



# Rigged Hill Windfarm Repowering

Technical Appendix A13.1: Socio-  
Economic Assessment

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## Rigged Hill Windfarm: Socio-Economic Assessment

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A report to  
Scottish Power Renewables

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## 1 INTRODUCTION

This report has been undertaken by BiGGAR Economics and sets out the socio-economic assessment of the proposed repowering of Rigged Hill Windfarm (the Development), which is approximately 6km south-east of Limavady in Northern Ireland.

### 1.1 Study Areas

For the purposes of this assessment, the following study areas were considered:

- Causeway Coast and Glens Local Government District (LGD); and
- Northern Ireland.

### 1.2 Methodology

#### 1.2.1 Socio-Economics

BiGGAR Economics has undertaken socio-economic assessments of more than 40 windfarm developments across the UK and has provided expert evidence at a number of windfarm inquiries.

The assessment of potential effects on the economy are based on an approach consistent with the approach undertaken by other analyses. This involves breaking the total expenditures into component contracts and assessing the proportion that can be secured in each of the study areas.

The approach was used to assess the impacts of the direct and indirect benefits of the onshore wind sector in Northern Ireland on behalf of Northern Ireland Renewable Industries Group (NIRIG), which considered case studies of operational windfarms in Northern Ireland. It has also been used to assess the economic impact of numerous windfarms across the UK and the results have been accepted as robust at several public inquiries. This approach is industry best practice in the assessment of the economic impact of the onshore wind sector.

#### 1.2.2 Tourism

An overview of the tourism and recreation assets was also undertaken, which considered the importance of the tourism sector to the local economy and how individual assets contribute to attracting visitors to the local area. Tourism attraction and accommodation within the vicinity of the Development were identified.

After reviewing the literature on the relationship between windfarms and tourism, the potential effect of the Development on these assets was then assessed.

### 1.3 Report Structure

The remainder of the report is structured as follows:

- Chapter 2 discusses the national, regional and local strategic context;
- Chapter 3 provides a socio-economic context of the Causeway Coast and Glens;

- Chapter 4 assesses the quantifiable economic impact of the construction and operational phases;
- Chapter 5 discusses the wider benefits associated with the Development;
- Chapter 6 considers the potential effect of the Development on the tourism economy; and
- Chapter 7 provides a summary of the effects of the Development.

## 2 STRATEGIC CONTEXT

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

### 2.1 National and Regional Economic Strategy

#### 2.1.1 Northern Ireland's Economic Strategy

The Northern Ireland Economic Strategy sets out the Northern Ireland Executive's priorities for sustainable growth and prosperity<sup>1</sup>.

The overarching goal of the strategy is to improve the economic competitiveness of the Northern Ireland economy through a focus on export led economic growth. The strategy sets out an economic vision for 2030 of:

*"An economy characterised by a sustainable and growing private sector, where a greater number of firms compete in global markets and there is growing employment and prosperity for all."*

To help realise this vision the strategy identifies five rebalancing themes, one of which is developing economic infrastructure. Energy infrastructure is one of the types of economic infrastructure highlighted as part of this theme. The strategy also identifies a number of key actions that the Executive is taking to rebalance the Northern Irish economy and encouraging business growth. One of these actions is to encourage and develop the green economy and develop the sustainable energy sector<sup>2</sup>.

#### 2.1.2 Forthcoming Revised Economic Strategy for Northern Ireland

In November 2016, a document was released with preliminary findings of a proposed revision to the economic strategy<sup>3</sup>. While acknowledging that the current strategy had met the vast majority of its targets, it identified a number of issues including the need to take account of the impact of the Great Recession and the subsequent slow recovery and the on-going uncertainty generated by the EU referendum vote in June 2016.

It also draws attention to the need for green sustainable growth in order to ensure that there are sufficient resources available for future generations and to take advantage of changes in technology. This is a need which is highlighted by a number of international bodies including the OECD and the United Nations.

Significantly in the case of the proposed repowering of the Development, the proposed revision document reflects on the need to address regional imbalances across Northern Ireland and to spread economic development more widely beyond the Greater Belfast area<sup>4</sup>.

<sup>1</sup> Northern Ireland Executive (2012), Economic Strategy: Priorities for sustainable growth and prosperity

<sup>2</sup> Ibid, p59

<sup>3</sup> Northern Ireland Assembly, 3 November 2016, The Executive's Forthcoming Revised Economic Strategy for Northern Ireland: Preliminary Considerations

<sup>4</sup> Ibid, p3 and p29.

#### 2.1.3 Regional Development Strategy 2035

Strategic planning guidance in relation to physical development in Northern Ireland is provided by the Regional Development Strategy 2035 (RDS), which is intended to deliver the spatial aspects of Northern Ireland's Programme for Government<sup>5</sup>.

Renewable energy appears under the theme of the Economy through Regional Guidance Five, which applies to all of Northern Ireland and refers to the delivery of a sustainable and secure energy supply<sup>6</sup>. One of the points under this action is to increase the contribution that renewable energy can make to the overall energy mix. It is also mentioned in the theme of Environment and again raises concerns about the security of energy supply.

#### 2.1.4 Causeway Coast and Glens Borough Council Economic Strategy and Action Plan 2015 to 2018

The borough council's most recent economic strategy<sup>7</sup> discusses how it aims to build a strong economy in Causeway Coast and Glens.

While being aware that the area faces significant challenges including relatively high unemployment, low wages and limited job opportunities, it also has assets, such as its tourism sector and its arts and cultural offering. It highlights a number of priorities for how it can grow a stronger economy, including:

- becoming more competitive and innovative;
- expanding and developing the tourism sector;
- developing business opportunities in growing areas, such as the renewable energy sector, digital causeway, the knowledge industry and the agrifood sector; and
- ensuring that local infrastructure meets business needs, including the development to reduce high electricity costs.

Rural development was also raised as an important issue, with the centres of many towns and villages experiencing derelict centres, empty shop units and poor connectivity. It is recognised that there needs to be more development of the rural economy, including through speciality markets and an improved tourism offering.

## 2.2 Energy Strategy

#### 2.2.1 Strategic Energy Framework 2010

The Strategic Energy Framework<sup>8</sup> outlines the direction for Northern Ireland's current energy policy. Onshore wind is recognised by the Executive as the most established, large-scale source of renewable energy in Northern Ireland and windfarms are considered to play a vital role in meeting the country's renewable electricity target.

The Framework highlights Northern Ireland's dependence on imported fossil fuels to meet energy needs, which creates uncertainty in terms of security of supply. It also

<sup>5</sup> Department for Regional Development Northern Ireland (2010), Regional Development Strategy 2035.

<sup>6</sup> Ibid, p36.

<sup>7</sup> Causeway Coast and Glens Borough Council (2015), Economic Strategy and Action Plan 2015 to 2018

<sup>8</sup> Department of Enterprise, Trade and Investment (2010), Strategic Energy Framework for Northern Ireland

recognises that this creates a significant carbon footprint that contributes to climate change.

To address these issues the Department of Enterprise, Trade and Investment (DETI) has established the strategic aim of developing a more secure and sustainable energy system where:

- energy is as competitively priced as possible alongside robust security of supply;
- much more energy is from renewable sources and the resulting economic opportunities are fully exploited; and
- energy efficiency is maximised.

In order to achieve this, the Framework sets a target of achieving 40% of its electricity consumption from renewable sources by 2020. The DETI also states its commitment to working with stakeholders to facilitate investment for the benefit of consumers. Planning Policy Statement 18 sets out the Department for the Environment's supportive stance on planning for renewable energy development and makes an explicit link to the need to meet the targets set out in the Strategic Energy Framework<sup>9</sup>.

In the twelve months up to March 2018, the most recent data available<sup>10</sup> indicate that renewable energy accounted for 35.2% of all electricity consumption in Northern Ireland, with wind alone accounting for the 195.1GWh (29.7% of all consumption). This was an increase from March 2010, when renewables share in electricity consumption was 9.2%, and wind contributed 59.1GWh (8.7%).

Further expansion of the renewable energy sector may be affected by the ageing asset base of onshore wind and changes in the subsidy scheme, which would need to be considered in any future energy strategies.

### 2.2.2 DETI – Envisioning the Future<sup>11</sup>

In 2013, the Department for Enterprise, Trade and Investment (now replaced by the Department of the Economy) published a report outlining different scenarios for Northern Ireland's energy system up to 2050 and how early decisions can affect its development.

The main conclusions of the report is that an ambitious reduction in greenhouse gas emissions would require:

- renewable electricity as the main form of electricity generation;
- a higher uptake of renewable heat;
- improved energy efficiency; and
- higher uptake of electric vehicles.

If this aims were to be achieved, this would reduce greenhouse gas emissions by 55% to 80%, while reducing fossil fuel imports from 96% of energy demand to 41% of energy

demand in 2050. Further advances would be necessary, including increased deployment of renewable energy and a reinforced grid with integrated battery storage.

### 2.2.3 NIRIG Energy Strategy for Northern Ireland<sup>12</sup>

NIRIG, the industry body for the renewables sector in Northern Ireland, published its energy strategy in 2018, setting out a vision for Northern Ireland's continued economic growth utilising sustainable, low carbon, low-cost electricity generation from resources such as onshore wind, solar and storage.

The strategy notes that there have been positive developments in the industry, such as reductions in cost, improvements in the underlying technology, an expansion of the supply chain and skills base in Northern Ireland, and a favourable global market. It also discusses three areas that are important for the long-term decarbonisation of the energy sector, including:

- long term policy certainty and a whole-system view – requires political leadership, and confidence in policy direction and the ability of policy-makers to effectively co-ordinate decision-making. Also requires a whole system view incorporating new low carbon transport, low carbon heat in urban communities and integrated competitive electricity markets.
- cost effective, efficient modernisation – providing the basis for new energy infrastructure, such as grids and generating capacity, while increasing the energy efficiency of existing sectors such as housing, transport and industry;
- regional investment, skills and innovation – ensure that all areas of Northern Ireland are connected to the grid and can secure investment in energy generation. Work strategically to expand sectors including through innovation and skills, including training centres and engineering apprenticeships.

NIRIG have also published a vision for energy in 2050<sup>13</sup>, which sets targets for energy generation:

- 40x20 – 40% of electricity from renewable sources by 2020, increasing from 35% currently;
- 70x30<sup>14</sup> – renewable sources provide 70% of electricity. This would include 2.2GW of onshore wind, 400MW of solar generation, 200,00 electric vehicles, 117,00 heat pumps and 340MW of battery storage; and
- 100x50 – a fully decarbonised energy sector by 2050, with a diverse energy mix, competitive markets, maximised low-carbon generation and energy efficiency measures.

### 2.2.4 Baringa – The Wind Dividend<sup>15</sup>

A report by Baringa, which considered the costs and benefits to consumers of wind energy in Northern Ireland, found that there was a net benefit to consumers between 2000 and 2020 as a result of increased deployment of wind energy. Benefits included

<sup>9</sup> Ibid, p15.

<sup>10</sup> Northern Ireland Department for Energy (2018), Northern Ireland Electricity Consumption and Renewable Generation Data Tables

<sup>11</sup> DETI (2013), Envisioning the Future: Considering Energy in Northern Ireland to 2050

<sup>12</sup> NIRIG (2018), Energy Strategy for Northern Ireland

<sup>13</sup> NIRIG (2018), Energy Vision

<sup>14</sup> Based Baringa (2018), A 70% Renewable Electricity Vision for Ireland in 2030

<sup>15</sup> Baringa (2019), The Wind Dividend: How wind energy pays back to Northern Ireland



reduced wholesale electricity prices and avoided EU non-compliance costs. Costs included renewable support, network costs and constraint costs.

It was found that between 2000 and 2020 onshore wind energy reduced consumer costs by £135 million, equating to a net benefit of £4 per person per year in Northern Ireland. In addition, there is a reduced exposure to volatile fuel prices, and reduced carbon emissions.

### 2.2.5 NIRIG Position Paper on Brexit<sup>16</sup>

In January 2018, NIRIG published a position paper on Brexit, which could affect the energy system of Northern Ireland, with significant knock-on effects on the economy. As well as having the potential to affect planned investment in infrastructure, with new windfarm investment in 2017 equal to £220 million, it may also affect manufacturing contracts and partnerships in the wider renewables sector. NIRIG's paper sets out how it thinks energy considerations should be taken account of in the Brexit negotiations.

As part of this, the Single Electricity Market (SEM), which connects Northern Ireland with the Republic of Ireland, should be maintained, and the planned next iteration, the Integrated SEM, should be fully implemented, enhancing security of supply. Northern Ireland and the Republic of Ireland should also act in collaboration to ensure that relevant policy frameworks, objectives and targets are consistent and coherent, and that appropriate electricity infrastructure is developed.

In addition, Northern Ireland's future access to resources, such as European Union (EU) funding of academic institutions, should be clarified to reduce uncertainty. Access to skilled labour and imports, such as materials, plant and equipment, should continue, which may include free reciprocal movement of citizens with particular skill sets and a trade agreement minimising supply chain impacts. Specific alignment should also be sought with regards to matters including energy markets, emissions target, dispute resolution and a number of other areas.

### 2.2.6 RenewableUK – Onshore Wind: The UK's Next Generation<sup>17</sup>

In 2019, RenewableUK published a report showing that older windfarms, which were built in 1990s, are now being decommissioned and that if they are not replaced then 8GW could be retired, 17.5% of the UK's renewable power output and capable of powering 5 million homes.

RenewableUK suggest that these older turbines should be replaced by new turbines that are larger and more efficient, resulting in a reduced number of turbines overall. Under their optimum scenario, older turbines would be replaced or repowered by 12GW of new turbines, a net increase. However, under an intermediate scenario, where present approval trends continue, the capacity could be reduced by 2GW, or by 5.5GW under the lowest scenario considered.

Under these more pessimistic scenarios the UK would find it harder to meet its energy needs as well as its carbon reduction targets.

<sup>16</sup> NIRIG (2018), Position Paper on Brexit

<sup>17</sup> RenewableUK (2019), Onshore Wind: The UK's Next Generation

## 2.3 Local Strategies

As part of the Northern Ireland Rural Development Programme Village Renewal measure operated by the Department of Agriculture, Environment and Rural Affairs, villages throughout the Causeway Coast and Glens have developed a set of Village Action Plans. These aim to ensure that an integrated approach is taken to assist villages and their surrounding areas to realise the potential of their economic, social, cultural and environmental resources.

The closest settlements to the Rigged Hill Windfarm site are the villages of Drumsurn, Ringsend and Boleran. A village plan has been prepared for Drumsurn, which is one of a series of 22 plans that were commissioned by Causeway Coast and Glens Borough Council with funding from the Council and DAERA. The key findings are briefly summarised below.

### 2.3.1 Drumsurn Village Plan

Drumsurn is the closest village to the Rigged Hill Windfarm. It sits in the wider Forest Ward which had an estimated population of 2,480 people in 2016, living in around 860 households. The 2001 Census indicates that the village itself had a population of around 360 people at this time.

The Drumsurn Village Plan was published in June 2018 and lists the village's main assets as: St Matthew's GAC club, the Community Centre, council pitches at the Community Centre, St Peter's Hall, the outdoor gym adjacent to the playing fields, the primary and play school, St Matthew's Church and Balteagh St Canice Church of Ireland.

The Village Plan was developed through consultation with local groups, public meetings and events and previous community development consultations about how they would like to see the village develop over the next five years. These build on a significant number of developments and initiatives that have been taken forward in and around the village of Drumsurn in recent years. Examples include new community groups and classes, upgrading the kitchen facilities, adding new pitches at St Matthew's GAC and bringing in different groups to talk to young people about mental health and well-being.

The key issues that the Drumsurn community identified were:

- environment and infrastructure – improvements are needed to the overall appearance, signage, recycling facilities, road safety, parking, playparks and pathways around the village. Improving and expanding the community centre building was also highlighted as a priority;
- community connections and engagement – support is needed to build the capacity of the new village association which individual voluntary groups are keen to bring together; and
- health and well-being – funding support that would lead to the return of craft and skills classes and support for seniors in the community through intergenerational activities, allotments, community gardens and other measures to support physical and mental health and well-being.

A detailed Action Plan has been drawn up to take these themes forward that identifies priorities, timeframes, indicative costs and potential partners. Initially, four actions have been prioritised:

- providing additional facilities at the community centre to support its necessary refurbishment;
- improving the village signage including directional signage to the community centre;
- develop a natural pathway between the playgroup and the primary school which would be available for the whole community; and
- develop community allotments and the community garden and improve green spaces.

The Action Plan is to be led by a sub-committee of the Drumsurn Community Association and it notes that additional funding sources will be required beyond the Council and the RDP.

## 2.4 Summary of Strategic Context

Investment in energy infrastructure and an aim to meet the renewable energy target of 40% from renewable sources by 2020 are key themes that occur in the strategic economic, environmental and energy policy context documents for Northern Ireland. Higher levels of renewable energy deployment are expected in future years, and it is expected that this would be incorporated in any future energy strategies. An important component of this would be to repower existing sites that are nearing the end of their lives with larger, more efficient turbines. An important component of this would be to repower existing sites that are nearing the end of their lives with larger, more efficient turbines. The drive towards generating more energy from renewable sources is a key policy theme which is supported within the wider planning policy guidance.

The village of Drumsurn is the closest settlement to the windfarm site and the community here has developed a village plan which sets out the current priorities for the area. These relate to a series of environmental, infrastructure, community engagement and health and well-being measures. It has been proposed that the action plan will be led by a sub-committee of the Drumsurn Community Association. Further funding sources are required to bring several of the proposed actions forward.

## 3 SOCIO-ECONOMIC BASELINE

This section discusses the economic profile of the study areas.

### 3.1 Demographics

In mid-2017, the Causeway Coast and Glens Local Government District (LGD) had a population of 143,920, which is equal to 7.7% of the population of Northern Ireland. Between 2001 and 2017, the population of the area has grown by 9.5%, which is slower than the rate for the population of Northern Ireland as a whole of 10.8%.

Although the proportion of population of working age (16-64) in the LGD is similar to Northern Ireland as a whole (62.5% compared to 62.9%), the population aged 65+ is higher at 17.7%, compared to 16.2%. The population aged 20-39, which might be expected to form families accounts for 24.1% of the total population in the LGD which is lower than the level in Northern Ireland of 26.0%. This may contribute to the smaller proportion of the population aged 0-15 in the LGD (19.8%) compared to the country as a whole (20.9%).

Table 3.1 – Population Estimates, 2001-2017

	Causeway Coast and Glens	Northern Ireland
0-15	19.8%	20.9%
16-64	62.5%	62.9%
20-39	24.1%	26.0%
65+	17.7%	16.2%
<b>2017</b>	<b>143,920</b>	<b>1,870,834</b>
2001	131,374	1,688,838
Increase (%)	9.5%	10.8%

Source: NISRA (2018), Mid-2017 Population Estimates: Single year of age and gender 2001-2017

Population projections from NISRA suggest that population of the Causeway Coast and Glens LGD is expected to decrease by 0.9% over a 25-year period to 2041 while the population of Northern Ireland is expected to grow by 7.6% over the same time. The proportion of the LGD's population aged over 65 is projected to increase from 17.4% to 29.8%, while in Northern Ireland it is expected to increase to 24.5%. The proportion of the population of working age is also expected to fall more sharply in the LGD area than in Northern Ireland as a whole. By 2041, around 53.8% of the population are expected to be aged between 16 and 64 in the Causeway Coasts and Glens LGD compared to 57.2% in Northern Ireland as a whole.

Table 3.2 – Population Projections, 2016-2041

	Causeway Coast and Glens		Northern Ireland	
	2016	2041	2016	2041
0-15	19.9%	16.4%	20.8%	18.2%
16-64	62.7%	53.8%	63.2%	57.2%
65+	17.4%	29.8%	16.0%	24.5%
<b>Total</b>	<b>143,525</b>	<b>142,211</b>	<b>1,862,137</b>	<b>2,003,397</b>
Increase (%)	-	-0.9%	-	7.6%

Source: NISRA (2017), Population Projection, 2016-2041

The population density of Causeway Coast and Glens is 72.4 persons per square kilometre, which is less dense than for Northern Ireland as a whole, where it is 137.9 per square metre. The density in Causeway Coast and Glens is the second lowest of any LGD, with only Fermanagh and Omagh being lower, indicating that it is a relatively rural area with few large towns.

Table 3.3 – Population Density, 2017

	Causeway Coast and Glens	Northern Ireland
Population Density	72.4	137.9

Source: NISRA (2018), Mid-2017 Population Estimates: Population Densities

### 3.2 Employment and Economic Activity

The economic activity rate represents the proportion of people aged 16 to 64 that are active in the labour market. In the Causeway Coast and Glens LGD the rate is 66.1% which is below the Northern Irish average of 72.3%. Similarly, the employment rate, which is the proportion of people aged between 16 and 64 that are in work, is lower in the area (61.0%), compared to the average for Northern Ireland as a whole (69.0%).

As well as having lower levels of participation, Causeway Coast and Glens has a higher claimant count rate, which is the proportion of people claiming unemployment benefits. In 2017 this stood at 3.1% compared to 2.4% for Northern Ireland as a whole.

Table 3.4 – Labour Market Indicators

	Causeway Coast and Glens	Northern Ireland
Economic Activity Rate	66.1%	72.3%
Employment Rate	61.0%	69.0%
Claimant Count Rate*	3.1%	2.4%

Source: NISRA (2018), Labour Force Survey 2017. \*ONS (2019), Claimant count by sex and age 2018

According to the Business Register and Employment Survey, employment in Causeway Coast and Glens is 40,555, equal to 5.4% of employment in Northern Ireland (compared to a population share of 7.7%).

The industry responsible for the highest proportion of employment is wholesale and retail trade, which corresponds to 20.6% of employment, compared to 17.4% in Northern Ireland. Accommodation and food services represents 10.2% of local employment, compared to 6.6% nationally. These sectors are relatively low value and often associated with the tourism sector.

The second most important sector is the human health and social services, a sector which is often associated with an older population and the public sector, corresponds to 17.9% of employment, which is higher than the Northern Irish average of 16.9%. Education's share of employment, which is also associated with the public sector, is also higher than the national average (11.1%, compared to 9.2%).

Construction, which is associated with some windfarm contracts, also represents a higher than average proportion of employment at 6.6%, compared to 4.6% nationally. However, professional, scientific and technical services, which are associated with the development phase, represent 2.7% of employment, below the national average (4.4%).

Table 3.5 – Business Register and Employment Survey 2017

	Causeway Coast and Glens	Northern Ireland
A: Agriculture, forestry and fishing	0.2%	0.1%
B: Mining and quarrying	0.5%	0.2%
C: Manufacturing	9.8%	11.2%
D: Electricity, gas, steam and air conditioning supply	0.0%	0.2%
E: Water supply, sewerage, waste management	0.7%	0.9%
F: Construction	6.6%	4.6%
G: Wholesale and retail trade	20.6%	17.4%
H: Transport and storage	3.1%	3.7%
I: Accommodation and food service activities	10.2%	6.6%
J: Information and communication	0.7%	2.7%
K: Financial and insurance activities	1.4%	2.6%
L: Real estate activities	0.7%	0.9%
M: Professional, scientific and technical activities	2.7%	4.4%
N: Administrative and support activities	4.4%	7.6%
O: Public administration and defence	5.1%	6.8%
P: Education	11.1%	9.2%
Q: Human health and social work activities	17.9%	16.9%
R: Arts, entertainment and recreation	2.2%	2.0%
S: Other services	2.2%	2.0%
<b>Total</b>	<b>40,555</b>	<b>744,457</b>

Source: NISRA (2018), Business Register and Employment Survey 2017

### 3.3 Wages and Productivity

The median annual gross pay for full-time workers in Causeway Coast and Glens in 2017/18 (due to the small sample size in individual years an average of 2017 and 2018 was



taken) was £18,534, compared to £21,616 in Northern Ireland. Median annual gross pay was therefore 14.3% lower than the national average.

Table 3.6 – Median Gross Annual Pay – Full-time Workers

	Causeway Coast and Glens	Northern Ireland
Median annual gross pay (£)	18,534	21,616

Source: DETI (2018), Annual Survey of Hours and Earnings 2017-18

As can be seen in in Table 3.7, Gross Value Added (GVA) per head, a measure of productivity, is lower in Causeway Coast and Glens at about £12,000 per head, than in Northern Ireland as a whole, where it is £21,200. Although the figures are somewhat skewed by the presence of Belfast, the study area has the second lowest GVA per head of any LGD (behind Ards and North Down). It has also experienced the lowest growth rate of any LGD at 4.7%, behind the rate of 7.9% in Northern Ireland.

It should be noted that these figures can be affected by factors such as population structure and commuting, and therefore the GVA per filled job has also been included. The GVA per job in the LGD at £38,200 is around 24% below the average of £47,500 in Northern Ireland as a whole. This places productivity per job in the LGD at 8<sup>th</sup> out of 11 LGDs in Northern Ireland, and places Causeway Coast and Glens in the bottom 5% of UK areas.

Table 3.7 – Gross Value Added, 1997-2017

	Causeway Coast and Glens	Northern Ireland
GVA per head (£)	12,000	21,200
Growth since 1997	4.7%	7.9%
GVA per filled job (£)	38,200	47,500

Source: ONS (2018), Regional Gross Value Added 1997-2017

Data for 2017/18 indicate that wages across the LGD are around 14% lower than average for Northern Ireland and productivity (GVA per job) is also 24% lower than the average for Northern Ireland. This is indicative of a relatively low wage economy.

### 3.4 Summary of Socio-Economic Baseline

In 2017 the population of the Causeway Coast and Glens LGD was just under 144,000 people, representing around 8% of the population of Northern Ireland. Since 2001, the area's population has not grown as quickly as the average observed for Northern Ireland as a whole and over a 25-year period to 2041 its population is forecast to contract slightly. Over the same time, the population of Northern Ireland is expected to grow. The area is relatively rural with a population density of around half the average for Northern Ireland.

The area had around 40,500 employees in 2017, representing just over 5% of total employment in Northern Ireland. Its employment structure is skewed towards the wholesale and retail sector, and accommodation and food services and is indicative of an economy associated with tourism. It has a slightly higher proportion of employment in the construction sector compared with the average for Northern Ireland.

The economic activity rate and the employment rate are both lower in the Causeway Coast and Glens LGD than they are for Northern Ireland as a whole. The area has a slightly higher unemployment claimant count than average for Northern Ireland.

## 4 SOCIO-ECONOMIC ASSESSMENT

This section assesses the potential economic impact Rigged Hill Windfarm.

### 4.1 Methodology

There is no agreed upon legislation, policy or guidance available on the methods that should be used to assess the socio-economic impacts of the Development. However, there have been a number of studies which have attempted to quantify the economic impacts of onshore wind in the UK. These include:

- a 2012 study undertaken by BiGGAR Economics on behalf of RenewableUK and the Department for Energy and Climate Change (DECC) on the direct and wider economic benefits of the onshore wind sector in the UK;
- an updated study by BiGGAR Economics, which was published in 2015 on behalf of RenewableUK and also assessed the economic benefits of onshore wind in the UK;
- a 2015 study by BiGGAR Economics using the same methodology which assessed the impact of the onshore wind sector in Northern Ireland on behalf of NI-RIG; and
- a 2017 study by BVG Associates on behalf of ScottishPower Renewable, which assessed the impact of eight onshore windfarms in the south west of Scotland.

These studies, which have similar methodologies, each look at windfarms that have already been constructed, break down the costs by contract type, and assess what proportion of contracts are secured in each study area. This includes indirect contracts as well as the contribution of spending by employees working on these contracts.

The analysis undertaken is consistent with the methodologies previously used to assess the economic impact of the onshore wind sector. Given its focus on Northern Ireland, and the level of detail presented in the report, the assessment is primarily based on the study undertaken on behalf of NI-RIG.

#### 4.1.1 Stages in Socio-Economic Analysis

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

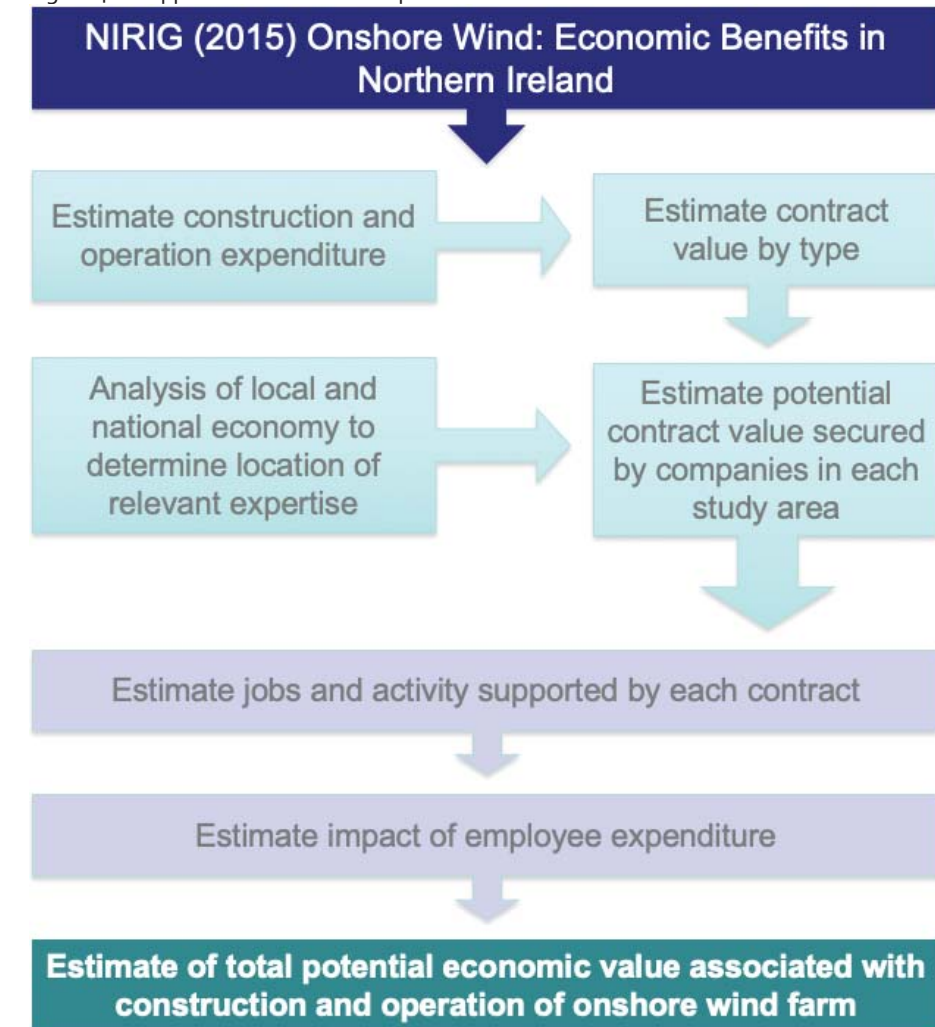
Applying these assumptions to the initial expenditure provided an estimate of the amount of each component contract that could be secured by companies in Causeway Coast and Glens, and Northern Ireland. There are two sources of economic activity: the first arising from each of the component contracts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

There are four key stages involved in this model:

- estimating the total capital expenditure;

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

Figure 4.1 – Approach to Economic Impact Assessment



Source: BiGGAR Economics

### 4.2 Development and Construction

The economic impact assessment has been undertaken on the basis of 7 turbines with up to 4MW of generating capacity each, with total generating capacity of 28MW.

Using the methodologies discussed in the Section 4.1, the average expenditure on the construction and development of windfarms can be estimated based on the average spend per MW, the average spend per turbine, or a combination of the two, as appropriate. The total cost of construction and development for this assessment was estimated, using a combination of spend per MW and spend per turbine taken from the NIRIG report, to be £30.8 million.

The expenditure is split into four main categories of contracts:

- development and planning;
- balance of plant;
- turbines; and
- grid connection.

The proportion of construction and development spending that is spent on each of the main categories was also based on BiGGAR Economics research into windfarms currently in operations. On this basis, it was found that the largest proportion of capital expenditure was on turbine related contracts (64%), followed by balance of plant (16%), grid connection (12%) and development and planning (8%).

Table 4.1 – Capital Expenditure by Contract Type during Construction and Development

	%	£m
Development	8	2.5
Balance of Plant	16	4.9
Turbine	64	19.6
Grid Connection	12	3.8
<b>Total</b>	<b>100</b>	<b>30.8</b>

Source: BiGGAR Economics (2015), Onshore Wind: Economic Benefits in Northern Ireland

The economic impact of the construction and development phase was estimated for Causeway Coast and Glens LGD and Northern Ireland. In order to do this, it was necessary to estimate the proportion of each type of contract that might be secured in each of the study areas. To estimate the expenditure for each contract in each of the study areas these percentages were applied to the estimated size of each component contract.

The assumptions were based on the average from the NIRIG research, analysis of the industries and professions in each of the study areas, BiGGAR Economics previous experience and information provided by the developer. For example, local and Northern Ireland based companies have secured contracts as part of the development stage, including Limavady based Cassidy Acoustics and Paul Johnston Associates. In the past the developer has also worked with Northern Ireland based balance of plant contractors such as Farrans Ltd Belfast office and it is expected that stone aggregate from nearby quarries would also be used during the construction phase.

On this basis it was estimated that Causeway Coast and Glens could secure contracts worth £2.1 million, which is equivalent to 7% of capital expenditure. The largest opportunity for the LGD would be with balance of plant contracts as companies in the local area could secure 27% of contracts, worth up to £1.3 million.

Northern Ireland could secure up to 29% of total capex, worth £8.9 million. Again, the balance of plants contract would be the largest opportunity, where Northern Ireland could secure 62% of contracts worth £3.0 million.

Table 4.2 – Construction and Development Contract Value by Study Area

	Causeway Coast and Glens		Northern Ireland	
	%	£m	%	£m
Development	5	0.1	35	0.9
Balance of Plant	27	1.3	62	3.0
Turbine	2	0.3	9	1.8
Grid Connection	7	0.3	82	3.1
<b>Total</b>	<b>7</b>	<b>2.1</b>	<b>29</b>	<b>8.9</b>

Source: BiGGAR Economics Analysis

The contract values awarded in each study area would represent an increase in turnover of businesses in these areas. The impact that this increase in turnover has on employment was estimated using industry-specific data from the Annual Business Survey<sup>18</sup>. This survey gives the turnover per employee for each of the industries involved, which allows the employment from any increase in turnover to be estimated.

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

In this way, the construction and development impacts were estimated to support 15 job years in Causeway Coast and Glens, of which 10 job years would be in balance of plant contracts. It was estimated that 63 job years would be supported in Northern Ireland.

Table 4.3 – Construction and Development Job Years by Contract Type and Study Area

	Causeway Coast and Glens	Northern Ireland
Development	1	9
Balance of Plant	10	21
Turbine	2	15
Grid Connection	2	18
<b>Total</b>	<b>15</b>	<b>63</b>

Source: BiGGAR Economics Analysis

There would also be knock on effects from the direct employment during the Development because the people who are employed on the project will have an impact on the wider economy when they spend their salaries. The research undertaken for RenewableUK in 2012<sup>19</sup> found that the average salary for employees in the onshore wind sector is £34,600. It was therefore estimated that £2.2 million would be paid to staff directly employed during the construction and development phase of the Development.

In order to estimate the economic impact of these salaries in each of the study areas it was necessary to make assumptions regarding the location of employee expenditure. It was assumed that employees that live in Causeway Coast and Glens would spend 40% of

<sup>18</sup> Office for National Statistics (2018), Annual Business Survey 2017 Provisional

<sup>19</sup> Department of Energy and Climate Change, RenewableUK (2012), Onshore Wind: Direct and Wider Economic Impacts

their salaries within the area. Workers living in Northern Ireland were assumed to spend 74% of their salaries in Northern Ireland.

The economic impact of this increase in expenditure was estimated using the average GVA/turnover and turnover/employee for the whole economy as reported in the Annual Business Survey<sup>20</sup>. In this way it was possible to estimate the induced impact direct employees would create in the construction and development phase. In Causeway Coast and Glens employees could spend £0.2 million, supporting £0.1 million GVA and 1 job. In Northern Ireland, direct employees could spend £1.6 million, supporting £0.5 million GVA and 10 jobs.

Table 4.4 – Construction and Development Salary Spending Impact (Induced)

	Causeway Coast and Glens	Northern Ireland
Employee Spend (£m)	0.2	1.6
GVA (£m)	0.1	0.5
Employment (job years)	1	10

Source: BiGGAR Economics Analysis

The total impact during the construction and development phase is the sum of the direct impacts and the induced impacts from the expenditure of direct employees. The total combined impact was estimated to be £2.1 million and 16 job years in Causeway Coast and Glens, and £9.4 million and 73 job years in Northern Ireland.

Table 4.5 – Economic Impact during Construction and Development

	Causeway Coast and Glens	Northern Ireland
Economic Impact (£m)	2.1	9.4
Employment (job years)	16	73

Source: BiGGAR Economics Analysis

The developer has a long-standing foundation in Northern Ireland, including operating five onshore windfarms and the West of Duddon Sand Offshore Wind Farm (near Barrow-in-Furness), which enabled the construction of a £50 million bespoke offshore wind installation and pre-assembly facility at Belfast Harbour, supporting hundreds of jobs. Similarly, Belfast-based Harland and Wolff were able to secure a foundations contract worth £30 million as part of the East Anglia ONE Offshore Wind Farm, demonstrating the impact that ScottishPower Renewables has had on the Northern Ireland economy.

### 4.3 Operations and Maintenance

The operation and maintenance impact of the Development was estimated annually as the impact would persist throughout the life span of the Development.

Expenditure on operations and maintenance was estimated based on analysis undertaken in the NIRIG report. It was estimated that the annual operations and maintenance expenditure associated with the Development could be around £0.9 million. As an illustration of the effect over time, after for example 30 years, this could amount to £28.8 million. This excludes non-domestic rates and community benefit funding (covered below).

<sup>20</sup> Office for National Statistics (2018), Annual Business Survey 2017 Provisional

As with construction and development, in order to estimate the economic impact of the operation and maintenance it was first necessary to estimate the proportion of contracts that could be secured in each of the study areas. These assumption were based on the contract proportions reported in the NIRIG, analysis of the industries present in each of the study areas and existing arrangements.

Existing operation and maintenance contracts include civil works provided by Corkey Quarry and plant hire by CP Hire in Coleraine, as well as those provided by a number of Northern Ireland based businesses such as O'Hagans Crane Hire, WH Alexander and McCloy Consulting. They are also operational employees working for the developer that are based locally, either at the existing Rigged Hill Windfarm, Corkey Windfarm or Elliot's Hill Windfarm.

Based on this information it was assumed that Causeway Coast and Glens could secure 38% of operation and maintenance contracts, worth £0.4 million annually and £10.3 million over an assumed 30 years, and that Northern Ireland could secure 53% of contracts, worth £0.5 million annually and £14.1 million over 30 years.

Table 4.6 – Annual Operation and Maintenance Spend by Study Area

	Causeway Coast and Glens		Northern Ireland	
	%	£m	%	£m
Operation and maintenance	38	0.3	53	0.5

Source: BiGGAR Economics Analysis

As with the construction and development phase, the contract values awarded in each of the study areas represent an increase in turnover in those areas. The economic impact of the increase in turnover was estimated in the same way as the construction expenditure using the Annual Business Survey.

In this way it was estimated the turnover generated by the operation and maintenance of the Development could support 2 jobs in Causeway Coast and Glens and 3 job in Northern Ireland.

Table 4.7 – Annual Employment during Operation and Maintenance Phase

	Causeway Coast and Glens	Northern Ireland
Employment	2	3

Source: BiGGAR Economics Analysis

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

Adding together the direct and induced impacts from the spending of direct employees during the operation and maintenance it was estimated that the total impact would be £0.4 million and 3 jobs in Causeway Coast and Glens, equal to £10.6 million over 30 years, and £0.5 million and 4 jobs in Northern Ireland, equal to £14.9 million over 30 years.



Table 4.8 – Total Economic Impact during Operation and Maintenance Phase

	Causeway Coast and Glens	Northern Ireland
Economic Impact (£m)	0.4	0.5
Employment	3	4

Source: BiGGAR Economics Analysis

## 4.4 Maximising Economic Benefits

The scale of the investment required to develop, build and operate a windfarm means that it represents a significant investment in the local area. Developers can maximise the associated impacts through a range of measures, which can have the benefit of increasing local support for the windfarm. It can also improve the delivery of the Development through having a more conveniently located supply chain and having scope to cut costs.

### 4.4.1 Best Practice in Supply Chain Development

Best practice is set out in reports by NIRIG<sup>21</sup> RenewableUK<sup>22</sup>, which considered how developers can increase economic impacts in the local area. There are six main recommendations:

- maximise your local presence and begin early – identify potential suppliers and increase your visibility in the local area;
- partnerships work – work with local authorities and business groups to gain information on local expertise and spread the message to local businesses;
- leverage primary contractors – ensure that primary contractors also consider the impact that they can make in the local area;
- provide the right information – give information in plenty of time and in the right format so that local businesses are able to prepare;
- communicate technical requirements early – provide opportunities for local companies to upskill and form local consortia; and
- demonstrate local content in planning – insert local-content commitments in the planning application where applicable and undertake post-construction auditing.

### 4.4.2 Rigged Hill Windfarm Supply Chain Development

The first step that can be taken by developers is to establish their presence in the local area, allowing a thorough, in-depth understanding of potential suppliers and the content that can be secured locally. The developer has a good understanding of the local area's capacity, given that it currently operates Rigged Hill Windfarm. It has organised Public Information Days held in venues in Garvagh and Limavady.

The developer also plans to organise meet-the-buyer events, where local contractors can learn about opportunities to bid for contracts as part of the construction or operation of the windfarm, which can be organised in conjunction with local partners such as

<sup>21</sup> NIRIG (2014), Community Best Practice Guidance

<sup>22</sup> RenewableUK (2014), Local Supply Chain Opportunities in Onshore Wind: Good Practice Guide

Causeway Coast and Glens Borough Council, or the Chamber of Commerce. The developer has significant experience in organising these types of events, and its approach is highlighted in a case study of the NIRIG report. As an example, the developer has previously contracted Farrans Ltd, which has a Belfast office, to lead work throughout the UK, including in the south west of Scotland<sup>23</sup>.

Early engagement is important as it gives local businesses, which do not currently have the required skills to bid for contracts, the opportunity to upskill. Therefore, training and support for local businesses can be organised to increase their capacity to bid. The developer can work with partners, such as the Department of Energy, the North West Regional College, which has a campus in Limavady, and the Northern Regional College, which has branches in Ballymoney, Coleraine and Ballymena.

In addition, the developer has committed to giving additional weight in the tendering process is given to primary contractors that show a clear commitment to increasing local content in their supply chains. Based on experience elsewhere, it is anticipated that this would encourage the formation of consortia and joint ventures with local firms.

An auditing process could also be undertaken so that the amount of local content sourced during the construction phase is recorded. This can be used to illustrate the benefits of the onshore wind sector for future applications and can be passed back to the local business community.

<sup>23</sup> BVG Associates (2017), Economic benefits of onshore wind farms



## 5 WIDER BENEFITS

This section considers the wider benefits that could be associated with the Development, such as community benefit funding and payment of non-domestic rates.

### 5.1 Community Benefits

#### 5.1.1 Best Practice in Community Benefits

The NIRIG report on best practice<sup>24</sup> also considered how developers can maximise the benefits associated with community benefit funds. When considering how to distribute community benefits developers should carefully consider the current local context and tailor any commitments to existing local community plans and identify relevant stakeholders in the local area, such as community support organisation and youth groups, and their priorities. Given that not all communities will have the capacity to engage with the process and manage funding of this level, developers should also consider how stakeholders can be engaged, perhaps with the aid of external expertise, and how community benefit funding will be administered.

NIRIG recommend that the minimum standard for community benefits in projects greater than 5MW should be £1,000 per MW although higher commitments of £5,000 per MW are encouraged where this is feasible. This can include in-kind benefits that improve the local area, such as environmental improvements, developing local facilities and road repairs.

#### 5.1.2 Community Benefit Funding

The developer intends to provide benefits to the community which will be in line with industry best practice for community benefits funds. For the purpose of the assessment, it has been assumed that community funding will be £1,000 per MW of installed capacity per year (index linked). As the scheme is expected to have a capacity of c.28MW this suggests that the annual contribution to the fund will be up to £28,000. Over 30 years this would equate to £0.8 million.

Table 5.1 – Community Benefit Fund

	Value
Funding per MW (£)	1,000
Installed capacity (MW)	28
Annual Contribution (£)	28,000
Contribution over 30 years (£m)	0.8

Source: BiGGAR Economics Analysis

As an illustration of the level of employment that could be supported by this funding, a survey by the Northern Ireland Council for Voluntary Action (NICVA) found that in 2014 there were around 26,800 full-time staff in the Northern Ireland voluntary sector and it had an income of £618 million. This suggests that the average turnover per full-time staff

member in the voluntary sector was around £23,000<sup>25</sup>. Therefore, it was estimated that 1 full-time job could be supported in the voluntary sector by a community fund of this scale.

Through its presence in Northern Ireland to date ScottishPower Renewables has provided around £200,000 of funding to local primary schools and other organisations. This has supported a range of projects, such as improving community centre accessibility, sponsoring local youth group activities and for example creating a sensory garden for a playgroup.

### 5.2 Community Aspirations

In mid-2018 Drumsurn published its village plan, which set out the aspirations of the village as well as specific actions that can be taken to achieve them. These include:

- expanding and refurbishing community facilities, including outdoor areas and community allotments;
- expanded village infrastructure, including pathways, signage and lighting, to improve health and wellbeing outcomes; and
- expand classes and community events to bring the community together and reduce social isolation.

These projects each require various levels of initial or ongoing funding and in some cases potential funding partners are identified. However, Britain's exit from the European Union, which has previously provided support for many community projects in Northern Ireland, represents a change to the funding landscape that may result in smaller amounts of being available for these types of projects. In addition, the village plan states:

"It is recognised that Council and RDP will not have sufficient funds to carry out all the activities in this plan and other sources of funding will be required."<sup>26</sup>

This suggests a role for the community benefit funding from the Development, which could be used to support capital projects, such as building new facilities and refurbishing older ones, and the provision of services in the local communities, such as adult education programmes. As well as directly supporting community aspirations, the funding could also be used to leverage funding from other organisations such as the Big Lottery.

### 5.3 Community Organisation

The provision of community benefit funding would require a community organisation that is capable of administering the funding.

This can be achieved through several organisational structures and it would be for the community to determine which structure best meets their needs and to maximise local social and economic benefits. These may include incorporation of a limited liability company, a local development trust or another type of organisation.

<sup>24</sup> NIRIG (2014), Community Best Practice Guidance

<sup>25</sup> Northern Ireland Council for Voluntary Action (2014), State of the Sector 2014.

<http://www.nicva.org/stateofthesector>

<sup>26</sup> Venture Network (2018), Drumsurn Village Plan

The community representatives, who would be responsible for administration of the fund, would be chosen with regard for representing each of the communities that would be part of the organisation. The Village Action Plans, and the process that led to their development, could form the basis for this organisation.

The community organisation could also develop partnerships with other local and regional organisations, such as Causeway Coast and Glens Borough Council to maximise funds through match funding where appropriate. These could help to develop projects that would benefit the local communities, manage projects and contribute to project funding.

## 5.4 Non-Domestic Rates

The Development would be liable for non-domestic rates, the payment of which would contribute to public sector finances. It is expected that the average rateable value per MW of around £27,000.

Given that the Development would be c. 28MW, it is estimated that the total rateable value would be £0.8 million. Given a poundage rate of £0.579<sup>27</sup> per £1 of rateable value it is estimated that the Development could contribute £0.4 million annually to public finances. Over 30 years this would be expected to contribute £13.1 million, although the actual contribution would depend on variable such as the actual load factor.

Of the non-domestic rates paid, 42.3% is the district rate that is paid to the council and 57.7% is the regional rate paid to the Northern Ireland Assembly, although in practice some of the regional contribution will be used to fund services in the LGD. These non-domestic rates, by providing an additional revenue stream, would support the delivery of government services.

## 5.5 Homes Powered and Carbon Reduced

In 2016, the latest year for which data was available, the average energy used per household in Northern Ireland was 3.4MWh per year. Based on the Northern Ireland average load factor of 26.5%, that would suggest that the Development would power 19,100 homes.

In addition, the Development would be expected to reduce carbon emissions. Given that the carbon intensity of the Northern Ireland grid is currently 492 gCO<sub>2</sub>/kWh, that would suggest that there would be about 32,000 tonnes of carbon dioxide avoided annually.

<sup>27</sup> Northern Ireland Department of Finance – Poundages 2018-19. <https://www.finance-ni.gov.uk/articles/poundages-2018-2019>

## 6 TOURISM ASSESSMENT

This section considers the potential effect on tourism in the local area by looking at the drivers of tourism nationally and regionally, the evidence on the relationship between windfarms and tourism, and analysing the potential effect on tourism assets in the local area.

### 6.1 Tourism in Northern Ireland

#### 6.1.1 Scale of Tourism

The latest data on tourism in Northern Ireland indicates that there has been a steady growth in overall tourism<sup>28</sup>. In 2017:

- around 4.8 million people visited Northern Ireland and spent £939m in the local economy;
- there were 2.6 million visitors from outside Northern Ireland accounted for expenditure of £662 million; and
- overall visitor spend increased by 9% and external visitor spend increased by 6% when compared with the year before.

#### 6.1.2 Drivers of Growth

Tourism can be influenced by a number of factors such as initiatives from government, marketing by tourism agencies and major events as well as practical developments such as the opening up of new air routes and changes to cruise ship itineraries. Visitors may also be influenced to come to Northern Ireland by local attractions, such as the Giant's Causeway and Titanic Belfast.

The local film industry has also had an impact on tourism, with increasing visitor numbers to locations used in TV series, such as Game of Thrones. For example, the Dark Hedges site near Ballymoney which features in the series as the Kingsroad, has seen an increase in visitor numbers.

The economic situation also influences tourism expenditure with the recent decrease in the value of sterling against foreign currencies making UK destinations less expensive for overseas visitors. All these factors will contribute to the volume, type and nature of tourism that is drawn to Northern Ireland.

#### 6.1.3 Visitor Attraction Survey

The Annual Visitor Attraction Survey run by the Northern Ireland Statistics and Research Agency (NISRA)<sup>29</sup> contacted over 400 visitor attractions at the end of December 2017. Around 240 responses provided data for analysis. The key findings were:

- 19.8 million visits were made to visitor attractions during 2017;

<sup>28</sup> NISRA, June 2018, Northern Ireland Annual Tourism Statistics, 2017

<sup>29</sup> NISRA, June 2018, Northern Ireland Annual Visitor Attraction Survey 2017

- visits to the headline attractions (Giant’s Causeway and Titanic Belfast) increased by 10% between 2016 and 2017;
- 38% of attractions indicated that revenue had increased in 2017;
- 62% of visits were made by Northern Ireland residents; and
- Country Parks/Parks/Forests accounted for 38% of all visitors reported in 2017.

Excluding country parks, parks, forests and gardens, the top visitor attraction in Northern Ireland was the Giant’s Causeway which received 1,012,000 visitors in 2017.

## 6.2 Tourism in Causeway Coast and Glens

### 6.2.1 Tourism Economy

There were almost 1.1 million overnight trips to Causeway Coast and Glens in 2017, which was equivalent to 21% of the 5 million overnight trips to Northern Ireland that year. This makes the area the second most visited LGD after Belfast. The latest data available on the number of trips, the reason for visiting and their expenditure is summarised in Table 6.1.

Expenditure by overnight visitors was around £193.6 million which accounted for 21% of the total overnight tourism expenditure in Northern Ireland. Since 2011, the number of visitors has grown by 33% in the Causeway Coasts and Glens area, compared to 23% growth in Northern Ireland as a whole.

Around three-quarters (76%) of the trips to the Causeway Coast and Glens are described as holiday/leisure trips, which is high compared to Northern Ireland as a whole where this is given as the reason for around 49% of trips. Conversely, visiting friends and family attracts a lower proportion of tourist trips to the Causeway Coasts and Glens than it does to Northern Ireland as a whole. This reflects the high number of visitors that come to see the attractions in the area such as the Giant’s Causeway and Carrick-a-Rede Rope Bridge (discussed in Section 6.2.2) compared with visitors coming for the purpose of visiting friends and family.

Table 6.1 – Overnight Trips and Spend by LGD and Country, 2017

	Causeway Coast and Glens	Northern Ireland
Overnight Trips 2011	798,000	4,066,000
Overnight Trips 2017	1,064,000	5,009,000
Holiday/Leisure	76%	49%
Visiting Friends and Relatives	20%	40%
Business	3%	9%
Other	1%	3%
Expenditure	£193,573,000	£926,129,000

Source: NISRA (2018), Local Government District Tourism Statistics

### 6.2.2 Regional Attractions

The most visited attractions in Causeway Coast and Glens are displayed in Table 6.2, as well as their respective distances from the Development.

The majority of the attractions are located to the north or north-east of the Development, along the northern coast. The closest attraction of these attractions is Hezlett House, which is about 14km from the Development and received 52,000 visitors in 2017. Given the distance, it is not expected that any of the major visitor attractions in Causeway Coast and Glens are likely to be affected by the Development.

Roe Valley Country Park is located 6km to the west of the Development and is discussed in Section 6.3.

Table 6.2 – Most Visited Attractions in Causeway Coast and Glens

	Visitor numbers	Approximate Distance from Proposed Site Boundary (km)
Giant’s Causeway World Heritage Site	1,011,500	30
Carrick-a-Rede Rope Bridge	434,420	39
Roe Valley Country Park	272,618	6
Portstewart Strand	191,597	15
Bushmills Distillery	130,000	27
Dunluce Castle	84,440	26
Rathlin Island	52,641	47
Hezlett House	52,000	14
Portrush Coastal Zone	37,000	22

Source: NISRA (2018), Northern Island Visitor Attraction Survey 2017

### 6.2.3 Causeway Coast and Glens Tourism and Destination Management Strategy 2015-2020

The tourism strategy for the Causeway Coast and Glens Council<sup>30</sup> considers the way forward for its tourism industry including how it can grasp opportunities and overcome challenges through a more co-ordinated and robust approach to visitor destination management.

A number of issues and opportunities were identified, including:

- visitors are drawn to the area by popular attractions and there is an opportunity to disperse the benefits more widely across the region;
- the area attracts many day visitors and there is an opportunity to encourage extended stays by promoting more signature attractions and creating more high-quality accommodation;

<sup>30</sup> Causeway Coasts and Glens Council, Tourism and Destination Management Plan 2015-2020 – Executive Summary

- working to extend the season outside the months of June-September, and developing the night-time economy; and
- developing a destination management approach to co-ordinate all aspects of the destination, including protecting and developing the built and natural environment.

### 6.3 Tourism in the Study area

#### 6.3.1 Tourism and Recreation Assets

A small number of tourism and recreation assets were identified based on analysis previously undertaken for the Scoping Request and a web-based research. These include:

- Cam Forest which is adjacent to the site to its north and east and are used mainly for walking and horse riding;
- Gortnamoyagh Forest, which is 3km to the south-east and is currently closed for tree felling and harvesting;
- Garvagh Forest which is 8km to the south-east.

In addition, approximately 6km to the west of the Development is the Roe Country Park near Limavady. This received 272,618 visitors in 2017, and has a number of recreational activities such as woodland walks, canoeing, fishing and rock climbing. There is a tea room at the park as well as the Green Lane Museum, which explores the heritage of the site and received 3,678 visitors in 2017.

As well as the Cam Forest the Ulster Way, a 1,000km (625 mile) circular route around Northern Ireland, passes through the site. In 1994, when the existing windfarm was built, a section was diverted to make use of the tracks associated with the windfarm.

There are a small number of other routes in the local area, including

- the urban, 4.8km (3 mile) Highway to Health walk in Limavady, which is 5.2km north-west of the site
- the 3.2km (2 mile) Boyd’s Riverside Walk along the River Roe, which is 6.8km to the south-west of the site;
- the 5.1km (3.2 mile) Tannyranny walk near Dungiven, which is 6.0km to the south of the site; and
- National Cycle Route 93 also passes 6.2km to the west of the site through Limavady.

#### 6.3.2 Accommodation Providers

A web-based search of accommodation providers within 10km of the Development identified 2 providers within 0-5km of the Development and a further 13 at a distance of between 5-10km from the site boundary. These are listed in Table 6.3 based on approximate location and distance from the development site.

Most accommodation providers are based around Limavady and along the Roe Valley to the west of the Development. The majority are either self-catering accommodation,

such as The Views which is adjacent to the Development, or bed and breakfasts (B&B) such as Carrick Lodge B&B on the B68 adjacent to the River Roe.

The largest provider is the award-winning 4-star Roe Park Resort Hotel to the west Limavady which also offers a golf course and spa facilities within a few kilometres of the main resort. Roe Park is also a popular wedding destination. Also nearby is the Drenagh country estate, an award-winning wedding and event venue to the east of Limavady.

In addition to the hotels, bed and breakfast and self-catering accommodation there is also a caravan/campsite to the south west of the site near Dungiven.

Table 6.3 – Accommodation Providers with 10km of the Site Boundary

Distance	Location	No. of Providers
0-5km	Adjacent to Rigged Hill	1
	Ringsend	1
6-10km	Ringsend	1
	B68, adjacent to River Roe	2
	Limavady	3
	Crindle area	2
	Ballykelly	2
	Dungiven area	3

Source: BiGGAR Economics Analysis

### 6.4 Evidence on the Effect of Windfarms on Tourism

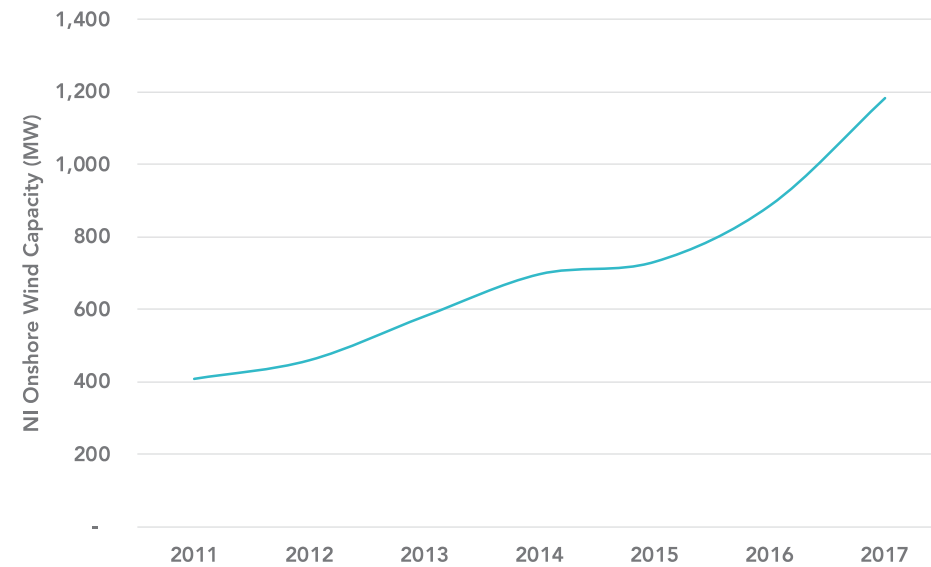
To date there has been relatively little research on the relationship between windfarms and tourism in Northern Ireland. Therefore, this section discusses the relative growth of renewable energy and tourism in Northern Ireland, as well as a survey published on the views of visitors to the Republic of Ireland on windfarm developments and evidence from a study undertaken in Scotland on the effects of windfarms on tourism.

#### 6.4.1 National Trends

As can be seen in Figure 6.1, the total installed capacity of onshore wind in Northern Ireland has increased from 409 MW in 2011 to 1,182 MW in 2017, an increase of 189%. Over the same period (Figure 6.2) the number of overnight visitors from outside Northern Ireland has increased from 1,932,000 to 2,658,000, a 38% increase.

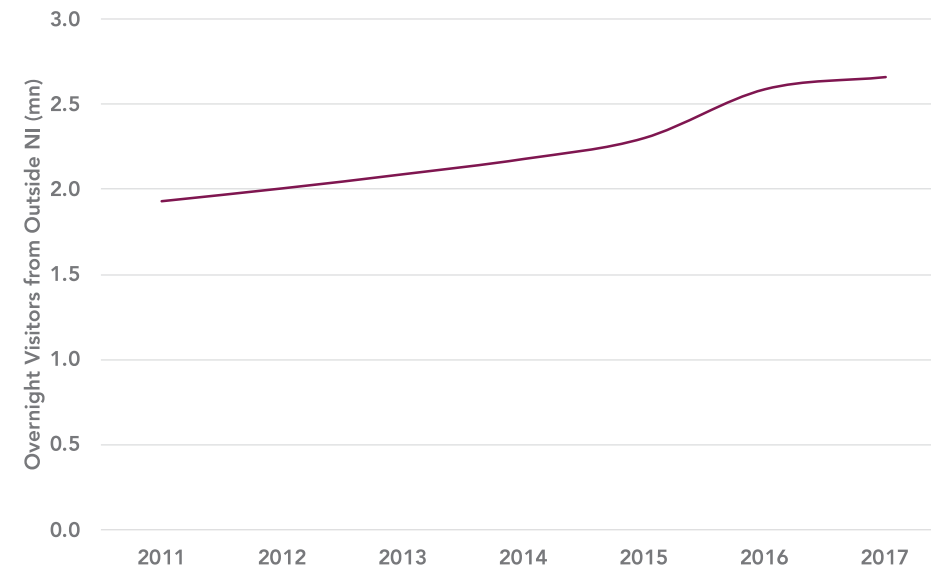


Figure 6.1 – Onshore Wind Capacity in Northern Ireland, 2011-2017



Source: Department for Business, Energy and Industrial Strategy (2018), Renewable electricity capacity and generation

Figure 6.2 – Overnight Visitors to Northern Ireland, 2011-2017



Source: NISRA (2018), Northern Ireland Annual Tourism Statistics.

#### 6.4.2 Fáilte Ireland (2012), Visitor Attitudes on the Environment: Wind Farms<sup>31</sup>

In 2012 Fáilte Ireland, the agency representing tourism in the Republic of Ireland, undertook a survey of tourists at tourist offices and attractions around the country to assess visitor attitudes to windfarms. Although the survey did not include visitors to Northern Ireland, it is likely that the types of tourists may be similar and therefore that the findings are broadly applicable.

<sup>31</sup> Fáilte Ireland (2012), Visitor Attitudes on the Environment: Wind Farms

When asked whether the likelihood of further windfarms would affect the decision to visit Ireland again 43% said it would have no impact and 28% said it would have a positive impact, a higher proportion than the 24% that said it would have a negative impact. However, as this is based on perceptions of future behaviour, rather than actual behaviour, it may not be indicative.

The majority of all visitors reported that they either had a positive response (47%) or a neutral response (23%), while 30% had a negative response. However, those who had seen a windfarm on their trip had a less negative perception than those that hadn't.

Fáilte Ireland conclude that a balance should be struck between maintenance of landscape character and scenery as a tourism asset, and reducing greenhouse gas emissions.

#### 6.4.3 Wind Farms and Tourism: Evidence from Scotland

Although there has been limited research undertaken to date on windfarms and tourism in Northern Ireland, a more substantial body of research exists in Scotland, where there has also been growth in onshore wind capacity and visitor numbers.

Although now somewhat dated, the Moffat Centre published one of the most comprehensive studies of the relationship between windfarms and tourism in 2008<sup>32</sup>. This included a review of international literature, an intercept survey of tourists in selected study areas in Scotland, an internet survey and Geographical Information Systems (GIS) study about the effect on accommodation. Overall, the study limited impacts of windfarms on tourism and that increasing onshore wind capacity was not incompatible with higher visitor numbers.

In 2011, VisitScotland commissioned a survey<sup>33</sup> that found that for about 80% of visitors their decision to holiday in the UK would not be affected by the presence of a windfarm. In 2012, a Scottish Parliament Committee concluded

“Whilst care always needs to be taken in terms of the planning process and decisions on the siting of individual projects in areas popular with tourists and in our more rural and remote rural areas, no witness has provided the Committee with robust, empirical evidence, as opposed to anecdotal comment and opinion, that tourism is being negatively affected by the development of renewable projects.”<sup>34</sup>

In 2017, BiGGAR Economic published a study<sup>35</sup> on the relationship between windfarms and tourism employment. The conclusion of this study was that published national statistics on employment in sustainable tourism demonstrate that there is no relationship between the development of onshore windfarms and tourism employment at the level of the Scottish economy, at the local authority level, nor in the areas immediately surrounding windfarm development.

<sup>32</sup> Glasgow Caledonian University/Moffat Centre (2008), The Economic Impacts of Wind Farms on Scottish Tourism

<sup>33</sup> VisitScotland (2012), Wind Farm Consumer Research

<sup>34</sup> Scottish Parliament Economy, Energy and Tourism Committee (2012), Report on the achievability of the Scottish Government's renewable energy targets

<sup>35</sup> BiGGAR Economics (2017), Wind Farms and Tourism Trends in Scotland



#### 6.4.4 Summary of Evidence

Evidence from Ireland and Scotland suggests that there is a limited or negligible effect of increased onshore wind capacity on tourism. A minority of visitors say that the presence of windfarm would have a negative effect on their decision making, but the majority say that it would have no impact or a positive impact.

Research from Scotland suggests that there is no evidence to suggest that there has been a negative effect on tourism, and that increased onshore wind capacity is not incompatible with increased tourism numbers. In Northern Ireland the number of overnight visitors has increased steadily in recent years, as the installed capacity of onshore wind has also increased.

### 6.5 Assessment of Tourism Effects

#### 6.5.1 Methodology

The review of tourism and recreation assets was undertaken using the significance criteria outlined in Table 6.4.

Table 6.4 – Significance Criteria

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

Source: BiGGAR Economics Analysis

#### 6.5.2 Local Tourism Attractions

The key sites and attractions along the Causeway Coast are all more than 10 km away from the Development and as such they lie outside the boundary area. The Development will not be visible from the vast majority of the key tourist sites along the coast and the impact on these attractions will therefore be negligible.

The Cam Forest is adjacent to the Development, and is mainly of local importance. Current activities that take place in the forest, such as walking and horse riding will not be affected by the Development. Therefore, the effect on the Cam Forest is assessed as **Negligible**.

The Gortnamoyagh Forest is 3km to the south-east and is mainly of local importance. There are no recreational facilities, although there are paths, and some sections of the forest may be restricted as commercial logging takes place. Though there may be limited views, the overall effect has been assessed as **Negligible**.

Garvagh Forest is 8km to the south-east of the Development. Due to its distance from the Development and nature of the landscape, it is not expected that there will be visibility from most of the Forest. Therefore, the effect on the Garvagh Forest has been assessed as **Negligible**.

Roe Valley Country Park near Limavady which lies approximately 6km west of the Development is a popular and well visited site. Due to its distance from the Development and nature of the landscape, a valley, and foliage along the River Roe, the Development is not expected to be visible. Therefore, the effect on the Country Park has been assessed as **Negligible**.

The Ulster Way currently passes through the site, but it is expected that due to the construction there will be temporary disruption to the route. The developer has liaised with the Access Officer at Causeway Coast and Glens Borough Council, and it is planned to temporarily divert the walking route during construction, after which it will revert back to passing through the site. Given the measures that the developer will put in place and that the Ulster Way already passes through the site, which is seen as an interesting addition to the route, the effect has been assessed as **Negligible**.

There are also a small number of walks nearby. Given the urban and health-focused nature of the Highway to Health walk in Limavady the effect has been assessed as **Negligible**. Similar to the Roe Valley Country Park, much of which is nestled within a valley, Boyd’s Riverside Walk is not expected to have visibility and therefore the effect has been assessed as **Negligible**. Given its distance from the Development and its local appeal, the effect on the Tannyranny walk near Dungiven has been assessed as **Negligible**. The effect on National Cycle Route 93 is also expected to be **Negligible** due to its distance from the Development.

#### 6.5.3 Local Tourism Accommodation

The local tourism accommodation providers within a 10km radius of the Development have been considered.

The closest accommodation provider is The Views, which is self-catering and lies adjacent to the Development. It was built in June 2012 and operates alongside the existing Rigged Hill Windfarm. Due to its proximity and the larger scale of the proposed turbines, the overall effect has been assessed as **Minor**.

The Weefield B&B and Rockhill B&B lie to the east of the Development near Ringsend on the other side of the Cam Forest. Due to the relative distance and screening by the Cam Forest, it is not expected that there will be any visibility. The effect has been assessed as **Negligible**.

Carrick Lodge B&B and Roe River Cottage lie on the B68 to the west of the Development and are advertised on the basis of their proximity to the coast and to the Roe Valley. Though there may be views of the Development it is not expected that visibility will affect their attractive features. The effect has been assessed as **Negligible**.

The Roe Park Resort to the west of Limavady incorporates a golf course and spa facilities. These are all around 7-8 km from the Development. Due to distance from the Development and the intervening landscape, which includes part of Limavady and the eastern bank of the Roe Valley, the overall effect has been assessed as **Negligible**.

The Drenagh country estate is also at a distance of around 7km from the Development. Given the distance from the Development and the nature of the grounds, which include a wooded area to the south-east, visibility of the Development is expected to be limited. The overall effect has been assessed as **Negligible**.

The remaining accommodation providers in and around Limavady, Crindle, Ballykelly and Dungiven are at a greater distance from the Development. Due to the nature of the intervening landscape and relative distance from the Development, the effect has been assessed as **Negligible**.

## 6.6 Summary of Tourism Assessment

Tourism is an important sector of the economy in Northern Ireland, which is growing steadily. The Causeway Coast and Glens continues to attract a large share of the visitors, primarily drawn by attractions on the northern coast such as the Giant's Causeway World Heritage Site.

Research from Ireland and Scotland suggests that there is a limited or negligible effect of windfarms on tourism. An analysis of tourism assets in the local area suggests that the Development will have no significant effect on the local tourism economy.

## 7 SUMMARY

Rigged Hill Windfarm is located in the Causeway Coast and Glens LGD, approximately 6km south-east of Limavady. It would contribute to national strategies, which propose investment in energy infrastructure and a target of 40% of electricity from renewable sources by 2020. Future energy targets are likely to be higher with some bodies calling for a fully decarbonised energy sector by 2050, and others highlighting the important role that repowered sites can play in increasing the deployment of renewable energy.

The Causeway Coast and Glens Council area contains around 7.7% of the population of Northern Ireland and around 5.4% of employee jobs. The area is sparsely populated and has a higher proportion of the population aged over 65 than Northern Ireland. Its population is forecast to contract slightly by 2041, while the national population is expected to grow. The economic activity rate in the area is below average for Northern Ireland and the unemployment claimant count rate is higher than average. The local economy has relatively low productivity and employment is concentrated in tourism-related industries.

The economic impact of the proposed repowering of Rigged Hill Windfarm has been assessed based on an analysis of the local economy and the experience of what has happened at other onshore windfarms throughout the UK. The result of the economic analysis suggests that during the development and construction phase the Development is expected to contribute up to:

- £2.1 million and 16 job years in the Causeway Coasts and Glens LGD; and
- £9.4 million and 73 job years in Northern Ireland.

During each year of operation and maintenance, the Development could contribute up to:

- £0.4 million and 3 jobs in the Causeway Coasts and Glens LGD; and
- £0.5 million and 4 jobs in Northern Ireland.

A variety of measures were identified that could maximise the economic impacts associated with the Development. These include early engagement measures such as meet-the-supplier events, forming partnerships with regional bodies, such as the Causeway Coasts and Glens Borough Council and including local content as a criteria in the tender process.

Wider benefits associated with the Development include:

- creating a community benefit fund of at least £28,000 annually, which would be worth £0.8 million over 30 years, which could be administered by a development trust;
- funding projects in the local area, including those identified by Drumsum in its village plan, which could improve community infrastructure, support new services and expand village infrastructure; and
- an estimated contribution to non-domestic rates of around £0.4 million per year or £13.1 million over 30 years, although this will depend on the actual load factor.

A review of the economic impact literature to date has found that there is limited evidence to suggest that there is a link between the development of windfarms and tourism. An analysis of nearby visitor attractions, recreational routes and visitor accommodation suggests that there is unlikely to be a significant effect on the local tourism economy as a result of the Development.