 Methodology

A detailed review of the tourism and recreation assets within 15 km of the proposed development was undertaken as well as a detailed tourism assessment.

[25] VisitScotland. (2012). Wind Farm Consumer Research.
[26] Mountaineering Council of Scotland. (2014). Wind farms and changing mountaineering behaviour in Scotland.
[27] Mountaineering Council of Scotland. (2016). Wind farms and mountaineering in Scotland.
[28] BiGGAR Economics. (2017). Wind Farms and Tourism Trends in Scotland.

This was done using the significance criteria outlined in Table 7.1.

Table 7.1 – Significance Criteria

Significance	Description
High	Major loss/improvement to key elements/features of the baselines conditions such that post development character/composition of baseline condition will be fundamentally changed. For example, a major long-term alteration of socio-economic conditions, a major reduction/improvement of recreational assets, or a substantial change to tourism spend
Medium	Loss/improvement to one or more key elements/features of the baseline conditions such that post development character/composition of the baseline condition will be materially changed. For example, a moderate long-term alteration of socio-economic conditions, a moderate reduction/improvement in the recreational asset, or a moderate change to tourism spend
Low	Changes arising from the alteration will be detectable but not material; the underlying composition of the baseline condition will be similar to the pre-development situation. For example, a small alteration of the socio-economic conditions, a small reduction/improvement in the recreational asset, or a small change in tourism spend
Negligible	Very little change from baseline conditions. Change is barely distinguishable, approximating to a "no change" situation

Source: BiGGAR Economics

7.2.2 National & Regional Attractions

Given the proposed development's distance from the attractions considered in Table 6.6, with the nearest being 27 km away, it is considered highly unlikely that there will be any sort of effect.

Loch Ness, at its closest point, sits approximately 12 km to the North-West of the boundary of the proposed development, and although visitor numbers are not available it is considered to be of national importance given its international recognition and contribution to national identity. However, there are not expected to be any views of the proposed development from the loch, which is located in the Great Glen, and therefore the proposed development will not alter any of loch's characteristics such as its beauty and tranquillity. Therefore, it is not expected that there will any impact upon Loch Ness**.**

7.2.3 Great Trails & Railways

The East Highland Way runs for 134 km between Fort William and Aviemore, passing the proposed development along the Southern, South-Easterly and Easterly side. The trail passes 6 km away from the site boundary at its closest point. The trail is known for its accessibility across the Highlands, and its numerous lochs and forestry. These characteristics are not expected to be affected by the proposed development, and therefore the impact has been classified as **Negligible.**

The South Loch Ness Trail is approximately 50 km long, going from Loch Tarff to the outskirts of Inverness. The trail is located 11 km away to the North of the proposed development at its closest point. The main characteristics of this trail are the views along the famous Loch Ness as well as a link between Fort Augustus and Inverness. These characteristics are unlikely to be affected by the proposed development, and so the impact has been classified as **Negligible.**

The Great Glen Way is approximately 117 km long, beginning in Fort William and ending in Inverness, passing Loch Lochy and Loch Ness on their Western side. The trail is 14 km away from the proposed development at its closest point, which passes the site on its South-Westerly, Westerly and North-Westerly side. The main characteristics of the trail is its views along Loch Lochy, Loch Oich and Loch Ness as well as its access between Fort William and Inverness, which will not be affected. The proposed development is also unlikely to be visible from the trail. The effect has been assessed as **Negligible.**

National Cycle Route 7 is approximately 970 km long, beginning in Sunderland, passing through Carlisle and Glasgow, and ending in Inverness. The cycle route passes the proposed development 14 km away at its closest point to the South-East. Any effect from the proposed development is expected to be minimal due to the route's use for connectivity and the distance from the proposed development, and has been classified as **Negligible.**

National Cycle Route 78 – The Caledonia Way, is approximately 380 km long, beginning in Campbeltown and ending in Inverness. The cycle route passes the proposed development 10 km at its closest point to the North-West. The cycle route passes the site to the South-West, West and North-West. Any impact from the proposed development is expected to be minimal at-most due to the routes use for connectivity, and therefore has been classified as **Negligible.**

The Dalwhinnie to Newtonmore Railway Section passes the proposed development to the South-Eastern & Eastern side approximately 14 km away at its closest point. Although some may consider the views scenic, and these are unlikely to be changed considerably, the railway is mainly used as transport from Perth to Inverness, and will not be affected by the construction of the proposed development. As a result, the impact of the proposed development upon this railway line is assessed as **Negligible.**

7.2.4 Local Accommodation & Attractions

Fort Augustus is located approximately 14 km North-West from the boundary of the proposed site, consisting of 58 accommodation facilities and 6 attractions which have been identified. Fort Augustus is known for its location between Fort William and Inverness, as well as its location alongside Loch Ness, on the Great Glen Way and near to the South Loch Ness Trail. The impact from the construction of the proposed development upon all 64 identified tourism assets is expected to be **Negligible**, as it is not expected to alter the characteristics of these assets which attract visitors.

Laggan is located approximately 8 km to the East from the boundary of the proposed site, consisting of 4 accommodation facilities which have been identified and no attractions. The accommodation facilities located at Laggan are not expected to be affected by the proposed development, and so the impact has been classified as **Negligible.**

Newtonmore is located approximately 15 km to the East from the boundary of the proposed site, consisting of 24 accommodation facilities and 5 attractions which have been identified. The 29 tourism assets located within Newtonmore are unlikely to be affected by the proposed development, and so the impact has been classified as **Negligible.**

Kingussie is located approximately 19 km to the East from the boundary of the proposed site, consisting of 16 accommodation facilities and 4 attractions which have been identified. The characteristics of the 20 tourism assets are unlikely to be

affected by the proposed development, and therefore the impact has been classified as **Negligible.**

Invermoriston is located approximately 17 km to the North from the boundary of the proposed site, consisting of 8 accommodation facilities and 1 attraction which have been identified. Invermoriston is located along the side of Loch Ness, along the route of the Great Glen Way. The characteristics of the tourism assets identified are not expected to be altered by the construction of the proposed development, and therefore the impact upon them has been classified as **Negligible.**

Kilfinnan and North & South Laggan is located approximately 17 km to the West of the proposed site located between Loch Oich and Loch Lochy. The area consists of 11 accommodation facilities and no attractions which have been identified. The characteristics of these accommodation facilities are not expected to be affected by the construction of the proposed development and therefore the impact has been classified as **Negligible.**

The section of **General Wade's Military Road** being assessed spans from Laggan to Fort Augustus, for a distance of approximately 40 km. At its closest point, General Wade's Military Road passes through the site boundary of the proposed development on its Southern side. This military road is known for its historical importance during the Jacobite revolution in the late 18th Century as well as its views over Loch Ness. The characteristics of this road, and the 3 accommodation facilities located along it, are not expected to be affected by the proposed development and so the impact has been classified as **Negligible.**

The **A86** road connects Spean Bridge to Kingussie, passing the proposed development to the South, 5 km away at its closest point. 8 accommodation facilities and 4 attractions have been identified along the main road. The characteristics of the 12 tourism assets identified are unlikely to be affected by the construction of the proposed development, and therefore the impact has been classified as **Negligible.**

The **A9** road connects Falkirk to Thurso in the North of Scotland, passing the proposed development to the East, 14 km away from the site boundary at its closest point. 26 accommodation facilities and 3 attractions were identified along the main road. The characteristics of the 29 identified tourism assets are unlikely to be affected by the construction of the proposed development, and therefore the impact has been classified as **Negligible.**

The **A82** road connects Glasgow to Inverness, passing the proposed development to the West, 13 km away from the site boundary at its closest point. 4 accommodation facilities and 1 attraction were identified along the main road. The characteristics of the 5 identified tourism assets are unlikely to be affected by the construction of the proposed development, and therefore the impact has been classified as **Negligible.**

7.3 Cumulative Effects

During the consultation the need to consider potential cumulative effects of the development with other wind farms has been noted by a number of consultees. As noted in the baseline, the Highland economy is dependent of tourism revenue and a large attraction is the landscape and activities undertaken within it. Potential cumulative effects on tourism, recreation and socio-economics may occur if there are significant cumulative effects on the landscape. The landscape and visual

assessment in the Environmental Impact Assessment report provides a detailed assessment of potential cumulative effects on the landscape.

The cumulative assessment includes consideration of the potential for cumulative effects resulting from the development in combination with other developments, which have been consented, under construction or operational.

Two wind farms have been identified within 10 km that are either operational or being constructed. Corriegarth Wind Farm, which consists of 23 turbines with 69MW capacity, has been constructed has been constructed and lies approximately 10 km to the North of the proposed site boundary. Stronelairg Wind Farm borders the proposed site boundary to the North and will consist of 66 turbines with capacity of 227MW.

Any cumulative effects on tourism are expected to be minimal, due to the location of the approved Stronelairg Wind Farm. As these developments are in close proximity, the wind farm will appear as an extension, reducing its cumulative impact on the landscape. Additionally, as there are few wind farms in the vicinity of the proposed development, the cumulative impact will be lower than at the chosen site.

Figure 7.1 – Summary of Impacts on Tourism Assets

Location	Classification of Impact
Trails, Cycle Routes & Railways	
The East Highland Way	Negligible
South Loch Ness Trail	Negligible
Great Glen Way	Negligible
National Cycle Route 7	Negligible
National Cycle Route 78	Negligible
Dalwhinnie – Newtonmore Railway	Negligible
Settlements & Main Roadways	
Fort Augustus	Negligible
Laggan	Negligible
Newtonmore	Negligible
Kingussie	Negligible
Invermoriston	Negligible
Kilfinnan / North & South Laggan	Negligible
General Wade's Military Road	Negligible
A86	Negligible
A9	Negligible
A82	Negligible

Source: BiGGAR Economics

8 SUMMARY OF SOCIO-ECONOMIC IMPACTS

This report has considered how the proposed development might be expected to affect the local economy.

A review of relevant economic development strategies suggests that the proposed development is consistent with national and regional economic development policy objectives, which emphasise the role and importance of renewable energy as a source of employment. In particular, the proposed development, by generating GVA and creating or safeguarding jobs could contribute to meeting the targets set by the Highland and Islands Enterprise.

The socio-economic baseline indicates that the Local Area is sparsely populated and the population is significantly older than Scotland as a whole, with the population expected to decline in the future. Economic activity in Highland is higher than that across Scotland, with Highland's unemployment rate and median annual wage being similar to the National average. The population of Highland is expected to grow older over time.

Of the Local Area, 27% of the population are employed in accommodation and food services as well as art, entertainment and recreation, often attributed to the tourism industry. Literature suggests that there is no detrimental effect of wind farms on the tourism industry, and these sectors are likely to benefit from expenditure by workers during the construction and development, and operation and maintenance phases.

The economic impact of the proposed development has been assessed using a model that has been developed by BiGGAR Economics specifically to estimate the economic impacts of wind farm developments and capital estimates by the developer. This model was also the basis of an assessment of the economic effects of the UK onshore wind sector for the DECC and Renewable UK, which was updated in 2015. This approach is considered industry best practice in assessing the economic impact of the onshore wind sector.

The results of the economic impact analysis suggest that during the development and construction phase the proposed development is expected to contribute up to:

- £25.2 million and 224 job years of employment in Highland; and
- £65.8 million and 596 job years of employment in Scotland.

During each year of the operation and maintenance of the proposed development could contribute up to:

- £5.2 million and 42 jobs in Highland; and
- £8.0 million and 67 jobs in Scotland.

There are also expected to be quantitative wider benefits, which include:

- a shared ownership opportunity for local communities to invest in up to 5% of the wind farm and invest the returns in the local area, generating substantial social and economic benefits; and
- non-domestic rates estimated at £1.9 million per year, £58.0 million over 30 years.