

14 LAND USE, SOCIO-ECONOMICS AND TOURISM

14.1 INTRODUCTION

This Chapter of the Environmental Impact Assessment Report (EIA Report) evaluates the effects of the Ackron Wind Farm (the Development) on the land use, socio-economics, and tourism. This assessment was undertaken by Sophie Williams, EIA Consultant, of Arcus Consultancy Services Limited (Arcus) and has been reviewed by Heather Kwiatkowski, Principal EIA Consultant at Arcus, and Stuart Davidson, Registered EIA Practitioner and Operational Director of Arcus.

This Chapter includes the following elements:

- Legislation, Policy and Guidance;
- Assessment Methodology and Significance Criteria;
- Baseline Conditions;
- Assessment of Potential Effects;
- Mitigation and Residual Effects;
- Cumulative Effect Assessment;
- Summary of Effects;
- Statement of Significance; and
- Glossary.

This Chapter of the EIA Report is supported by the following figure in Volume 2a Figures excluding Landscape and Visual:

• Figure 14.1: Study Area and Core Paths

14.2 LEGISLATION, POLICY AND GUIDANCE

The following guidance, legislation and information sources have been considered in carrying out this assessment:

- The Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017¹ (the EIA Regulations);
- Scotland's Economic Strategy²;
- National Performance Framework³;
- Scottish Planning Policy⁴;
- National Planning Framework 3⁵;
- Highland-wide Local Development Plan⁶;
- Caithness and Sutherland Local Development Plan⁷

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¹ Scottish Government (2017) Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017 [Online] Available at: http://www.legislation.gov.uk/ssi/2017/102/contents/made (Accessed 12/11/2020)

² Scottish Government (2015) Scotland's Economic Strategy [Online] Available at: https://www.gov.scot/publications/scotlands-economic-strategy/pages/0/ (Accessed on 12/11/2020)

³ Scottish Government (2019) National Performance Framework [Online] Available at: https://nationalperformance.gov.scot/national-outcomes (Accessed 12/11//2020)

⁴ Scottish Government (2014) Scottish Planning Policy [Online] Available at:

https://www.gov.scot/publications/scottish-planning-policy/pages/2/ (Accessed 12/11//2020)

⁵ Scottish Government (2014) National Planning Framework 3 [Online] Available at: https://www.gov.scot/publications/national-planning-framework-3/ (Accessed 12/11/2020)

⁶ Highland Council (2012) Highland-wide Local Development Plan [Online] Available at: https://www.highland.gov.uk/info/178/local and statutory development plans/199/highland-wide local development plan (Accessed 12/11//2020)

⁷ Highland Council (2018) Caithness and Sutherland Local Development Plan [Online] Available at: https://www.highland.gov.uk/downloads/file/19712/casplan_adopted (Accessed 12/11//2020)



- Institute of Environmental Management and Assessment (IEMA) (2011) The State of Environmental Impact Assessment in the UK⁸;
- Scottish Natural Heritage (2018) Environmental Impact Assessment Handbook⁹; and
- Wind Farms and Tourism Trends in Scotland: BiGGAR Economics (2017)¹⁰.

14.2.1 Legislation

The EIA Regulations establish in broad terms what is to be considered when determining the effects of development proposals on land use, socio-economics, and tourism. There is no specific legislation available on the methods that should be used to assess the socio-economic impacts of a proposed onshore wind farm development.

14.2.2 National Policy

14.2.2.1 Land Use National Policy

On the 23rd June 2014, the Scottish Government published the new Scottish Planning Policy (SPP)¹¹. 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".

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 for 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."

14.2.22 Socio Economics National Policy

Scotland's Economic Strategy¹² sets out how the Scottish Government will provide support for businesses and individuals to grow in an economically sustainable way with the dual objectives of boosting competitiveness and tackling inequality. As part of these objectives, 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.

The document identifies four strategic priorities which are critical to economic growth:

⁸ IEMA (2011) The State of Environmental Impact Assessment Practice in the UK [Online] Available at: https://transform.iema.net/article/state-eia-practice-uk (Accessed 12/11//2020)

⁹ SNH (2018) Environmental Impact Assessment Handbook [Online] Available at: https://www.nature.scot/handbook-environmental-impact-assessment-guidance-competent-authorities-consultees-and-others (Accessed 12/11//2020)

¹⁰ BiGGAR Economics (2017) Wind Farm and Tourism Trends in Scotland [Online] Available at: https://biggareconomics.co.uk/wp-content/uploads/2020/01/Wind-farms-and-tourism-trends-in-Scotland.pdf (Accessed 12/11//2020)

¹¹ Scottish Government (2014) Scottish Planning Policy [Online] Available at: https://www.gov.scot/publications/scottish-planning-policy/pages/2/ (Accessed 12/11/2020)

¹² Scottish Government (2015) Scotland's Economic Strategy [Online] Available at: https://www.gov.scot/publications/scotlands-economic-strategy/pages/0/ (Accessed on 12/11//2020)



- Investing in our people, infrastructure and assets in a sustainable way;
- Fostering a culture of innovation;
- Promoting inclusive growth; and
- Internationalisation.

The National Performance Framework¹³ tracks progress towards national outcomes. It shows how well Scotland is performing overall on the 81 national indicators including topics on economy and environment. In terms of economy, the Scottish Government recognises that a strong, competitive economy is essential to supporting jobs, incomes and our quality of life. The Scottish economy must be environmentally sustainable, inclusive and benefit all our people and communities.

Paragraphs 29 and 169 of the SPP discuss that decisions for proposals for energy infrastructure should be guided by giving due weight to net economic benefit (paragraph 29) and that key considerations are likely to include:

"net economic impact, including local and community socio-economic benefits such as employment, associated business and supply chain opportunities".

The National Planning Framework (NPF3)¹⁴ sets out a long-term strategy for Scotland's important development and investment opportunities in infrastructure. Combined with the SPP, the NPF3 aims to help deliver a sustainable, economic future for Scotland's communities. NFP3 states that in order to help make Scotland a low carbon place, the spatial strategy suggests:

"...to retain the benefits of renewable energy development in Scotland by supporting investment at key sites across the country."

NPF3 also indicates that the future of the renewables sector in Scotland will be key to bringing new employment to Scotland's remote areas and that rural communities will benefit from well-planned renewable energy development.

14.2.3 Local Planning Policy

The Highland-wide Local Development Plan (the HwLDP) 15 was adopted by the Highland Council (the Council) in April 2012; the LDP is supplemented by Area Local Development Plans. The Council adopted the Caithness and Sutherland Local Development Plan (the CaSPlan)¹⁶ in August 2018. The HwLDP and CaSPlan provides a planning framework for the future use and development of land within the Caithness and Sutherland region, creating a context to guide the location of development over the next five years, from the adopted date, along with setting out development opportunities and ways to enhance the rural and urban environment.

Planning policy is set out in **Chapter 2: Energy and Planning Policy** of the EIA Report and addressed in full in the Planning Statement which accompanies the EIA Report.

14.2.4 Guidance

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

¹³ Scottish Government (2019) National Performance Framework [Online] Available at: https://nationalperformance.gov.scot/national-outcomes (Accessed 12/11//2020)

¹⁴ Scottish Government (2014) National Planning Framework 3 [Online] Available at: https://www.gov.scot/publications/national-planning-framework-3/ (Accessed 12/11//2020)

¹⁵ Highland Council (2012) Highland-wide Local Development Plan [Online] Available at: https://www.highland.gov.uk/info/178/local and statutory development plans/199/highlandwide local development plan (Accessed 12/11//2020)

¹⁶ Highland Council (2018) Caithness and Sutherland Local Development Plan [Online] Available at: https://www.highland.gov.uk/downloads/file/19712/casplan_adopted (Accessed 12/11//2020)



- Institute of Environmental Management and Assessment (IEMA) (2011) The State of Environmental Impact Assessment in the UK¹⁷;
- Scottish Natural Heritage (SNH¹⁸) (2014) A Handbook on Environmental Impact Assessment¹⁹; and
- Wind Farms and Tourism Trends in Scotland: BiGGAR Economics (2017)²⁰.

14.3 ASSESSMENT METHODOLOGY AND SIGNIFICANCE CRITERIA

14.3.1 Scoping Responses and Consultations

Throughout the scoping process, and subsequently during the ongoing EIA process, relevant organisations were contacted with regards to the Development. Table 14.1 outlines the consultation responses received in relation to land use, socio-economics, and tourism.

Table 14.1: Scoping and Consultation Response

Consultee	Type and Date	Summary of Consultation Response	Response to Consultee
The Highland Council	Scoping Response 6 th June 1029 Updated Scoping Response 11 th December 2019	The ES should recognise the existing land uses affected by the development having particular regard for The Highland Council's Development Plan and other supplementary planning policies. The application should include relevant economic information connected with the project, including the potential number of jobs, and economic activity associated with the procurement, construction, operation and decommissioning of the development.	Information on all land use is addressed in Section 14.4.1, 14.5.1 and 14.6.1 of this Chapter.
	Scoping Response 6 th June 1029 Updated Scoping Response 11 th December 2019	The ES should estimate who may be affected by the development including individual households, local communities or a wider socio-economic grouping such as tourists & tourist related businesses, recreational groups, economically active, etc.	Information on all relevant economic information is addressed in Section 14.5.2 of this Chapter.

¹⁷ IEMA (2011) The State of Environmental Impact Assessment Practice in the UK [Online] Available at: https://www.iema.net/assets/uploads/Special%20Reports/iema20special20report20web.pdf (Accessed 12/11//2020)

¹⁸ Scottish Natural Heritage (SNH) rebranded in August 2020 as NatureScot. Where relevant reference is still made to SNH within this chapter in respect of guidance which remains valid and is yet to be republished etc. ¹⁹ SNH (2018) Environmental Impact Assessment Handbook [Online] Available at:

https://www.nature.scot/handbook-environmental-impact-assessment-guidance-competent-authorities-consultees-and-others (Accessed 12/11//2020)

²⁰ BiGGAR Economics (2017) Wind Farm and Tourism Trends in Scotland [Online] Available at: https://biggareconomics.co.uk/wp-content/uploads/2020/01/Wind-farms-and-tourism-trends-in-Scotland.pdf (Accessed 12/11/2020)



Consultee	Type and Date	Summary of Consultation Response	Response to Consultee
		Original Scoping Response stated that a statement on local content required under The Highland Renewable Energy Strategy and Planning Guidelines (HRES). This was not requested in the Updated Scoping Response.	

14.3.2 Scope of Assessment

This Chapter considers:

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

The key issues for the assessment of potential effects relating to the 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.

14.3.2.1 Land Use

Land-use is the anthropogenic management and occupation of the environment, and what the land is used for, both at present and in the future. Developments can affect the ability of the land to be effectively used for its current purpose and also affect the potential use in the future. This can result from direct loss of land to new infrastructure, which is therefore no longer available for the current land-use; disruption to existing land-use operations can occur as a result of construction and operational activities of a new development (e.g. access restrictions). In this case, the land in which the Development is proposed (the Site) consists predominantly of open moorland used for rough grazing; however, there is a small area of improved pasture in the north-west, semi-improved grassland/quarry in the south and west, respectively, and pockets of woodland grant of various success.

14.3.2.2 Socio Economics

The principal socio-economic assessment criteria relate to the employment effects within the Study Area. These effects are defined in terms of jobs and the Gross Value Added (GVA) generated by those jobs.

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 (for example, potential visual impacts are addressed in **Chapter 6: Landscape and Visual**).

14.3.2.3 Tourism

When assessing tourism and recreation, this Chapter deals primarily with tourism and recreational facilities and 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). Amenity is inextricably linked with recreational behaviour and tourism. Where



outdoor recreational and tourism facilities are not designated for their visual setting or outlook, the visual impact on these receptors is assessed in **Chapter 6: Landscape and Visual** of the EIA Report. This Chapter solely focuses on the designated use of the tourism and recreational receptors.

14.3.3 Study Area / Survey Area

The study areas in this assessment are receptor specific, as follows:

- Land-use: The 'Study Area' comprises the land taken by the Development, either temporarily during construction and decommissioning or permanent after operation and decommissioning;
- Socio-economics: the 'Study Areas' are defined as at local, regional, and national scale as follows:
 - Local' is defined as Caithness & Sutherland, comprising of the electoral wards of North, West and Central Sutherland, & Thurso and Northwest Caithness. Where figures are not available for North, West and Central Sutherland, & Thurso and Northwest Caithness, the assessment has presented figures from the Highland Council-wide statistics.
 - Regional' is defined as Highland; the geographical size of the Highland area means that the Development will not affect the entire area. As national statistics apply to Highland as a single area, it will be referred to as a whole for a number of assessments.
 - 'National' is defined as Scotland; and
- Tourism and Recreation: The 'Study Area' comprises of land within the Site and immediately adjacent in considering direct effects, and within 5 km of the Site centre (i.e. centred at approximate National Grid Reference (NGR) 291200, 962150 in considering indirect effects.

14.3.4 Baseline Survey Methodology

The following sources of information have been used to inform the baseline description set out in this Chapter:

- The Highland Council (www.highland.gov.uk);
- Heritage Paths (<u>www.heritagepaths.co.uk</u>);
- Land Capability for Agriculture, Macaulay Institute (http://www.macaulay.ac.auk/explorescotland);
- National Statistics Online (<u>www.statistics.gov.uk</u>);
- National Records of Scotland (<u>www.nrscotland.gov.uk/statistics-and-data</u>);
- NOMIS Official Labour Market Statistics (<u>www.nomisweb.co.uk</u>);
- Scottish Tourist Board (<u>www.visitscotland.com</u>);
- Scotways website (www.scotways.com) and
- Sustrans website (www.sustrans.co.uk).

Baseline conditions have been established through desktop studies and consultation including response to the Scoping Report and Updated Scoping Report (June 2019 and December 2019).

14.3.5 Methodology for the Assessment of Effects

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

The assessment aims to predict the likely effects (both beneficial and adverse) arising from the Development; social and economic effects are divided into:



- Direct effects: opportunities that can be created as an immediate effect of the Development;
- Indirect effects: opportunities that will be created by the Development further down the supply chain, for example, companies providing services to the Development;
- 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; and
- Cumulative Effects: where the combined effect of two or more developments are of greater significance than those of the Development itself.

The significance of the potential effects of the Development has been classified by professional consideration of the sensitivity of the receptor and the magnitude of the potential effect.

14.3.5.1 Sensitivity of Receptors

The sensitivity of the baseline conditions, including the importance of environmental features on or near to the Site or the sensitivity of potentially affected receptors, will be assessed in line with best practice guidance, legislation, statutory designations and professional judgement.

The initial consideration of sensitivity of a receptor/asset to an effect reflects the level of importance assigned to it. This allows the identification of key socio-economic, tourism, recreational and land-use assets.

Table 14.2 details the framework for determining the sensitivity of receptors.

Table 14.2: Framework for Determining Sensitivity of Receptors

Sensitivity of Receptor	Definition Personal P
Very High	The asset has little or no capacity to absorb change without fundamentally altering its present character and/or is of very high tourism, recreational or socio-economic value, or of national importance. For example, it is a destination in its own right (for attractions), with a substantial proportion of visitors on a national level.
High	The asset has low capacity to absorb change without fundamentally altering its present character and/or is of high tourism, recreational or socio-economic value, or of importance to Scotland.
Medium	The asset has moderate capacity to absorb change without substantially altering its present character, has some tourism, recreational or socio-economic value and/or is of regional importance (e.g. Highland). For example, it is a popular destination among current visitors (for attractions), with a significant contribution to the regional economy.
Low	The asset is tolerant to change without detriment to its character, has low tourism, recreational and/or socio-economic value, or is of local importance (e.g. Caithness & Sutherland). For example, it is an incidental destination for current visitors (for attractions).
Negligible	The asset is resistant to change and/or is of little tourism, recreational or socio-economic value. For example, an incidental destination with low numbers of current visitors (for attractions).

14.3.5.2 Magnitude of Effect

The magnitude of potential effects will be identified through consideration of the Development, the degree of change to baseline conditions predicted as a result of the Development, the duration and reversibility of an effect and professional judgement, best practice guidance and legislation.



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 an effect are presented in Table 14.3.

Table 14.3: Framework for Determining Magnitude of Effects

Magnitude of Effects	Definition
Large	Total loss or major alteration (beneficial or adverse) of the tourism, recreational or socio-economic assets/receptors.
Medium	Loss of, or alteration to (beneficial or adverse), one of more key elements of the tourism, recreational or socio-economic asset's baseline value.
Low	Slight alteration (beneficial or adverse) of the tourism, recreational or socio-economic asset/receptors.
Negligible	Barely perceptible alteration (beneficial or adverse) of the tourism, recreational or socio-economic asset/receptors.

14.3.5.3 Significance of Effect

The sensitivity of the asset and the magnitude of the predicted effects will be used as a guide, in addition to professional judgement, to predict the significance of the likely effects. Table 14.4 summarises guideline criteria for assessing the significance of effects.

Table 14.4: Framework for Assessment of the Significance of Effects

Magnitude of Effect	Sensitivity of Resource or Receptor				
Ellect	Very High	High	Medium	Low	Negligible
High	Major	Major	Moderate	Moderate	Minor
Medium	Major	Moderate	Moderate	Minor	Negligible
Low	Moderate	Moderate	Minor	Negligible	Negligible
Negligible	Minor	Minor	Negligible	Negligible	Negligible

Effects predicted to be of major or moderate significance are considered to be 'significant' in the context of the EIA Regulations, and are shaded in light grey in the above table.

Effects can be beneficial or adverse and these are specified where applicable in the assessment within this Chapter.

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.

In terms of land-use factors, potential effects would be considered significant if the Development resulted in long-term modification or net loss of an important land-use receptor.

In terms of socio-economic factors, potential effects would be significant if the Development resulted in any fundamental or material changes in population, structure of community, and economic activity during the operational phase of the Proposed Development.

For tourism and recreation factors, potential effects would be significant if the Development resulted in any fundamental or material changes in key elements/features



of the receptor or if effects resulted in major, long-term alterations of the baseline conditions of the attraction, accommodation, recreation route etc.

14.3.6 Assessment Limitations

Data has been collated from published sources; no surveys specific to the Development and in support of this assessment have been carried out.

Baseline figures have been taken from the latest available information prior to the current COVID-19 situation / economic crisis. As such, projections are based on the economic climate prior to COVID-19.

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 small number of attractions that will not have been identified through the data collection process.

BASELINE CONDITIONS 14.4

The land within the Site which contains the turbines and associated infrastructure covers an area of approximately 662 hectares (ha), centre at approximately NGR 291200, 962150.

14.4.1 Land-use

The Site predominantly comprises of open moorland used for rough grazing; however, there are small areas of improved pasture, semi-improved grassland/quarry, and pockets of woodland grant of varying success. There is a small area of improved pasture in the north-west and a woodland grant scheme (WGS3²¹), comprising 13 ha along the lower elevations in the west of the Site which extends out with the Site Boundary on its northeast edge between the Site and the A897. RDC-Woodland planted in 2013 covers portions of the Site; however, this appears only marginally successful. The Site has an elevation ranging from approximately 40 m Above Ordnance Datum (AOD) in the west, rising to 161 m AOD in the east.

No public rights of way are located within the Site; although there are two stretches of existing farm access track. The Site will be accessed via the A836 and a new junction from the A897 as shown on Figure 11.2.

There are two residential properties within approximately 1 km of the turbine infrastructure; both of which are financially involved. The closest residential properties are:

- Ackron Farm (915 m west of the nearest turbine); and
- Golval Farm (1 km west of nearest turbine).

There are several scattered farm buildings, and one sheepfold, located within the Site along the western Site Boundary; associated with those properties within 1 km of turbine infrastructure identified above.

As the land is privately owned, any direct effects on the landowner are subject to a commercial arrangement between the Applicant and the landowner, and therefore not subject to EIA.

²¹ Scottish Government (2020) Woodland Grant Scheme 3 [Online] Available at: https://data.gov.uk/dataset/1a0f08ac-e8ba-4de5-b934-cc27e6eed0c7/woodland-grant-scheme-3#:~:text=The%20Woodland%20Grant%20Scheme%20(WGS,looking%20after%20woodlands%20and%20fores ts.&text=It%20was%20then%20replaced%20by,Forestry%20Grant%20Scheme%20(SFGS). (Accessed 07/08/2020)



14.4.2 Socio-Economics

14.4.2.1 Population

Highland is a mainly rural region in the north of Scotland covering an area of around 26,484 km² ²² and has an estimated population of 235,830 (as at June 2019)²³. The main settlements include Inverness (approximately 63,780), Fort William (approximately 10,175) and Nairn (approximately 10,022) with all other settlements having populations less than 8,000. The area is divided into eight city and local committees, which are recognised by the Council.

The Site is located within the Sutherland County Committee Area.

The electoral ward of North, West and Central Sutherland, where the Site is located, has a population of 5,597²⁴; the electoral ward of Thurso and Northwest Caithness borders the Site and has a population of 12,185²⁵. The wider area of Caithness and Sutherland has a total population of 39,732²⁶ according to the latest census in 2011.

In 2018, 22% of the Highland population was over 65 years, which is higher than the Scottish average of 19%²⁷. National Records of Scotland projections²⁸ signal that in Scotland the gap between older and younger populations is expected to expand further over time.

The pensionable age (over 65) population is set to continue to increase over the next 30 years; however, with the pensionable age set to rise to 67 in 2028, the number of people over the pensionable age may decrease; the change in the pensionable age is not accounted for within this assessment. In Sutherland the percentage change in the number of retired people aged 65 and over is forecast to be 40% between 2010 and 2035²⁹. The Highland dependency ratio (the number of working age people divided by the number of children and retired people) in 2010 was 1.74; however, this is expected to fall to 1.18 in 2035³⁰ with the potential to result in labour shortages.

²² Highland Council (2019) Highland Profile – Key Facts and Figures [Online] Available at: https://www.highland.gov.uk/info/695/council information performance and statistics/165/highland profile - key facts and figures (Accessed 12/11/2020)

²³ National Records of Scotland (2019) Highland Council Area Profile [Online] Available at: https://www.nrscotland.gov.uk/files/statistics/council-area-data-sheets/highland-council-profile.html (Accessed 12/11/2020)

²⁴ Scottish Government (2020) Electoral Ward North, West and central Sutherland [Online] Available at: https://statistics.gov.scot/atlas/resource?uri=http%3A%2F%2Fstatistics.gov.scot%2Fid%2Fstatistical-geography%2FS13002990&collection-

<u>uri=http%3A%2F%2Fstatistics.gov.scot%2Fdef%2Ffoi%2Fcollection%2Fwards</u> (Accessed 12/11/2020)

²⁵ Scottish Government (2020) Electoral Ward Thurso and Northwest Caithness [Online] Available at: https://statistics.gov.scot/atlas/resource?uri=http%3A%2F%2Fstatistics.gov.scot%2Fid%2Fstatistical-geography%2FS13002991&collection-

uri=http%3A%2F%2Fstatistics.gov.scot%2Fdef%2Ffoi%2Fcollection%2Fwards (Accessed 12/112020)

Highlands and Islands Enterprise (2014) Caithness and Sutherland Area Profile [Online] Available at:
 https://www.hie.co.uk/media/3187/caithnessplusandplussutherlandplusprofileplus14.pdf (Accessed 20/05/2020)
 National Records for Scotland (2019) Mid-Year Population Estimates Scotland, Mid-2018 [Online] Available at:

https://www.nrscotland.gov.uk/files//statistics/population-estimates/mid-18/mid-year-pop-est-18-pub.pdf (Accessed 12/11/2020)

²⁸ National Records of Scotland (2018) Population Projections for Scottish Areas (2016-based) [Online] Available at: https://www.nrscotland.gov.uk/files//statistics/population-projections/sub-national-pp-16/pop-proj-principal-2016-tab-publication.pdf (Accessed 12/11/2020)

²⁹ Highland Council (2012) Population Projections for Council Areas 2010-2035 [Online] Available at: http://www.highland.gov.uk/download/downloads/id/11051/council area population projections 2010 (Accessed 12/11/2020)

³⁰ Highland Council (2012) Population Projections for Council Areas 2010-2035 [Online] Available at: http://www.highland.gov.uk/download/downloads/id/11051/council area population projections 2010 (Accessed 12/11/2020)



Outward migration of under-24's in Highland is a common occurrence for the area; by 2026, the 16-24 population is expected to decrease by 7.1%³¹ from the 2016 figure. The 16-24 age group is an important sector of the population for future economic stability and growth and continued outward migration of young people from the Highland region presents a risk to future economic development for the region.

14.4.2.2 Employment

Highland has a higher employment percentage compared to Scottish averages. The employment rate (16-64-year olds) in 2018 was 81.2% compared to the national average of 74.3%³². The principle employment sectors within Highland are:

- Distribution;
- Hotels and restaurants;
- Manufacturing;
- Construction;
- Transport and communications; and
- Agriculture and fishing.

The construction sector is expected to see the biggest increase in employment, with 1,500 more jobs expected in the sector by 2029 compared to 2019. Other sectors expecting increases are the administrative and support services sector (1,200 jobs), and professional, scientific and technical activities (1,100 jobs)³³.

One of the aims of the Caithness and Sutherland Local Development Plan (CaSPlan)³⁴ is to ensure that development helps to maintain and grow a strong and diverse Caithness and Sutherland economy. This is fundamental to continuing to create long-term employment opportunities and attract inward investment.

The decommissioning of Dounreay nuclear reactor (approximately 7 km north-east of the Site) has been seen as the main reason for a decline in overall job numbers within Caithness and Sutherland over recent years. However, the CaSPlan details that there are signs that efforts to diversify the economy are working as the percentage of jobs dependent upon Dounreay decreased from 15% to 10% between 2006 and 2011, and the number of new businesses being created is on the rise.

Additionally, the establishment of the North Coast 500 tourist attraction route has contributed to - and is expected to continue to contribute to - employment within Highland; in 2018, 180 jobs were created as a result of the route³⁵.

14.4.2.3 Renewables and Economic Development

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 on the $31^{\rm st}$ January 2018 show turnover from renewable energy activity in Scotland was £5,458 million in 2016, with individual sectors showing employment

³¹ National Records of Scotland (2019) Highland Council Area Profile [Online] Available at: https://www.nrscotland.gov.uk/files/statistics/council-area-data-sheets/highland-council-profile.html#population_projections (Accessed 12/11/2020)

³² Scottish Government (2019) Regional employment patterns in Scotland: statistics from the Annual Population Survey 2018 [Online] Available at: https://www.gov.scot/publications/regional-employment-patterns-scotland-statistics-annual-population-survey-2018/pages/3/ (Accessed 12/112020)

³³ Skills Development Scotland (2019) Regional Skills Assessment Highlands and Islands Summary Report [Online] Available at: https://www.skillsdevelopmentscotland.co.uk/media/46133/highlands-and-islands-rsa-summary-report.pdf (Accessed 12/11/2020)

³⁴ The Highland Council (2018) Caithness and Sutherland Local Development Plan [Online] Available at: https://www.highland.gov.uk/downloads/file/19712/casplan_adopted (Accessed 12/112020)

³⁵ BBC News (2019) North Coast 500 'boosted Highland economy by £22m' [Online] Available at: https://www.bbc.co.uk/news/uk-scotland-highlands-islands-49933065 (Accessed 12/11/2020)



increases of up to 300% between 2015 and 2016³⁶. 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 and achieving 'world leader' status for renewables in 2017³⁷.

The International Energy Agency (IEA) released statistics following analysis of daily data through mid-April 2020 during the COVID-19 pandemic (published in their Global Energy Review 2020) showing that countries in full lockdown, including the UK, experienced an average 25% decline in energy demand per week³⁸. Due to COVID-19, the requirements for electricity security and resilient energy systems are heightened, with the need for clean energy transitions to be at the centre of development for economic recovery. The IEA also comment that the outbreak of COVID-19, the economy would see a collapse in demand for fossil fuels, meaning electricity will play the biggest role in the global energy system in 2020, erasing a decade's growth of global carbon emissions³⁹.

Investment in renewable energy generation in North Highland is not only helping to meet Council and national climate change targets but it has also delivered economic benefits for the area. Onshore wind energy has grown significantly over recent years, particularly in the south and north-east of Caithness and Sutherland⁴⁰.

14.4.3 Tourism

14.4.3.1 Tourism Receptors

Tourism is a key element in the socio-economic, environmental and cultural welfare of Scotland. In 2018, around 15.5 million overnight trips were taken in Scotland (a 3% increase from 2017), for which visitor expenditure totalled around £5.1 billion⁴¹. With regard to Highland, the tourism sector is valued as it forms a critical part of the economy. The Council stated that the tourism sector is considered as an increasingly important component of the economy and the CaSPlan supports suitable tourism opportunities throughout Caithness and Sutherland including in more rural and remote locations.

The Site is located within a relatively remote setting with recreation opportunity based around the natural environment such as hills, wildlife, lochs and rivers, with few formally recognised tourist attractions within the Study Area (5 km). The formally recognised tourist attractions and activities within the Study Area include:

- North Coast 500 (NC500), located adjacent to the north-west boundary of the Site;
- Melvich Beach, located approximately 1.6 km north-west of the Site;
- Farm Buggy Tours, located approximately 1.8 km north-west of the Site;
- Dounreay Viewpoint, located approximately 2.4 km north-west of the Site;
- Sandside Bay, located approximately 4.2 km north-east of the Site; and

³⁶ Scottish Renewables (2018) Scots renewable energy industry turnover £5.5 billion, new UK Government stats show [Online] Available at: http://www.scottishrenewables.com/news/scots-renewable-energy-industry-turnover/ (Accessed 20/2020)

37 WWF (2017) Scotland a 'World Leader' for renewables in 2017 [Online]

https://www.wwf.org.uk/updates/scotland-world-leader-renewables-2017 (Accessed 12/11/2020)

³⁸ The International Energy Agency (2019) COVID-19 [Online] Available at: https://www.iea.org/topics/covid-19 (Accessed 20/05/2020)

³⁹ The Guardian (2020) Covid-19 crisis will wipe out demand for fossil fuels, says IEA [Online] Available at: https://www.theguardian.com/business/2020/apr/30/covid-19-crisis-demand-fossil-fuels-iea-renewable-electricity (Accessed 12/11//2020)

⁴⁰ The Highland Council (2018) Caithness and Sutherland Local Development Plan [Online] Available at: https://www.highland.gov.uk/downloads/file/19712/casplan_adopted (Accessed 12/11//2020)

⁴¹ VisitScotland (2019) Key Facts on Tourism in Scotland 2018 [Online] Available at:

https://www.visitscotland.org/binaries/content/assets/dot-org/pdf/research-papers-2/key-facts-on-tourism-inscotland-2018-v2.pdf (Accessed 12/11//2020)



Reay Golf Club, located approximately 4.4 km north-east of the Site.

At the north-west corner of the Site, the NC500 is located directly adjacent to the Site. The NC500 is described as a world-renowned Scottish tourist attraction consisting of approximately 500 miles of scenic route around the north coast of Scotland, starting and finishing in Inverness. The route established as an advertised tourist attraction in 2015 and has helped to improve visitor numbers by attracting 29,000 more visitors to the north Highlands within its first year of operation (2015-2016)⁴². Between 2015 and 2016, four Visit Scotland i-centres (Durness, Lochinver, Thurso, and Ullapool) experienced an average 26% increase in use, compared to a 6% average increase across other Highlands i-centres. As visitor numbers suggest, the NC500 is increasingly important to the Highland economy. In 2018, the NC500 generated an additional £13.46 m in sales for approximately 1,900 businesses located on, or near, the route⁴³. The accommodation sector is an example of a sector which has benefitted from the establishment of the NC500, as room occupancy has increased from 52% in 2014 to 78% in 2018⁴⁴.

The NC500 incorporates the A836 which runs along the north coast of Sutherland. At the closest point, the Site is adjacent to the north of the NC500.

There are tourist attractions and activities outwith 5 km from the Site which include:

- Cnoc-na-h'Useig Chambered Cairns (444), located approximately 9 km north-east of the Site;
- Loch Calder (Loch Calder Fishing Association), located approximately 14 km east of the Site;
- Forisnard Flows RSPB Visitor Centre, located 18.2 km south of the Site;
- Farr Stone, located 18.4 km west of the Site;
- Strathnaver Museum, located 18.5 km west of the Site; and
- Holburn Head Lighthouse, located 19.5 km north-east of the Site.

There are nearby settlements which offer a range of accommodation; the nearest settlement offering accommodation is Melvich approximately 1.6 km to the west of the Site. Melvich has several accommodation options including The Sheiling B&B, located approximately 1.9 km to the north-west of the Site; and Melvich Hotel, located approximately 2.7 km to the north-west of the Site.

The settlement of Reay, located 4.3 km east from the Site offers accommodation within The Annex at Borlum which is located 4.5 km north-east of the Site; and Strathy, located 6.2 km west of the Site, offers accommodation at Salmon Landings, located 8.1 km north-west of the Site. Additionally, Armadale, situated 11.3 km west of the Site, also provides accommodation at Armadale House B&B, located 11 km west of the Site.

There are eleven Core Paths within the Study Area; however, there are none within the Site, as shown in Figure 14.1. The nearest Core Path is Kirkton – Upper Bighouse (SU19.03), approximately 506 m south-west of the Site. A list of Core Paths within the Study Area is provided in Table 14.5 below, and are shown on Figure 14.1.

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⁴² Highlands and Islands Enterprise (2017) North Coast 500 Economic Baseline Study [Online] Available at: https://www.hie.co.uk/research-and-reports/our-reports/2017/june/19/nc500-economic-baseline-study/ (Accessed 12/11//2020)

⁴³ Moffat Centre (2019) Evaluation of Economic and Tourism Impact of the North Coast 500 [Electronic Copy] Available on request.

⁴⁴ Moffat Centre (2019) Evaluation of Economic and Tourism Impact of the North Coast 500 [Electronic Copy] Available on request.



Table 14.5: Identified Public Rights of Way

Table 1413. Identified Fabric Rights of Way					
Type of Route	Status of Route	Route Name	Route Reference	Approximate Distance to the Site	
Highlands Core Path	Local	Kirkton – Upper Bighouse	SU19.03	0.5 km (SW)	
Highlands Core Path	Local	Melvich Beach	SU19.05	1.2 km (NW)	
Highlands Core Path	Local	Portskerra Coast Walk	SU19.01	2.8 km (NW)	
Highlands Core Path	Local	Bayview Terrace – Low Road	SU19.08	3 km (NW)	
Highlands Core Path	Local	Achins/Helshetter	CA11.05	3.3 km (NE)	
Highlands Core Path	Local	Limekiln circuit	CA11.09	3.6 km (NE)	
Highlands Core Path	Local	Reay Roadside Link	CA11.06	3.7 km (NE)	
Highlands Core Path	Local	Sandside Head	CA11.04	4.1 km (NE)	
Highlands Core Path	Local	Reay Golf Course via Clubhouse	CA11.08	4.2 km (NE)	
Highlands Core Path	Local	Borlum Rock	CA11.03	4.2 km (NE)	
Highlands Core Path	Local	Reay Golf Course via Mary's Cottage	CA11.07	5.7 km (NE)	

There are no further formally recognised public rights of way in the Study Area; however, it is acknowledged that public access may not be limited to such formally recognised routes, particularly under consideration of the Land Reform Act (Scotland) 2003⁴⁵.

14.4.3.2 Public Attitudes towards Wind Farm Development

The potential for impact on tourism is closely linked to public perception of those visiting the area. This section provides an overview of studies undertaken to assess public perception of wind farm development across the UK.

In 2011, as part of their policy update, VisitScotland commissioned research to learn more about UK consumer attitudes to wind farms. The survey was largely attitudinal based and according to the results, wind farms do not have any significant impacts on the levels of tourism with evidence such as Whitelee Wind Farm Visitor Centre which attracted over 120,000 visitors in the first 12 months of opening in 2009. This could be interpreted as onshore wind increasing tourism and recreational amenities however, it is acknowledged this is a site-specific case.

Based on this research, VisitScotland published a Position Statement⁴⁶ in 2014 which stated:

⁴⁵ Scottish Government (2003) Land Reform (Scotland) Act 2003 [Online] Available at: https://www.legislation.gov.uk/asp/2003/2/contents (Accessed 12/11//2020)

⁴⁶ VisitScotland (2014) VisitScotland Position Statement – Wind Farm [Online] Available at: https://www.visitscotland.org/binaries/content/assets/dot-org/pdf/policies/visitscotland-position-statement---wind-farms---oct-2014.pdf (Accessed 12/11/2020)



"VisitScotland understands and supports the drive for renewable energy and recognises the economic potential of Scotland's vast resource, including the opportunities for wind farm development... There is a mutually supportive relationship between renewable energy developments and sustainable tourism."

A Department of Energy and Climate Change (DECC)⁴⁷ 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. The most recent DECC survey in 2016 detailed that support for renewable energy has been consistently high during the tracker at around 80%48.

In November 2020, the Public Attitudes Tracker⁴⁹, published by the Department for Business, Energy and Industrial Strategy (BEIS) shows a record 80% of people support the development of renewable energy resources, with over seven in ten (73%) of people supporting onshore wind which is a slight increase from 69% in the May 2020 tracker⁵⁰. The advance in onshore wind development in Scotland has also been accompanied by an interest in understanding how the impacts of wind farm developments affect local house prices. In recent years, there has been considerable research looking at measurable effects on whether or not properties near, or in sight of, new wind farm developments see price changes that differ from other houses. A topical study conducted by RenewableUK and the Centre for Economics and Business Research concluded that no adverse impacts were found on house prices from a range of wind farm cases across England and Wales and that there was, in fact, a slight beneficial influence on house prices from the cases analysed⁵¹.

Shortly after that study was published, an analysis conducted by Gibbons identified that larger wind farms may reduce the values of properties by up to 12% within a 2 km radius and reduce property prices as far as 14 km away⁵². Subsequently, ClimateXChange did a parallel study based on Scottish property and following Gibbons' approach, but with an increased resolution and precision of the data⁵³. This study, undertaken in 2016, concludes that there is no consistent evidence of adverse impacts of wind developments on house price growth and that research sample sizes tend to be too low to be statistically viable and conclude robust results.

⁴⁷ Department of Energy and Climate Change (DECC) (2014) Public Attitudes Tracker Survey - Wave 9, 29th April 2014 [Online] Available at:

https://www.gov.uk/government/uploads/system/uploads/attachment data/file/306898/summary of key finding s wave 9.pdf (Accessed 12/11//2020)

48 DECC (2016) Public Attitudes Tracker Survey - Wave 18, July 2016 [Online] Available at:

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/602456/Sum mary of key findings BEIS Public Attitudes Tracker - wave 18.pdf (Accessed 12/11/2020)

⁴⁹ Department for Business, Energy and Industrial Strategy (2020) BEIS Public Attitudes Survey – Wave 35 [Online] Available at:

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/934647/BEIS PAT W35 -

Key_findings.pdfhttps://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/ file/884028/BEIS PAT W33 - Key findings Final .pdf (Accessed 12/11/2020)
50 Department for Business, Energy and Industrial Strategy (2020) BEIS Public Attitudes Survey – Wave 33

[[]Online] Available at:

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/884028/BEIS PAT W33 - Key findings Final .pdf (Accessed 12/11/2020)

⁵¹ RenewableUK (2014) The Effect of Wind Farms on House Prices [Online] Available at: https://www.renewableuk.com/news/304411/RenewableUK--Cebr-Study---The-effect-of-wind-farms-on-houseprices.htm (Accessed 21/02/2020)

⁵² Stephen Gibbons (2015) Gone with the Wind: Valuing the Visual Impacts of Wind Turbines through House Prices. Journal of Environmental Economics and Management 72, doi: 10.1016/j.jeem.2015.04.006.

⁵³ Heblich *et al.*, (2016) Impact of wind turbines on house prices in Scotland [Online] Available at: https://www.climatexchange.org.uk/media/1359/cxc wind farms impact on house prices final 17 oct 2016.pd f (Accessed 12/11/2020)



14.5 ASSESSMENT OF POTENTIAL EFFECTS

14.5.1 Effects on Land-use

The Site covers an area of approximately 662 ha.

Part of the access tracks required for the Development will utilise existing access tracks. The total new land take of the Development, consisting of the wind turbine foundations, crane hardstandings, new and upgraded access tracks, substation and control building and meteorological mast equates to 16 ha; following construction and restoration, the footprint of the Development on the surface of the ground will be 8 ha. This equates to approximately 1.2% of the total land in the Site. The Development will also require the felling of approximately 1.1 ha of woodland land grant to accommodate the laydown area for T2. This would be replanted onsite or compensated via habitat restoration and will be agreed with Scottish Forestry.

14.5.1.1 Construction Effects

The Development is predominantly located within an area of open moorland currently used for rough grazing. Ongoing agricultural activities within the Site, and the surrounding area, such as the grazing of livestock may be temporarily affected during the construction phase of the Development. The Applicant will work with the farmer to ensure that they are able, wherever possible, to continue to agricultural activities safely during construction of the Development.

The land-use is considered to be a low sensitivity receptor as there is no formal public access. As construction effects will be limited and temporary in nature, the magnitude of effects is considered low.

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

14.5.1.2 Operational Effects

The operational phase of the Development will result in a loss of land which would otherwise continue to be used as open moorland for rough grazing.

From the total area within the Development of 662 ha, as noted above it is anticipated that the overall land-take following restoration of temporary infrastructure, as a result of the Development will be 7.5 ha, equating to around 1.2% of the land within the Site.

This is of low magnitude due to the existing land-use on site. 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.

The effects on land-use receptors during the operational phase of the Development are considered not significant in in accordance with the EIA Regulations.

14.5.1.3 Decommissioning Effects

The operational lifespan of the Development and associated infrastructure will be 30 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 landuse effects associated with the decommissioning of the Development.

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 Site while activities to remove the turbines are undertaken. It is expected that decommissioning would take approximately 6 months to complete. 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.

It is expected that decommissioning will involve the reinstatement of the turbine foundations and associated hardstanding 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 Development. Prior to agreement of a comprehensive restoration plan setting out the specific methods of re-instatement. There will be negligible permanent land take following decommissioning, largely consisting of the tracks should the landowner wish to retain these, and presents a negligible effect on land-use, which is considered to be not significant in terms of the EIA Regulations.

The land-use is a low sensitivity receptor and the magnitude of effect is expected to be

As stated throughout this Section, the effects of the Development are considered to be not significant effect on land-use receptors in accordance with the EIA Regulations.

14.5.2 Effects on Socio-Economics

The investment in the Development has potential to generate a range of economic and social effects and opportunities for local businesses, most notably employment opportunities and local spending. Potential social and economic effects can be divided into:

- Wider effects, which are largely 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 that will be created as an immediate effect during the construction, operation and maintenance and decommissioning of the 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 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.

The direct, indirect and induced effects are assessed below for each phase of the Development. This follows a more general assessment of wider benefits.

14.5.2.1 Wider Economic Benefits

In terms of potential supply chain benefits, the 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. Scotland currently houses wind turbine manufacturing plants in Argyll and Bute, Fife, and in the Highlands respectively. 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.



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 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.

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 Development will contribute to diversifying the local economy and help support the retention in the area of the working age population.

14.5.2.2 Construction Effects

Employment

To construct the Development, the Applicant will place significant contracts for services and materials, and the infrastructure contractor would be required by the Applicant, to give local companies due consideration for the provision of goods and services. A series of 'Meet the Developer Days' will be held to brief local businesses on the types of contracts being let during the construction period, to assist local business to take advantage of the opportunities arising and bid for appropriate contracts.

Local sourcing of equipment is preferred whenever possible, but this procurement is subject to tendering and may be constrained by the specialist nature of some of the equipment. Local contractors will be encouraged to tender for construction, operation and maintenance work wherever possible, to ensure maximum benefit to local communities.

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.

It is anticipated that a temporary workforce peaking at 60 people will be employed during the 15-month construction period. Calculated by 'job years', one individual working for 15 months would result in 1.25 job years; therefore, 60 individuals working during the 15-month construction period represents 75 job years.

There would also be knock on effects from the direct employment during the construction and development of the Development as employees spend a proportion of their salaries in the wider economy, creating indirect benefits. The research undertaken by



RenewableUK in 2012⁵⁴ found that the average salary for employees in the onshore wind sector is £34,613.

Overall, the construction of the 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 represent a minor beneficial effect at the local level (of low sensitivity). This would be not significant under the EIA regulations.

Induced Effects

It is likely that there will be some local employment generated as an indirect result of the construction of the Development. This could include supply chain spin-offs for local businesses and sub-contracted work relating to the transportation of labour and materials. 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. There are several accommodation options in the local area, and it is expected that local services will be used by temporary construction contractors.

There may also be the opportunity for local people working on the Development to develop skills gained during construction which will be of benefit both individually and to the local economy in the longer term, such as project management and construction skills which would be transferrable to other construction roles, including other wind farm projects.

Following the COVID-19 outbreak, experts have said that the construction sector may act as a catalyst for economic recovery. The *Build Back Better: COVID-19 Economic Recovery Plan⁵⁵* features a blueprint for a safe return to construction, and sets out recommendations to help stimulate demand for new housing and essential infrastructure emerging from government investment while delivering income to HMRC through training of a new generation of skilled workers post COVID-19.

Overall, the construction of the 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 minor and beneficial at the local level (of low sensitivity). This is considered to represent a minor beneficial temporary effect to the local economy and be not significant under the EIA Regulations.

Capital Expenditure

Based on the BiGGAR Economics report commissioned by RenewableUK 56 , onshore wind Capital Expenditure (CAPEX) is £1.32 million 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; and

⁵⁴ DECC, RenewableUK (2012) Onshore wind: Direct and Wider Economic Impacts [Online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/48359/5229-onshore-wind-direct--wider-economic-impacts.pdf (Accessed 12/11/2020)

⁵⁵ Birmingham City University (2020) Build Back Better: Covid-19 Economic Recovery Plan [Online] Available at: https://scottishconstructionnow.com/uploads/documents/Build%20Back%20Better%20-%20a%20Covid-19%20economic%20recovery%20plan%20FINAL.docx.pdf (Accessed 12/11/2020)

⁵⁶ RenewableUK (2015) Onshore Wind: Economic Impacts in 2014 [Online] Available at: https://cdn.ymaws.com/www.renewableuk.com/resource/resmgr/publications/reports/onshore economic benefit s_re.pdf (Accessed 12/11/2020)



• Grid Connection: Engineering services; Construction; Electrical Components; and industrial equipment and machinery.

Whilst the Development has a proposed total installed capacity would be up to 49.9 MW, it is considered best practice to calculate the CAPEX of the Development using a specific candidate turbine in order to produce more accurate and realistic results. For the purposes of assessment, the expected scenario is based on the layout of 12 turbines and a 4 MW candidate turbine; therefore, the Development an anticipated installed capacity of 48MW. On the basis that the Development has a capacity of 48 MW, a total CAPEX of the order of £63 million, would be expected.

The BiGGAR Report estimates that, of these construction costs, regional expenditure would be 12% (in this case Highland); national expenditure would be 36% (Scotland); and UK expenditure would be 47%. The report also estimated that 53% of construction costs will be spent out with the UK.

On this basis, it is estimated that, during the construction phase, the Development will be worth approximately £29.6 million to the UK economy. Of that approximately £22.7 million is expected to be spent within Scotland (national) and approximately £7.6 million is expected to be spent within Highland (regional).

The Development will bring short-term, beneficial, direct, indirect and induced effects to the national and regional area, through the expenditure on capital costs.

The effects will be of low magnitude at the regional level (medium sensitivity) and negligible at a national level (high sensitivity). Therefore, minor, beneficial significant effects are anticipated on a regional and national level, and this is considered to be not significant in terms of the EIA Regulations.

14.5.2.3 Operational Effects

Employment

The Development will have both direct and indirect effects on employment during operation. The 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.

The operation of the 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 negligible magnitude at the local level (of low sensitivity). Employment effects arising from the operational phase are of negligible, beneficial significance, but this is considered to be not significant in terms of the EIA Regulations. However, the Development will contribute to employment in Scotland.

Operational Expenditure

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.

For the Development, annual Operational Expenditure (OPEX) is therefore expected to be approximately £2.8 million per annum. Of this total spend, the BiGGAR report estimates that 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.

On this basis, it is estimated that, during the operational phase, the Development will result in approximately £2.4 million per annum to the UK economy. Of that approximately £1.1 million per annum will be spent is expected to be spent within Highland, particularly Caithness and Sutherland (local).

The OPEX for the Development is not substantial in magnitude in comparison to the annual GDP of Highland or the value of the renewable industry in Scotland, with the majority of the expenditure taking place at the local, regional or Scotland level. Given the current economic crisis, it is concluded that this would be a beneficial, albeit minor effect, and would be not significant in terms of the EIA Regulations.

Community Benefit

The Scottish Government has emphasised the importance of communities benefitting from renewable energy generation, including through community benefit funds and shared ownership as outlined the Scottish Energy Strategy⁵⁷.

The Development will contribute £5,000 per MW installed capacity to a Community Fund. As detailed in Section 14.5.2.2, based on a 4 MW candidate turbine, this could result in an annual value of £240,000 per annum. With a 30 year operational consent, this could provide £7.2 million in community benefit. Any increase in capacity (up to 49.9 MW) will be reflected in a higher Community Benefit Fund.

Although not a material consideration for the planning process, the Community Fund represents a medium magnitude effect for the local community, a direct, beneficial, 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.

Shared Ownership

In addition, the Applicant is committing to offering the local community the opportunity to invest in the Development through Shared Ownership. This investment opportunity has been discussed with Melvich Community Council and Caithness West Community Council.

Broadband

An identified barrier to economic development of the area of Caithness and Sutherland in which the Development is proposed is access to reliable, high-speed broadband. The Applicant commissioned an early stage Fixed Wireless Broadband Feasibility Study to explore the potential for the using the infrastructure of the Development to deliver superfast broadband, which has shown that alone, the Site has the potential to reach over 260 residences and businesses. Whilst further technological and in-depth engineering studies are required, the initial finding show that fixed wireless broadband could be established to provide a service to large areas of the local community. The potential to enhance fibre connectivity has also been considered. No commitments have been made at this application stage, and discussions are ongoing via a broadband working group to facilitate exploration of the potential benefits. The broadband liaison group consists of local elected

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⁵⁷ Scottish Government (2017) The Future of Energy in Scotland: Scottish Energy Strategy [Online] Available at: https://www.gov.scot/publications/scottish-energy-strategy-future-energy-scotland-9781788515276/ (Accessed 12/11/2020)



representatives, the Caithness Chamber of Commerce and local residents, and has been meeting since March 2020.

14.5.24 Decommissioning

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, beneficial effect acting at local level, resulting in a minor effect which is, however, not significant in terms of the EIA Regulations.

14.5.3 Effects on Tourism

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.

14.5.3.1 Construction Effects

There are no further formally recognised tourist or recreation attractions on the Site. The Site is accessible via the Land Reform Act (Scotland) 2003⁵⁸; however, access to areas where construction is taking place or where there is construction related activities may be restricted. The Construction (Design and Management) Regulations 2015⁵⁹ is a legal obligation for health and safety purposes. Notices will be placed in prominent locations around the Site with details of any areas with restricted access. Such measures would be agreed in advance with the Council.

It is considered that the Site is of low sensitivity for recreation as it does not contain any paths or recreational facilities which are of importance at a local, regional or national level, and access to the neighbouring land will generally be available from other locations surrounding the Site.

The magnitude of effect would be low, given the limited receptors surrounding the Site. Access would not be taken from the NC500, and the access to local hills and walks will not be impacted by construction. Therefore, the effect is considered to be a negligible effect, which is not significant in terms of the EIA Regulations.

The effects on walking routes will be indirect and limited to visual disturbance for the period of construction. There are no designated walking routes within the Site, the Kirkton – Upper Bighouse (SU19.03) Core Path passes approximately 0.5 km south-west of the Site. The construction works within the Site will have no direct effects on walking routes within the 5 km Study Area.

Construction effects on amenity and enjoyment of nearby walks will be localised, as the construction works will only be detectable to route users for 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.

⁵⁸ Scottish Government (2003) Land Reform (Scotland) Act 2003 [Online] Available at: https://www.legislation.gov.uk/asp/2003/2/contents (Accessed 12/11/2020)

⁵⁹ Health and Safety Executive (2015) The Construction (Design and Management) Regulations 2015 [Online] Available at: http://www.hse.gov.uk/construction/cdm/2015/index.htm (Accessed 12/11/2020)



Indirect effects on other off-site resources such as the accommodation, mentioned in Section 14.4.3.1, and local socio-economics, mentioned in Section 14.4.2, are unlikely to be affected by the construction of the Development. Due to the intervening distance of these receptors from the Development, it is considered that the magnitude of effect would be low and of low sensitivity to construction effects. Therefore, this signifies a short-term, negligible effect which is considered to be not significant in terms of the EIA Regulations.

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. The Development will result in a short-term, beneficial effect at local level, resulting in a minor effect, which is, however, not significant in terms of the EIA Regulations. As stated throughout this Section, the effects of the construction phase of the Development are considered to be not significant effect on tourism and recreation receptors in accordance with the EIA Regulations.

14.5.3.2 Operational Effect

The land within the 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 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.

Visual effects associated with the Development may occur at receptor locations, when people are looking towards the Development and from locations where clear views of the turbines are available. The visual effects of the Development on tourism and recreational resources such as the NC500 are assessed in **Chapter 6: Landscape and Visual** of this EIA Report. 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.

It is anticipated that the tracks associated with the Development may also be utilised for access, but is unlikely to result in an increase in formal on-site recreation.

There are a number of further Core Paths identified within the Study Area; however, no Core Paths pass through the Site. The operation of the Development is not expected to alter the features or characteristics of nearby Core Paths. It is expected that the Development will have no impact on the behaviour of visitors/tourists that use paths within the Study Area. Therefore, the effect assessed is considered to be not significant in terms of the EIA Regulations.

Surveys of the public's attitudes to wind farms provide no clear evidence that the presence of wind farms in an area has an adverse impact on local tourism (see Section 14.4.3.2 of this Chapter). Tourists using the local core paths and local tourist attractions may have a particular sensitivity to visual effects; however, access to tourist facilities will be unaffected. Hence, even where significant visual effects are predicted, adverse effects of the operational phase of the Development on tourism receptors will be not significant in accordance with the EIA Regulations.

14.5.3.3 Decommissioning

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.



14.6 CUMULATIVE ASSESSMENT

The appropriate scale for considering cumulative development depends on the nature of the potential effect. There are considered in turn, for each category of potential effect.

There are a number of wind farms within 10 km of the Site, either consented or in the planning process, as set out in Table 14.6.

Table 14.6: Cumulative Wind Farm Sites

Wind Farm	Status of Wind Farm ⁶⁰	Approximate Distance to the Site
Drum Hollistan 2	Application	0.7 km east
Limekiln Wind Farm	Consented	4.9 km east
Limekiln Extension	Application	7.5 km east
Strathy Wood Wind Farm	Application	9.8 km south-west
Strathy North Wind Farm	Existing	9.8 km south-west
Strathy South Wind Farm	Consented	9.8 km south-west

The greater the capacity of consented and constructed developments in the area, the more likely it is that the local area can benefit from supply chain opportunities. Additionally, it is likely that operations and maintenance operations of the Development will be based locally as there would be enough opportunities locally to employ full time local employees and companies.

14.6.1 Land-use

The Site predominately comprises of open moorland used for rough grazing. Given the amount of moorland (approximately 50% of total land cover) in the Highlands, wind farms generally have a very small footprint. As stated in **Chapter 4: Development Description**, it is estimated that the permanent footprint of the Development following completion of construction will be approximately 7.5 ha, equating to approximately 98.8% of the total land in the Site.

The cumulative effects of wind farms during construction and operation are considered to be of negligible magnitude, for a receptor of low sensitivity as impacts are mostly located in poor quality upland areas. This is a resultant negligible effect, and therefore, not significant in terms of the EIA Regulations.

14.6.2 Socio-Economics

Regional socio-economic effects have been defined as at the scale of the Highlands. The beneficial socio-economic effects associated with the Development would be increased and prolonged as a result of the construction and operation of cumulative wind farm developments, benefiting both the construction and energy generation sectors. However, even with the addition of the Development, the combined effect with other wind farms would be considered unlikely to lead to a fundamental change in economic activity within Highlands. This is considered to be not significant in the context of this EIA, in terms of the EIA Regulations. The potential exists in the future, should a large enough number of wind farms be consented in the area, for job creation to occur to support the industry. However, at a regional level, the sustaining of jobs, in construction in particular, is considered to be not significant.

⁶⁰ Status of wind farms is as of 15 September 2020.



14.6.3 Tourism

Cumulative visual effects on outdoor recreational and tourism facilities resulting from the Development in conjunction with other windfarms in the Study Area are assessed in **Chapter 6: Landscape and Visual** of this EIA Report.

Cumulative effects on the amenity of tourism and recreation receptors during operation are strongly linked to visual effect. As set out in Section 14.4.3.2, there is no evidence that tourism is adversely impacted by wind farms.

In the Highlands, the region has seen large increases in wind turbine developments in the last decade, with 617.5 MW growth in installed capacity between 2009 and 2015 within the region⁶¹. This trend is mirrored across Scotland, with 8.4% growth in onshore wind installed capacity between 2017 and 2018⁶².

Despite the increased installation of onshore wind capacity in the Highlands and Scotland, tourism has also risen⁶³ over the same period. For example, the NC500 attracted 29,000 more visitors to the north Highlands within its first year of operation (2015-2016)⁶⁴ despite the deployment of more onshore wind developments. It is considered that wind farm development effects on tourism will be not significant, and no cumulative effects from the Development are anticipated.

14.7 MITIGATION AND RESIDUAL EFFECTS

No mitigation is proposed other than embedded mitigation and no residual effects are anticipated.

14.8 STATEMENT OF SIGNIFICANCE

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 Development will further contribute to the beneficial economic effect of renewable energy, and associated skills base within the Scotland.

The establishment of a local community fund will make a valuable contribution to the local community surrounding the Site although not significant in terms of the EIA Regulations. There is further potential for enhancements from participation in shared ownership and improved access to broadband.

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 Development.

There are a limited number of recreational opportunities within the Study 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 Development both in isolation or cumulatively,

⁶¹ BiGGAR Economics (2017) Wind Farm and Tourism Trends in Scotland [Online] Available at: https://biggareconomics.co.uk/wp-content/uploads/2020/01/Wind-farms-and-tourism-trends-in-Scotland.pdf (Accessed 12/11/2020)

⁶² UK Government (2019) Renewable electricity in Scotland, Wales, Northern Ireland and the regions of England in 2018 [Online] Available at:

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/834159/Regio_nal_Renewables_2018.pdf (Accessed on 12/11/2020)

⁶³ Visit Scotland (2019) Insight Department Key Facts on Tourism in Scotland [Online] Available at: https://www.visitscotland.org/binaries/content/assets/dot-org/pdf/research-papers-2/key-facts-on-tourism-in-scotland-2018-v2.pdf (Accessed 12/11/2020)

⁶⁴ Highlands and Islands Enterprise (2017) North Coast 500 Economic Baseline Study [Online] Available at: https://www.hie.co.uk/research-and-reports/our-reports/2017/june/19/nc500-economic-baseline-study/ (Accessed 12/11/2020)



although land within the Site will be inaccessible to the public during the construction and decommissioning phases for health and safety reasons. Due to a lack of tracks or paths, the Site is not used for recreation purposes. These effects are considered to be not significant in terms of the EIA Regulations.

The effect on existing land-use within the Site is not significant in terms of the EIA Regulations.