
Socio-Economics, Tourism and Recreation, and Land-Use

Non-Technical Summary

- 6.1. There will be no significant direct or indirect effects on tourism or recreation as a result of the Proposed Development both in isolation or cumulatively, although land within the Proposed Development will be inaccessible to the public during the construction and decommissioning phases for health and safety reasons. These effects are considered to be not significant in terms of the EIA Regulations.
- 6.2. The Proposed Development will further contribute to the positive economic effect of renewable energy, and associated skills base within the UK and Scotland. The contributions of the Proposed Development to the local community benefit fund (approximately £4.05 million over the lifetime of the Proposed Development) will be a valuable contribution to the community of the local area however, not significant in terms of EIA Regulations.
- 6.3. No significant effects in terms of the EIA Regulations are predicted on socio-economics, tourism and recreation and land-use receptors during the construction, operation or decommissioning phases of the Proposed Development.

Introduction

- 6.4. This Chapter of the Environmental Impact Assessment Report (EIA Report) evaluates the effects of the Proposed Development on the Socio-Economic, Tourism and Recreation, and Land-use resources.
- 6.5. This Chapter will examine the effect of the Proposed Development on socio-economics receptors before examining the effects on tourism, recreation and land-use interests within and surrounding the Proposed Development.
- 6.6. This Chapter is supported by the following figure:
 - Figure 6.1: Recreational Routes and Tourist Attractions.
- 6.7. This Chapter will be structured as follows:
 - Legislation, Policy and Guidance;
 - Assessment Methodology and Significance Criteria;
 - Baseline Conditions;
 - Assessment of Potential Effects;
 - Mitigation; and
 - Summary.

Legislation, Policy and Guidance

Legislation

- 6.8. The Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017ⁱ (the EIA Regulations) establish in broad terms what is to be considered when determining the effects of development proposals on socio-economics, tourism and recreation and land-use. In addition, the following guidance and information sources have been considered in carrying out this assessment.

National Policy

- 6.9. Scotland's Economic Strategyⁱⁱ sets out how the Scottish Government will provide support for businesses and individuals to grow in an economically sustainable way. The Economic Strategy contains several aims, including strategic approaches to infrastructure development and its effect on place. As part of this objective, the document aims to direct investment in order to maximise opportunities for employment, business, leisure and tourism, and also to join up planning policy to facilitate this.
- 6.10. The document identifies four strategic priorities which are critical to economic growth:
- Investing in our people, infrastructure and assets in a sustainable way;
 - Fostering a culture of innovation;
 - Promoting inclusive growth; and
 - Internationalisation.
- 6.11. The Scottish Government's Low Carbon Economic Strategy (LCES) for Scotland (2010)ⁱⁱⁱ forms an integral part of the government's strategy, setting the overarching agenda to support the transition to a low carbon economy. Under the theme of "*supporting business environment*" the LCES highlights the need to expand Scotland's areas of international comparative advantage, with particular attention required for building activity in a number of sectors including renewables.
- 6.12. On 23rd June 2014, the Scottish Government published the new Scottish Planning Policy (SPP)^{iv}. It is clear from SPP that the Scottish Government is committed to developing further renewable energy projects and paragraph 153 of SPP advises that:
- "..Efficient supply of low carbon and low cost heat and generation of heat and electricity from renewable energy sources are vital to reducing greenhouse gas emissions and can create significant opportunities for communities. Renewable energy also presents a significant opportunity for associated development, investment and growth of the supply chain."* (page 36).
- 6.13. Paragraph 80 states that "Where it is necessary to use good quality land for development, the layout and design should minimise the amount of such land

that is required. Development on prime agricultural land, or land of lesser quality that is locally important should not be permitted except where it is essential:

- “to meet an established need, for example for essential infrastructure, where no other suitable site is available; or
- for the generation of energy from a renewable source or the extraction of minerals where this accords with other policy objectives and there is secure provision for restoration to return the land to its former status.”

Regional Policy

6.14. Regional planning is set out in Chapter 4 of the EIA Report.

6.15. The Highland-wide Local Development Plan^v (HwLDP) was adopted by the Highland Council (THC) on 5th April 2012. Consideration must be given to relevant policies contained within the HwLDP to the design of the Proposed Development. The relevant policies with regards to socio-economics, tourism and recreation and land-use within the HwLDP are:

- Policy 67 – Renewable Energy Development states that the Council will support renewable energy developments where it is satisfied that they are located, sited and designed such that they will not be significantly detrimental overall having regard in particular to any significant effects on amenity at sensitive locations, including recognised visitors sites (in or outwith a settlement boundary); the amenity of users of any Core Path or other established public access for walking, cycling or horse riding; and tourism and recreation interests;
- Policy 77 – Public Access states that where a proposal affects a route included in the Core Paths Plan or significantly wider access rights, the Council will require the existing path to be retained or ensure an alternative access provision that is no less attractive, safe and convenient; and
- Policy 78 – Long Distance Routes seeks to safeguard and enhance long distance routes, and their settings.

Guidance

6.16. The following documents have been considered for the assessment of potential effects of the Proposed Development on socio-economics, tourism and recreation and land-use:

- Institute of Environmental Management and Assessment (IEMA) (2011) The State of Environmental Impact Assessment in the UK^{vi};
- Scottish Natural Heritage (SNH) (2013) A Handbook on Environmental Impact Assessment^{vii}; and
- Wind Farms and Tourism Trends in Scotland: BiGGAR Economics (2016)^{viii}.

Assessment Methodology and Significance Criteria

Scoping Response and Consultation

6.17. Throughout the scoping process, and subsequently during the ongoing EIA process, relevant organisations were contacted with regards to the Proposed Development. **Table 6.1** outlines the consultation responses received in relation to socio-economics, tourism and recreation and land-use.

Table 6.1: Scoping Response

Consultee	Type and Date	Summary of Response
British Horse Society	Scoping Response, June 2017	Highlights Policies 78 and 79 in the Highland-wide LDP (HwLDP) that relate to Public Access and Long Distance Routes. The Development is an excellent opportunity to improve connections in the community. Note: HwLDP Policies 77 and 78 relate to Public Access and Long Distance Routes respectively. There is no Policy 79 in the HwLDP.
SNH	Scoping Response, 11 th May 2017	With reference to the Land Reform (Scotland) Act 2003, the applicant should pay due regard to the potential use of the area for recreation by the general public when designing and planning the proposed development. Regard should be given not only to the proposed development site but also the proposed access routes and additional tracks, which may increase the perceived recreational value of the area. Access should not be restricted unless necessary for health and safety or other overriding reasons. Where access needs to be restricted at any time, clear signage following the Scottish Outdoor Access Code branding guidelines is recommended.
ScotWays	Scoping Response, 23 rd May 2017	The National Catalogue of Rights of Way (CROW) shows that right of way HR46 is affected by the area outlined in red, shown as the Scoping Site Boundary, on Figure 2.1 Preliminary Turbine Layout. The applicant should be aware that their description of the start of the

		route is not as it is recorded in CROW. Our records indicate that HR46 starts on the A835 at Loch Glascarnoch. The route starting at the Aultguish Inn is the variant route noted above and promoted as a Scottish Hill Track.
VisitScotland	Scoping Response, 21 st April 2017	Scenery and the natural environment have become the two most important factors for visitors in recent years when choosing a holiday location. We would suggest that full consideration is also given to the Scottish Government's 2008 research on the impact of wind farms on tourism. VisitScotland would strongly recommend any potential detrimental impact of the proposed development on tourism - whether visually, environmentally and economically - be identified and considered in full. This includes when taking decisions over turbine height and number.
Fisheries Management Scotland	No response	N/A
Scottish Wild Land Group	No response.	N/A
John Muir Trust	No response.	N/A
Garve & District Community Council	No response.	N/A

Scope of Assessment

6.18. This Chapter considers:

- The effect of the Proposed Development on the socio-economics including employment;
- The effects on tourist attractions and recreation facilities within and immediately adjacent to the Proposed Development; and
- The effects on land-use in the immediate vicinity of the Proposed Development.

6.19. The key issues for the assessment of potential effects relating to the Proposed Development are:

- Temporary direct and indirect effects arising from the construction phase;
- Long-term direct and indirect effects that occur during the operational phase, but are mitigated at decommissioning; and
- Permanent direct and indirect effects that continue after decommissioning.

- 6.20. Recreational behaviour will be affected where a development potentially leads to a change in recreational habits or activities. Factors which might lead to change in recreational behaviour include loss, closure, or diversion of routes; obstructing access routes; enhancing access; reduction in amenity or intrusion; enhancement in amenity; and changes in setting and context of the recreational resource. Some of these topics are dealt with in other chapters of this EIA Report.
- 6.21. Therefore, this Chapter deals primarily with amenity, which is defined as the pleasantness of the recreational asset that contributes to its character, i.e. the essence of why the asset is visited. As they are linked with recreational behaviour, the effects on tourism will be considered as a single receptor alongside recreation.
- 6.22. Land-use is the management and occupation of the environment by man, and what the land is used for, both at present and in the future. Developments on land-use can affect the ability of the land to be effectively used for its current purpose, and also affect the potential use in the future. In this case, the Proposed Development is located on an agricultural area, and the effect on land-use may affect the region's ability to contribute to the agricultural economy.

Study Area

- 6.23. The Study Area in this assessment is receptor specific, as follows:
- Socio-economics – the geographical size of the Highland area means that the Proposed Development will not affect the entire area. As national statistics apply to the Highland's as a single area, it will be referred to for a number of assessments. It is also necessary to consider impacts at a more local level. In this Chapter, the local area has been defined as Ross and Cromarty which is an area commonly used in local economics and tourism planning.
 - Tourism and Recreation – the Study Area comprises land within and immediately adjacent to the Proposed Development in considering direct effects, and within 5 kilometre (km) of the Proposed Development in considering indirect effects; and
 - Land-use – the area occupied by the Proposed Development, either temporarily during construction and decommissioning or permanent after operation and decommissioning.

Baseline Survey Methodology

- 6.24. The following sources of information have been used to inform the baseline description set out in this Chapter.
- Heritage Paths (www.heritagepaths.co.uk);
 - Land Capability for Agriculture, Macaulay Institute (<http://www.macaulay.ac.uk/explorescotland>);
 - National Statistics Online (www.statistics.gov.uk);
 - NOMIS Official Labour Market Statistics (www.nomisweb.co.uk);

- Scottish Tourist Board (www.visitscotland.com);
- Scotways website (www.scotways.com); and
- Sustrans website (www.sustrans.co.uk).

6.25. Baseline conditions have been established through desktop studies and consultation including responses to the scoping report (13th June 2017).

Assessment Methodology

6.26. Effects on the socio-economics, tourism and recreation and land-use resources can be described as direct, indirect or cumulative.

6.27. The socio-economic assessment aims to predict the likely effects (both positive and negative) arising from the Proposed Development. Social and economic effects are divided into:

- Direct effects: opportunities that can be created as an immediate effect of the Proposed Development;
- Indirect effects: opportunities that will be created by the Proposed Development further down the supply chain, for examples companies providing services to the Proposed Development; and
- Induced effects: for example employment opportunities created by the additional spend of wages into the local economy and the purchasing of basic materials, equipment and office space for staff.

6.28. The sensitivity of the receptor/asset to an effect reflects the level of importance assigned to it. This allows the identification of key economic, tourism, recreational or land-use assets. The criteria used for defining sensitivity to effects on socio-economic, tourism or recreational assets are as follows:

- High Sensitivity – Assets/receptors of national importance;
- Medium Sensitivity – Assets/receptors of regional importance;
- Low Sensitivity – Assets/receptors of local importance; and
- Negligible Sensitivity – Assets/receptors with less than local importance.

6.29. In determining the magnitude of effect, the values of the asset affected are first defined. This provides the baseline against which the magnitude of change can be assessed; the magnitude of effect being proportional to the degree of change in the asset's baseline value. The criteria for assessing the magnitude of change are as follows:

- Large Magnitude - Total loss or major alteration of the socio-economic, tourism or recreational assets/receptors;
- Medium Magnitude – Loss of, or alteration to, one of more key elements of the socio-economic, tourism or recreational assets/receptors;
- Low Magnitude – Slight alteration of the socio-economic, tourism or recreational asset/receptors;
- Negligible Magnitude – Barely perceptible alteration of the socio-economic, tourism or recreational asset/receptors.

Assessment of Significance

6.30. The evaluation of significance presented in **Table 6.2** provides a guide to decision making, but is not a substitute for professional judgement and interpretation, particularly where the sensitivity or effect magnitude levels are not clear or are borderline between categories. Predicted 'major' or 'moderate' effects are considered to be significant in terms of the EIA Regulations for the purpose of the assessment of effects on socio-economics, tourism, recreation and land-use.

Table 6.2: Illustrative Matrix of Significance of Effects

Magnitude/ Sensitivity	High	Medium	Low	Negligible
High	Significant	Significant	Not Significant	Not Significant
Medium	Significant	Significant or not significant	Not Significant	Not Significant
Low	Significant or not significant	Not Significant	Not Significant	Not Significant
Negligible	Significant or not significant	Not Significant	Not Significant	Not Significant

- 6.31. Effects can be positive or negative and these are specified where applicable in the assessment within this Chapter.
- 6.32. For assessing significance, consideration is given to the national, regional and local baseline situation. The magnitude of the impact is determined in proportion to the area of impact relevant to each receptor.
- 6.33. In terms of socio-economic factors, potential effects would be significant if the Proposed Development resulted in any fundamental or material changes in population, structure of community, and economic activity during the operational phase.

Assessment Limitations

- 6.34. Data has been collated from published sources; no survey specific to the Proposed Development and in support of this assessment have been carried out.
- 6.35. Whilst efforts have been made to ensure that the key tourism and recreation facilities in the area have been identified, it is possible that there are a number of small attractions that will not have been identified through the data collection process.

Baseline Conditions

- 6.36. Lochluichart and Lochluichart Wind Farm Extension ('the Operational Schemes') are considered as part of the baseline for this assessment, however wider cumulative effects are considered as a separate assessment.

Socio-economics

- 6.37. The Proposed Development is located approximately 19 km northwest of Strathpeffer within the wider Ross and Cromarty area of the Highlands. The Highlands covers 26,484 km² which is equivalent to 33% of Scotland's overall land mass. The Highlands is the 7th largest area in terms of population, with a total population size of 234,800 in 2016^{ix}. There is a resident population of 54,124 within the Ross and Cromarty area.
- 6.38. According to NOMIS figures, in 2017 82.7% of the population in the Highlands were economically active (123,000 people), greater than the national average of 77.3%. The unemployment rate in the Highlands (3.7%) is currently below the Scottish average (4.3%). The latest figures from 2009 show an average weekly pay for employees in the Highlands was around £529, lower than the Scottish average of £536.
- 6.39. The Highlands have a high dependence on public sector employment, particularly in the island areas, and on tourism, which is highly seasonal in most areas. The Highlands has a higher proportion of employment than Scotland in public administration, education and health (32.8% compared with 30.0%), distribution, hotels and restaurants (24.9% to 22.2%), construction (6.9% to 5.9%), transport and communications (6.1% to 5.1%), agriculture and fishing (2.3% to 1.7%), manufacturing (8.9% to 8.7%) and other services (5.5% to 5.4%). The Highlands has a smaller percentage of its employment than Scotland in banking, finance and insurance (11.8% to 19.1%), and in energy and water (0.9% to 1.8%).
- 6.40. The UK renewables industry plays a central role in the economy by producing, transforming and supplying energy in its various forms to all sectors. UK Government statistics released 31st January 2018 show turnover from renewable energy activity in Scotland was £5,458 million in 2016 – with individual sectors showing employment increases of up to 300% between 2015 and 2016^x. Scottish onshore wind projects, which support 8,000 jobs, delivered almost half (45.8%) of the UK's turnover from onshore wind in 2016, the latest year for which figures are available. Scotland's turnover from onshore wind activities totalled £1.5 billion in 2016.

Tourism and Recreation

- 6.41. The Proposed Development is located within a relatively remote setting with recreation opportunity based around the natural environment such as hills, wildlife, lochs and rivers.
- 6.42. Loch Luichart Estate offers sporting holidays including deer stalking, pheasant shooting, guided hill walking, photography and shooting as well as fishing on both Loch Luichart and the River Connon^{xi}.

- 6.43. There are no long-distance routes as defined by in Figure 11 of the HwLDP within or near the Proposed Development. The closest is the National Cycle Network which travels north to south through Dingwall, approximately 20 km to the east of the Proposed Development.
- 6.44. Visitor accommodation within 5 km of the Proposed Development is largely concentrated around the settlements including Garve. The following accommodation is located in close proximity to the Proposed Development:

Table 6.3: Accommodation Receptors

Accommodation	Proximity to Development	Receptor Characteristics
Aultguish Inn	2.3 km north east	Roadside Inn on the A835 by Glascarnoch Dam. Contains 24 bedrooms, an additional bunkhouse, a restaurant and a bar. The Inn has traditionally catered for hill walkers but, has now diversified to capture passing trade, with the recent addition of a coffee shop.
Mossford B&B	2 km south	This property has views across the loch rather than towards the Proposed Development.

- 6.45. The National Catalogue of Rights of Way (CROW) shows that right of way HR46 is approximately 500 m north east of the Proposed Development, shown in Figure 6.1. Located approximately 1.5 km north east of Turbine 2 (the closest site infrastructure), right of way HR46 is known as the Fish Road and is promoted by the Heritage Paths project for its historic interest. The route is also described in ScotWays publication Scottish Hill Tracks with a slight variation at its northern end to head more directly towards the Aultguish Inn. ScotWays records indicate that HR46 starts on the A835 at Loch Glascarnoch. The route starting at the Aultguish Inn is the variant route noted above and promoted as a Scottish Hill Track.
- 6.46. There are no Core Paths or other designated walking routes within the 5 km Study Area for the Proposed Development.
- 6.47. Though not a 'National Tourist Route' as identified by VisitScotland, the A835 to the south of the Proposed Development is a key route to the west coast and beyond. The A835 is included within the 'North Coast 500' although not the section which passes the Proposed Development site entrance^{xii}. This is particularly the case with the A835, which connects to Ullapool from where ferries depart to the Western Isles.
- 6.48. During the EIA process for the Operational Schemes, traffic count data was obtained from the Scottish Executive for the periods August 2003 and February 2004 for a number of points along the A835 route including at the Aultguish Inn. During the summer, the average daily two-way traffic movements were 2,105, compared with 982 in the winter.

- 6.49. The baseline annual average daily traffic (AADT) is detailed in **Table 7.4** of the EIA Report. Table 7.4 shows 1932 vehicles pass the Aultguish Inn in 2016; 175 of which are HGVs. A growth factor of 1.063 was applied to the 2016 base flows to forecast traffic for the year 2021, assumed to be the year of construction. In 2021, it is anticipated there will be 2054 AADT of which 186 are expected to be HGVs.
- 6.50. The A832, which leads from the A835 just north of Garve and passes through Lochluichart, is known as the Western Ross Coastal Trail, owing to the 86-mile loop it forms via west coast and back to the A835 at Braemore Forest. The A832 also provides a link to Kyle of Lochalsh and the Isle of Skye. Daily traffic on the A832 just west of its junction with the A835 has 1760 two-way movements in August 2003, and 795 two-way movements in February 2004. These figures are updated for 2016 and 2021 in **Table 7.4**.
- 6.51. Whilst these two routes are clearly important for tourists, it should be noted that, more fundamentally, the A832 and A835 are the principal links between Inverness and northwest Scotland, including Ullapool and other communities on the western coast, as well as the Western Isles. As such, tourist movements form only one component of the traffic levels recorded on this route.
- 6.52. The Kyle of Lochalsh to Inverness railway line, which passes along the southern side of the Site, is also a potential tourist route with stops at Lochluichart itself as well as Garve and Achanalt. The railway line is approximately 4 km from the Site Boundary. The route is well-known as it was featured on Michael Palin's 'Great Train Journeys of the World'^{xiii}. There are approximately twelve trains per day on the Inverness to Kyle of Lochalsh line on Monday to Saturday, and two on Sundays^{xiv}.
- 6.53. The potential for impact on tourism is closely linked to the perception of those visiting the area. This section provides a brief overview of studies undertaken which discuss public perception of wind farm development across the UK.
- 6.54. A Department of Energy and Climate Change (DECC) survey on public attitudes showed that in March 2014, 80% of the British public said they supported using renewable energy for electricity, heat and fuel in the UK.
- 6.55. An Ipsos MORI poll was commissioned by Renewable UK / Hill and Knowlton Strategies in 2012 to determine public attitudes towards wind farms. The survey, based on 1,009 respondents, found that over 65% of respondents were in favour of wind power in the UK. Furthermore, 57% of respondents believed wind farms were an acceptable addition to the landscape.
- 6.56. These studies highlight the varying opinions of visitors and residents regarding wind energy development, however, they suggest in all cases, that the majority of those surveyed do not have a negative attitude towards wind farms.
- Land-Use
- 6.57. Loch Luichart Estate is managed primarily for farming, forestry, and as a sporting and recreational estate, as indicated in the previous section. The

Proposed Development extends over approximately 595 hectares (ha) of gently sloping open moorland intersected intermittently by burns. The A835 is immediately north of the Proposed Development.

- 6.58. The Operational Schemes and Corriemoillie Wind Farm are adjacent to the Proposed Development; as detailed in Chapter 1. The nearest residential property is Aultguish Inn, approximately 1.5 km to nearest proposed turbine. The noise effects on nearby residential properties are considered in Chapter 8: Noise.
- 6.59. As the land is under private ownership, it is considered that any effects directly affecting the landowner are subject to a commercial arrangement between the developer and the landowner.

Assessment of Potential Effects

Effects on Socio-economics

- 6.60. As stated in Section 6.40, Scottish onshore wind projects support 8,000 jobs, and delivered almost half (45.8%) of the UK’s turnover from onshore wind in 2016 which equates to £1.5 billion.
- 6.61. At a local level, the Proposed Development may result in contract opportunities for local and regional contractors both for construction activities themselves and throughout the supply chain. The construction phase of the Proposed Development (including turbine manufacture) could result in construction capital expenditure of up to £42.77 million (m) based on the weighted average construction cost being £1.32 m per MW based on information gathered from other wind farms and reviewing published documents (Renewable UK, 2011^{xv} and DECC, 2011^{xvi}). All figures based on assumed total installed capacity of 32.4 MW.
- 6.62. The investment in the Proposed Development has the potential to generate a range of economic and social effects and opportunities for local businesses, most notably employment opportunities and local spending.
- 6.63. Potential social and economic effects can be divided into:
 - Wider effects, which are unquantifiable: including effects in the wider economy from renewable energy development, such as research and development, skills development and worker retention.
 - Direct effects: for example, employment opportunities in the construction, operation and maintenance and decommissioning of the Proposed Development. The nature and scale of the economic effects would depend on the total cost and the sources of the materials and labour. Other direct effects include a community benefit fund; the payment of non-domestic rates; and rental income received by the landowner.
 - Indirect effects: such as employment opportunities created down the supply chain by those companies providing services to the Proposed Development during construction, operation and decommissioning.

- Induced effects: for instance, employment created by the additional spend of wages into the local economy and the purchasing of basic materials, equipment and office space for staff.

6.64. There effects are assessed below for each phase of the Proposed Development.

Local Investment

6.65. The Lochluichart Community Trust (LCT) was established as a result of the community benefit which flowed from the Operational Schemes and from the Ledgowan hydro scheme. The fund from both providers is distributed to projects and initiatives within the Garve area, with particular emphasis on local regeneration and community development. Since its formation in 2014 the fund has distributed in excess of £700,000.

6.66. Whilst funding for the LCT comes from a number of sources including the operational wind farm Community Benefit fund, which are generally available for around 25 years (the operational life of the scheme) pressure on fundraising, particularly grant funding, is growing and securing sustainable income for the long term is a key priority. Investing in the Proposed Development shared ownership scheme could provide one such solution for this organisation.

6.67. The Proposed Development will be open to investment from community organisations and social enterprises up to a maximum of 10% of the project most likely via a 'shared revenue' model, one of the options proposed in the "Good Practice Principles". Potential returns over the lifetime of the wind farm into the local third sector economy would help those organisations involved to ensure their development plans have a secure source of funding over the life of the wind farm.

6.68. Returns are dependent on a range of inputs which include (but are by no means inclusive of) energy price, turbine pricing, inflation, ability of a project to attract a support mechanism, cost of debt financing, which are all subject to market changes in the run up to operation. Infinergy would seek to de-risk the investment proposal as much as possible in order to safeguard community funds, seeking financial investment at point of operation, however, hopes to be able to offer a return in the region of 7% per annum.

6.69. This would enable a community which is extremely active in creating a more sustainable future to increase its work across more areas of priority as well as looking to develop a legacy fund to continue on well past the operational life of each development.

Wider Economic Benefits

6.70. In terms of potential supply chain benefits, the Proposed Development provides opportunities for the involvement of local, regional and Scottish suppliers in a range of activities, including research and development, design, project management, civil engineering, component fabrication / manufacture, installation and maintenance. There is expertise in all of these areas in the

wider region, although a full wind energy supply chain covering all aspects of wind turbine component manufacture has not yet been developed within the region or indeed within Scotland as a whole.

- 6.71. Scotland currently houses wind turbine tower and base manufacturing plants in Argyll and Bute^{xvii}. CSWind UK commenced tower manufacturing at the Machrihanish, on the west coast of Scotland in 2002 and provide ready to install tower solutions for the onshore and offshore wind energy market. In addition, they also provide services for the repair and modification of turbine tower sections. During 2016, CSWind made a £27 million investment in the facility which will increase production volume and capacity at the existing onshore wind tower factory and allow for the fabrication of larger diameter towers for the offshore wind sector. Keeping pace with this has required the realignment of production and recruitment of staff (134 full-time equivalent posts at present)^{xviii}.
- 6.72. Proposals are also emerging for the location and development of wind turbine manufacturing facilities, including those in and around the east coast, although these are currently primarily for offshore machines.
- 6.73. The key consideration in this context is that with an increasing number of wind farm schemes either operational, under development or having gained consent in Scotland, the commercial viability, and with it job prospects amongst Scottish firms, has improved. Cluster benefits in the industry increase where firms are supported by the spending of other firms within the renewables sector. The net effect is to increase business and employment opportunities within Scotland's renewable energy sector, boosting the performance of local and national economies.
- 6.74. In addition, during the construction process there will be opportunities where those employed will develop skills that will be of benefit to the local economy and to local businesses in the longer term. Further, employment generated through the Proposed Development will contribute to diversifying the local economy and help support the retention in the area of the working age population.

Construction Effects

- 6.75. The construction and development cost of the Proposed Development was estimated by applying the expected installed capacity by the industry average construction and development costs per MW.
- 6.76. The application is for 9 turbines with a total generation capacity up to 32.4 MW.
- 6.77. According to research undertaken by BiGGAR Economics on behalf of RenewableUK in 2015, average expenditure on the construction and development of wind farm is approximately £1.32 million per MW. Therefore, it is estimated that this phase of the development will require an investment of £42.77 million.

6.78. The proportion of construction and development spending that is on each of the main categories was also from BiGGAR Economics research into wind farms currently in operation. This found that the largest proportion of capital expenditure (capex) was on turbine-related contracts (57.8%), followed by balance of plant (25.6%), development and planning (10.2%) and grid connection (6.3%).

Table 6.1: Construction and Development Expenditure

	% of capex	Value (£m)
Development and Planning	10.2	4.36
Turbines	57.8	24.72
Balance of Plant	25.6	11
Grid Connection	6.3	2.69
Total	100.0	42.77

6.79. Sizeable contracts would be placed for the supply of goods, materials and services required for the Proposed Development during its construction phase. Among the services that local contractors may be able to provide during the construction phase:

- Haulage and transport services;
- Site clearance;
- Access road, turbine platform construction and other civil engineering services;
- Site and ground investigation services;
- Building construction, electrical, plumbing, roofing, flooring, plastering, decorating and joinery services;
- Crane companies to provide lifting services;
- Plant and equipment hire;
- Fencing, road furniture and signage installation;
- Supply of building and electrical materials (e.g. aggregates, concrete, cabling, equipment, culvert tubes etc.);
- Mechanical, electrical, project management and supervisory services;
- Provision and servicing of temporary welfare facilities; and
- Supply of fuel and other consumables.

6.80. Based on previous experience of constructing wind farm developments of a similar scale, it is estimated that during the anticipated thirteen-month construction period, the Proposed Development could potentially support an average of 30 staff onsite per day.

6.81. The 51 MW Lochluichart Wind Farm received planning approval in 2008 and at the beginning of 2012, the 18 MW Lochluichart Wind Farm Extension was consented. The complete 69 MW project became fully operational in June 2014. Throughout the construction of the Operational Schemes, Eneco

committed to providing opportunities for local contractors and suppliers resulting in an estimated £3.5 m investment in the local area.

- 6.82. Overall, the construction of the Proposed Development will bring short-term, beneficial, direct and indirect effects to the area, through the increase in employment. This will not result in any fundamental or long-term change to population, local services, employment or overall structure of the community, but effects will be of medium magnitude at the local level (of low sensitivity). This would not be significant under the EIA regulations.

Induced Effects

- 6.83. Induced effects will also occur when the earnings of workers supplying services to the Proposed Development are spent both locally and elsewhere in Scotland. For example, local shops, cafes, accommodation providers and hotels often experience an increase in turnover during the construction phase as they have opportunities to provide additional services to the Developer and their contractors. As noted in Section 6.44, there are several accommodation options in the local area, and it is expected that local services will be used by temporary construction contractors.
- 6.84. Overall, the construction of the Proposed Development will bring short-term, beneficial, induced effects to the area, through the increase in employment. This will not result in any fundamental or long-term change to population, local services, employment or overall structure of the community, but effects will be of medium magnitude at the local level (of low sensitivity). This would not be significant under the EIA regulations.

Capital Expenditure

- 6.85. Based on the BiGGAR Economics report commissioned by RenewableUK^{xix}, onshore wind Capital Expenditure (CAPEX) is £1.32 per MW on average. This includes the following elements:
- Turbine: Tower; Blades; and Nacelle.
 - Balance of Plant: Civil and Project Management; Roads; Substation Buildings; Turbine foundation and hardstanding; Landscaping/forestry/fencing; Mechanical and electrical installation.
 - Grid Connection: Engineering services; construction; electrical components; and industrial equipment and machinery.
- 6.86. On the basis that the Proposed Development has a capacity of 32.4 MW, a total CAPEX of the order of £42.77 would be expected.
- 6.87. The BiGGAR Report estimates that, of these construction costs, local expenditure would be 12% (in this case the Highlands); regional/national expenditure would be 36% (Scotland); and UK expenditure would be 47%. 53% of construction costs will be spent outwith the UK.

- 6.88. The effects of the construction phase of the Proposed Development will not have a significant effect on socio-economic receptors in accordance with the EIA Regulations.

Operational Effects

- 6.89. The Proposed Development will have both direct and indirect effects on employment during operation. The Proposed Development will be regularly maintained by a specialist maintenance team. Employees are likely to include a part-time maintenance engineer (local site operator) and a small number of staff to occasionally service the turbines. Induced effects will include local spending by the Applicant and maintenance contractors.
- 6.90. Overall, the operation of the Proposed Development will bring long-term, beneficial, direct, indirect and induced effects to the area, through the increase in employment and business opportunities. This will not result in any fundamental or long-term change to population, local services, employment or overall structure of the community, but effects will be of low magnitude at the local level (of low sensitivity). Employment effects arising from the operational phase are of negligible, positive significance, but this is considered to be not significant in terms of the EIA Regulations. However, the Proposed Development will contribute to employment in Scotland.
- 6.91. In the 2015 BiGGAR report on the economic benefits of the UK onshore wind industry, the average cost of an onshore wind farm was £59,867 per MW installed per annum. This includes:
- Turbine Maintenance;
 - Site Maintenance;
 - Operational Management;
 - Land Agreements;
 - Habitat Management costs;
 - Non-domestic rates (business rates);
 - Community Benefit; and
 - Other.

Operational Expenditure

- 6.92. For this Proposed Development, annual Operational Expenditure (OPEX) is therefore expected to be in the region of £1.9 million per annum. Of this total spend, the BiGGAR report estimates 42% will be spent in the local area, which would include business rates and land agreements with the local landowner, as well as a proportion of the maintenance costs. 87% of the total operation and maintenance expenditure will likely be within the UK.
- 6.93. The OPEX for the Proposed Development is not substantial in magnitude in comparison to the annual GDP of the Highlands or the value of the renewable industry in Scotland, with the majority of the expenditure taking place at the local, regional or Scotland level, which would lead to a conclusion of a positive, negligible effect, and would be not significant in terms of the EIA

Regulations. However, it is considered that an impact of nearly quarter of a million pounds per annum into the regional economy should be considered significant at the local/regional scale.

Community Fund

- 6.94. A community fund has also been allocated that supports local projects throughout the lifetime of the wind farm. This is administered by the Lochluichart Community Trust (LCT), a charitable organisation established by Eneco, involving democratically elected members of the community to oversee the distribution of the fund.
- 6.95. The LCT's purpose is to oversee the distribution of the allocated community benefit fund which is £2,750 per MW installed capacity throughout the lifetime of the wind farm. The current annual value received is £176,802 per year. With a 25 year consent, this will provide approximately £4.4 million in community benefit. The fund is distributed to projects and initiatives within the Garve and District Community Council area, with particular emphasis on local regeneration and community development.
- 6.96. The Proposed Development will contribute £5,000 per MW installed capacity. This will result in an annual value of approximately £162,000 per year. With 25 year consent, this will provide approximately £4.05 million in community benefit.
- 6.97. Local residents have been offered the opportunity to receive green electricity at a discounted rate from the LCT and those in close proximity of the wind scheme have been offered the option to a £250 rebate on their annual electricity bills.
- 6.98. LCT granted an award of £243,300 to the Garve & District Broadband group for fibre to premises for those houses not close to the exchange in Garve. It is anticipated that all houses within the Garve & District Area will have the ability for faster Broadband by the end of 2018.
- 6.99. Following the award of £13,020 to the Garve & District Community council, LCT installed defibrillators at Aultguish Inn, Inchbae Lodge Inn, Garve Village Hall, Lochluichart Church of Scotland and Achnasheen Village Hall who all offered their buildings as locations for this potential lifesaving equipment. Lucky2BHere, a charity based in Skye offered local residents free life support training in Gave and Achnasheen. Approximately 40 residents took up this offer meaning the community of Garve & District now have residents trained in event of an emergency.
- 6.100. Eneco UK launched two competitions on behalf of the LCT aimed at children and young adults residing in the Garve and District Community Council area only. One of the competitions was to design a logo for LCT.
- 6.101. Other grants awarded by LCT include:
- Dingwall Academy – Rock Challenge (£1,000);
 - Strathgarve Parent Council – Transport and Events (£1,811.92); and

- Strathgarve Parent Council – Playpark (£25,535).

- 6.102. Rather than investing in advertising and corporate sponsorship, the Applicant aims to create legacy projects for local communities for which its generating assets are based. Opened on 1st June 2015, the Aultguish Tourism Bothy is a portacabin which hosts information about the surrounding Highland landscape, past and present. As the Operational Schemes are the latest addition to the landscape, it is featured in the Bothy explaining how a wind farm works. A number of the photographs of the wind farm were taken by local people who took part in a competition to capture scenes of the modern Highland landscape.
- 6.103. Although not a material consideration for the planning process, the Community Fund represents a medium magnitude effect for the local community, a direct, positive, long-term effect acting at a local scale and therefore constituting a minor beneficial effect, although this is not significant in terms of the EIA Regulations. The Proposed Development will contribute to the minor beneficial effect.
- 6.104. As stated throughout this Section, the effects of the operational phase of the Proposed Development will not have a significant effect on socio-economic receptors in accordance with the EIA Regulations.

Decommissioning

- 6.105. Socio-economic effects during the decommissioning phase are anticipated to be of a similar nature and scale as construction effects thereby representing a short-term, positive effect acting at a local level, resulting in a minor effect which is, however, not significant in terms of the EIA Regulations.

Effects on Tourism and Recreation

- 6.106. Potential effects on the tourism and recreational resource are categorised as:
- Direct physical effects: for example, construction activities interfering with rights of access; and
 - Indirect effects: such as the changes in amenity on tourists and recreational land users.

Construction Effects

- 6.107. The Proposed Development is accessible via the Land Reform Act (Scotland) 2003^{xx}, however, access to areas where construction is taking place or where there are construction related activities may be restricted. The Construction (Design and Management) Regulations 2015^{xxi} is a legal obligation for health and safety purposes. Notices will be placed in prominent locations around the Proposed Development with details of any areas with restricted access. Such measures would be agreed in advance with the Council.
- 6.108. It is considered that the Proposed Development is of medium sensitivity for recreation, as it does not contain any paths or recreational facilities which are of importance at a local to national level, and access to the neighbouring hills will be available from other locations surrounding the Proposed Development.

Although the Proposed Development is used as a sporting estate, the owners of Loch Luichart Estate have a commercial agreement with the Applicant, and therefore not subject to EIA. The magnitude of effect would be low, given there is alternative access to the surrounding hills, which are used as walking routes. Therefore, the effect is considered to be a short-term negligible effect, which is not significant in terms of the EIA Regulations.

- 6.109. The effects on walking routes will be limited to access and general amenity. There are no designated walking routes on the Proposed Development however, there is Fish Road approximately 2 km to the north east. The construction works within the Proposed Development will have no direct effects on walking routes within the 5 km Study Area.
- 6.110. Construction effects on amenity and enjoyment of the walks will be localised, as the nearest construction works will be located approximately 2 km from the closest walking route (Fish Road) and will be detectable to those using the routes for only short periods along the route. As the walking route has a medium sensitivity and the magnitude is considered to be low, the effects are considered to be short-term and minor, and therefore not significant in terms of the EIA Regulations.
- 6.111. Other offsite resources such as the accommodation listed in Section 6.44 are unlikely to be affected by the construction of the Proposed Development. Due to the intervening distance of these receptors from the Proposed Development, it is considered that the magnitude of effect would not be low and of low sensitivity to construction effects. Therefore, this signifies a short-term, negligible adverse effect which is considered to be not significant in terms of the EIA Regulations.
- 6.112. As stated throughout this Section, the effects of the construction phase of the Proposed Development will not have a significant effect on tourism and recreation receptors in accordance with the EIA Regulations

Operational Effects

- 6.113. The land within the Proposed Development will be accessible to the public at all times of the year as per Section 1 and 2 of Land Reform Act (Scotland) 2003. However, temporary exclusions may be needed, for health and safety reasons, during times where essential maintenance is required. Where these are required, clear signage advising of the restrictions will be provided. This will be similar to the current requirements for the Operational Scheme. This would therefore represent a low magnitude of effect on a low sensitivity receptor, constituting long-term, negligible adverse effect which is not significant in terms of the EIA Regulations. There are no core paths within the 5 km Study Area of the Proposed Development, though a heritage path (Fish Road) is to the east of Corriemoillie Wind Farm.
- 6.114. Visual effects associated with the Proposed Development may occur at receptor locations, when people are looking towards the Proposed Development and from locations where clear views of the turbines are available. The visual effects of the Proposed Development on tourism and recreational resources such as Ben Wyvis are assessed in Chapter 9 of this

Environmental Report. As Ben Wyvis is outwith the 5 km Study Area for this assessment, the effects on tourism and recreation of this receptor are not considered. It should be noted that there is a distinction between a visual effect and a recreational amenity effect. Recreational amenity effects are described as effects that would influence the recreational value e.g. use or enjoyment of an asset such as a walking route.

- 6.115. Evidence suggests that walkers are currently utilising the tracks associated with the Operational Scheme and they are likely to do so in the future. It is anticipated that the tracks associated with the Proposed Development would also be utilised for access, but is unlikely to result in an increase in on site recreation.
- 6.116. It is considered that the Proposed Development will result in a negligible change to the baseline when considering the Operational Schemes with regards to tourism and recreation. Whilst receptors would be of medium sensitivity, effects are not anticipated to be significant due to negligible magnitude of the impact.
- 6.117. As stated throughout this Section, the effects of the operational phase of the Proposed Development will not have a significant effect on tourism and recreation receptors in accordance with the EIA Regulations.

Public Attitudes to Wind Farms

- 6.118. As discussed in Section 6.56, surveys of public attitudes to wind farms provide no clear evidence that the presence of wind farms in an area has a negative impact upon tourism. It is important to note that the Operational Schemes have been operational in the area for over four years, and tracks have been used by members of the local community for dog walking. The increase in use is not considered to be significant.
- 6.119. In July 2016, BiGGAR Economics produced a report entitled 'Wind Farms and Tourism Trends in Scotland' analysed the impact of Scottish wind farms on tourism-related employment, concluding there was no evidence to suggest wind farms had an adverse effect on tourism. The study found that at a national level the number of wind turbines in Scotland increased by 121% between 2009 and 2013. During the same period, tourism-related employment rose by 10.8%.
- 6.120. However, the BiGGAR Report found the distribution of both wind farms and tourism jobs varied significantly across the country so it also looked at the impact on tourism employment in areas with a higher proportion of wind turbines. It concluded there was no clear relationship between the growth in the onshore wind sector and growth in the tourism sector.
- 6.121. The BiGGAR Report also found that there was no overall relationship between the development of wind energy and tourism employment in the area. In the majority of cases, the level of tourism employment increased more in the immediate area surrounding a wind farm than in the wider local authority and wind farms become tourist attractions in themselves.

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- 6.122. Overall, there is no relationship between the development of onshore wind farms and tourism employment at the level of the Scottish economy, neither at local authority level nor in the areas immediately surrounding wind farm development.

Decommissioning

- 6.123. Effects during the decommissioning phase are anticipated to be of a similar nature and scale as construction effects thereby not significant in terms of the EIA Regulations.

Effects on Land-Use

- 6.124. The Proposed Development covers an area of 595 ha. However, the total infrastructure footprint will be substantially less.

- 6.125. Part of the access tracks required for the Proposed Development will utilise existing access tracks which serve the Operational Schemes. The total new land take of the Proposed Development, consisting of the wind turbine foundations, crane hardstandings, borrow pits, blade laydown areas, new access tracks, substation, control building and battery storage facility equates to 24.17 ha; following construction and restoration, the footprint of the Proposed Development on the surface of the ground will be 8.37 ha. This equates to approximately 1.4% of the total land in the Proposed Development.

Construction Effects

- 6.126. Although the Proposed Development is not currently farmed, ongoing agricultural activities, such as the grazing of livestock, within the areas directly involved in the construction would be temporarily affected during the construction phase of the Proposed Development. The Applicant will work with the landowners to ensure that they are able, wherever possible, to continue to operate their activities safely during the construction phase. However, exclusion of grazing animals may be required during this time, or part of this time, for health and safety reasons.

- 6.127. The land-use is considered to be a low sensitivity receptor as it is not used by the public. As construction effects will be limited and temporary in nature, the magnitude of effects are considered low.

- 6.128. The construction phase is therefore considered to be not significant in terms of the EIA Regulations. As stated throughout this Section, the effects of the construction phase of the Proposed Development will not have a significant effect on land-use receptors in accordance with the EIA Regulations.

Operational Effects

- 6.129. The operational phase of the Proposed Development will result in a loss of land which has the potential for rough grazing to new Proposed Development infrastructure; however, grazing will still be able to carry on within the Proposed Development.

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- 6.130. From the total area within the Proposed Development of 595 ha it is anticipated that the overall landtake, as a result of the Proposed Development, will be 8.37 ha, equating to around 1.4% of the land within the Proposed Development.
- 6.131. This is of low magnitude. The land-take on a low sensitivity receptor is a long-term, negligible effect on land-use, which is considered to be not significant in terms of the EIA Regulations.
- 6.132. As stated throughout this Section, the effects of the operational phase of the Proposed Development will not have a significant effect on land-use receptors in accordance with the EIA Regulations.

Decommissioning

- 6.133. The operational lifespan of the Proposed Development and associated infrastructure will be up to 25 years. Following this, an application may be submitted to retain or replace the turbines, or they could be decommissioned. It is anticipated that there will be no additional land-use effects associated with the decommissioning of the Proposed Development.
- 6.134. Disruption to land-use during decommissioning will be similar to that during construction, with a temporary cessation of agricultural activities in the vicinity of the Proposed Development while activities to remove the turbines are undertaken. The magnitude of effect would therefore be negligible. Decommissioning will have an effect of short-term, negligible significance on land-use, which is a low sensitivity receptor, which is considered to be not significant in terms of the EIA Regulations.
- 6.135. It is expected that decommissioning will involve the reinstatement of the turbine foundations and associated hardstandings and demolition and removal of control building and compound. The land will be restored with topsoil. This will reduce the permanent land take for the Proposed Development. Prior to agreement of a comprehensive restoration plan setting out the specific methods of re-instatement, the worst-case scenario of permanent land take is 8.37 ha. Therefore, the worst-case scenario represents a permanent, negligible effect on the land-use, which is considered to be not significant in terms of the EIA Regulations.
- 6.136. The land-use is a low sensitivity receptor and the magnitude of effect is expected to be low.
- 6.137. As stated throughout this Section, the effects of the decommissioning phase of the Proposed Development will not have a significant effect on land-use receptors in accordance with the EIA Regulations.

Cumulative Assessment

- 6.138. As detailed in Sections 6.95 and 6.96, the Proposed Development will contribute £5,000 per MW installed capacity to the LCT. This will result in an

annual value of approximately £162,000 per year in addition to the £2,750 per MW installed capacity for the Operational Scheme.

- 6.139. This cumulative effect will represent a medium magnitude effect for the local community, a direct, positive, long-term effect acting at a local scale and therefore constituting a minor beneficial effect, although this is not significant in terms of the EIA Regulations. The Proposed Development will contribute to the minor beneficial effect.

Mitigation and Residual Effects

- 6.140. There are no significant socio-economic, tourism and recreation, and land-use effects predicted during the construction, operational or decommissioning phases of the Proposed Development. Therefore, no mitigation further than that considered as embedded within the design of the Proposed Development, is required.
- 6.141. No significant residual effects are predicted as a result of any phase of the Proposed Development.

Summary

- 6.142. The renewables industry is an important economic asset to the UK and Scotland, and supports a substantial and growing number of employment opportunities. Although not significant in terms of the EIA Regulations, the Proposed Development will further contribute to the positive economic effect of renewable energy, and associated skills base within the UK and Scotland. The contributions of the Proposed Development to the local community benefit fund will be a valuable contribution to the community of the local area however, not significant in terms of EIA Regulations.
- 6.143. No significant effects in terms of the EIA Regulations are predicted on socio-economics, tourism and recreation and land-use receptors during the construction, operation or decommissioning phases of the Proposed Development.
- 6.144. Capital Expenditure (CAPEX) is expected to be £42.77 million based on 32.4 MW.
- 6.145. Operational Expenditure (OPEX) is expected to be in the region of £1.9 million per annum.
- 6.146. There are a limited number of recreational opportunities within the immediate area, with more opportunities within the wider area. There will be no significant direct or indirect effects on tourism or recreation as a result of the Proposed Development both in isolation or cumulatively, although land within the Proposed Development will be inaccessible to the public during the construction and decommissioning phases for health and safety reasons.

These effects are considered to be not significant in terms of the EIA Regulations.

6.147. In summary, the effects on existing land-use within the Proposed Development area will not be significant in terms of the EIA Regulations.

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