

Environmental Impact Assessment

Sandy Knowe Wind Farm Extension

Chapter 12: Socio-economics, Tourism and Recreation

ERG UK Holding Ltd



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Chapter Contents

12 Socio-economics, Tourism and Recreation	2
12.1 Introduction	2
12.2 Methodology and Approach	2
12.2.1 Legislation, Planning Policy and Guidance	2
12.2.2 Consultation	7
12.2.3 Assessment Methodology	8
12.3 Baseline Conditions	10
12.3.1 Desk Based Research and Data Sources	10
12.3.2 Population	11
12.3.3 Economic Activity and Employment	12
12.3.4 Deprivation	13
12.3.5 Tourism and Recreation	14
12.4 Assessment of Effects	18
12.4.1 Socio-economic Effects	18
12.4.2 Tourism and Recreation Assessment of Effects	22
12.5 Assessment of Cumulative Effects	28
12.6 Mitigation Measures	29
12.7 Residual Effects	29
12.8 Summary and Statement of Significance	30
12.9 References	31

Tables

Table 12-1: EIA Scoping Opinion – Socio-economics, Recreation and Tourism	8
Table 12-2: Population Structure	11
Table 12-3: Population Projections – 2043	11
Table 12-4: Development and Construction Expenditure by Study Area	12
Table 12-5: Industrial Structure, ranked by highest concentration within Dumfries and Galloway	13
Table 12-6: Scottish Index of Multiple Deprivation by Quintile, 2020	14
Table 12-7: GVA and Employment in the Sustainable Tourism Sector	14
Table 12-8: Visits and Spend of Tourists	15
Table 12-9: Most Visited Attractions, Dumfries and Galloway 2019	16

Chapter Contents

Table 12-10:	Weighted Average Spend per MW on Windfarms in the UK	18
Table 12-11:	Weighted Average Development Spend by the Proposed Development	19
Table 12-12:	Turnover and GVA - Development Phase	19
Table 12-13:	Weighted Average Construction Spend by the Proposed Development	19
Table 12-14:	Turnover and GVA - Construction Phase	20
Table 12-15:	Weighted Average Operational Spend by the Proposed Development	20
Table 12-16:	Turnover and GVA - Operational Phase	22
Table 12-17:	Summary and Statement of Significance	30

Figures

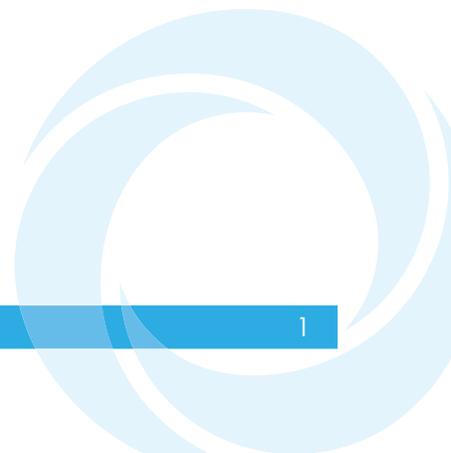
Figure 12-1: Core Paths and Public Rights of Way within 15km

Glossary of Terms

Term	Definition
The Applicant	ERG UK Holding Limited
The Agent	Atmos Consulting Limited
Environmental Impact Assessment	Environmental Impact Assessment (EIA) is a means of carrying out, in a systematic way, an assessment of the likely significant environmental effects from a development
Environmental Impact Assessment Regulations	The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 (EIA Regulations)
Environmental Impact Assessment Report	A document reporting the findings of the EIA and produced in accordance with the EIA Regulations
The Proposed Development	The Sandy Knowe Wind Farm Extension
The Proposed Development Footprint	The area within which the Proposed Development will be located
The Proposed Development Site	The full application boundary including Sandy Knowe Wind Farm and Sandy Knowe Wind Farm Extension

List of Abbreviations

Abbreviation	Description
EIA	Environmental Impact Assessment
EIAR	Environmental Impact Assessment Report
ECU	Energy Consents Unit
ONS	Office for National Statistics
NRS	National Records of Scotland
SIMD	Scottish Index of Multiple Deprivation
NPF	National Performance Framework
NPF3	National Planning Framework 3
NPF4	National Planning Framework 4
REP	Regional Economic Partnership
SOSE	South of Scotland Enterprise
DGC	Dumfries and Galloway Council
AGER	Advisory Group on Economic Recovery
GVA	Gross Value Added
LVIA	Landscape & Visual Assessment
MW	Megawatt



12 Socio-economics, Tourism and Recreation

12.1 Introduction

This Chapter of the EIA Report assesses the likelihood of significant socio-economic effects of the Proposed Development on the surrounding area, with regards to local residents, tourism, and recreation.

The relevant policy context and methods used to assess the potential effects are described together with the baseline conditions that exist in the area in the absence of the Proposed Development. Potential effects of the Proposed Development are discussed, together with possible cumulative effects in combination with other developments.

12.2 Methodology and Approach

12.2.1 Legislation, Planning Policy and Guidance

There is no relevant legislation or guidance available on the methods that should be used to assess the socio-economic effects of a proposed onshore wind farm within an EIA.

Similarly, there is no formal guidance on the methods that should be used to assess the effects that wind farm developments may have on tourism and recreation/leisure interests. The assessment is based on best practice and draws on experience in assessing the socio-economic, tourism and recreation impacts of onshore wind developments across Scotland.

The following paragraphs summarise relevant policy in relation to socio-economic and tourism effects. Further detail on planning, energy and climate change policy can also be found referenced in Chapter 4: Planning and Energy Policy.

Scottish Planning Policy

Scottish Planning Policy (Scottish Government, 2014a) articulates four desired planning outcomes. Of particular relevance to the Proposed Development are:

- Outcome 1: A successful, sustainable place;
- Outcome 2: A low carbon place; and
- Outcome 3: A natural, resilient place.

The SPP introduces a presumption in favour of development that contributes to sustainable development and sets out the guiding principles by which this will be achieved. These principles include the support of climate change mitigation and give an emphasis to the economic benefit of proposals.

The SPP recognises that good planning plays an important role in '*creating opportunities for people to contribute to a growing, adaptable and productive economy*'. It also notes that allocating '*sites and creating places that are attractive to growing economic sectors, and enabling the delivery of necessary infrastructure, planning can help provide the confidence required to secure private sector investment, thus supporting innovation, creating employment and benefiting related businesses*'.

SPP also makes clear the Ministers desire to see net economic benefit realised. Paragraphs 28 and 29 of the SPP state *'The planning system should support economically, environmentally and socially sustainable places by enabling development that balances the costs and benefits of a proposal over the longer term. The aim is to achieve the right development in the right place; it is not to allow development at any cost. This means that policies and decisions should be guided by the following principles.... giving due weight to net economic benefit'*.

The policy principles concerning business and employment are set out in paragraph 93 of the SPP and reference the need for the planning system to *'give due weight to net economic benefit of proposed development'* when considering planning applications.

Similarly, Paragraph 169 states *'Proposals for energy infrastructure developments should always take account of spatial frameworks for wind farms and heat maps where these are relevant. Considerations will vary relative to the scale of the proposal and area characteristics but are likely to include... net economic impact, including local and community socio-economic benefits such as employment, associated business and supply chain opportunities.'*

Following publication of the SPP, Scottish Ministers committed to developing further advice to assist developers and planning authorities in assessing and giving due weight to the net economic benefit of proposed development.

Scottish Government Draft Advice on Net Economic Benefit and Planning

The Draft Advice on Net Economic Benefit and Planning (Scottish Government, 2016) states the importance of demonstrating the net economic benefit of a proposed scheme, highlighting the importance of taking economic benefits into account when determining a planning decision. The meaning of 'net economic benefit' is described as the difference between the estimated economic position where the development proceeds and the position if the proposal does not go ahead.

Advice is provided on the methodology to be used when modelling economic benefits and it acknowledges that *"assessing the additional benefit from a proposal will usually involve making some assumptions, and is therefore not an exact science. It is important that the level of detail of any assessment is kept proportionate to the likely scale of the net economic benefit, and that assumptions made are completely transparent, evidence-based and as accurate as possible"*.

National Performance Framework

Scotland's National Performance Framework (NPF), first published in 2018, sets out the ambitions of the Scottish Government to provide a vision for national wellbeing across a range of economic, social and environmental factors (Scottish Government, 2018). The framework includes 'increased well-being' as part of its purpose and combines measurement of how well Scotland is doing in economic terms with a broader range of well-being measures.

The NPF is designed to give a more rounded view of economic performance and progress towards achieving sustainable and inclusive economic growth and well-being across Scotland. The aims for Scotland set out in the NPF are to:

- Create a more successful country;

- Give opportunities to all people living in Scotland;
- Increase the well-being of people living in Scotland;
- Create sustainable and inclusive growth; and
- Reduce inequalities and give equal importance to economic, environmental and social progress.

It sets out and reports against outcomes and indicators which illustrate the progress Scotland is making in achieving the aims of the NPF. The Proposed Development has potential to support the achievement of the national outcomes, making a contribution to advancing the development of a competitive, inclusive and sustainable economy in Scotland.

Scotland's National Strategy for Economic Transformation 2022

This is the Scottish Government's statement of ambition for economic recovery following the COVID-19 pandemic.

It sets the ambition of the next ten years as a time of huge change and 'extraordinary opportunity' and promotes Scotland as a nation with competitive advantages in the new industries generated by technological change, scientific advance and our response to the climate and nature crises.

The strategy deliberately focuses is on five policy programmes with the greatest potential benefit, including to *"strengthen Scotland's position in new markets and industries, generating new, well-paid jobs from a just transition to net zero"*;

The transition to net zero is seen not just an environmental imperative but an economic opportunity - one where Scotland will become world leading. The identified opportunities for this competitive advantage include the construction and development of on- and off-shore energy generating technologies.

South of Scotland Regional Economic Strategy

South of Scotland Enterprise (SOSE), which covers Dumfries and Galloway, works to advance the development of sustainable and inclusive economic growth in the South of Scotland region.

In June 2021, the South of Scotland Regional Economic Partnership (REP) and SOSE published a draft of their Regional Economic Strategy, outlining the aims of the organisations for the South of Scotland, including:

- Supporting fairer, more meaningful work;
- Creating affordable, desirable and energy-efficient homes and widening choice;
- Improving the health and welfare of those who are most disadvantaged within the region;
- Building the capability and capacity of social enterprises and the Third Sector;
- Investing in social infrastructure and education to enhance life prospects;
- Putting the environment and sustainability at the forefront of our growing economy;
- Protecting, enhancing and enjoying our abundant natural capital; cultural and heritage assets and vibrant arts and festivals backdrop; and
- Building wealth which benefits the local economy, our communities and people (Community Wealth Building).

The strategy outlines the vision of the South of Scotland in 2031 as a region which is green, fair, and flourishing. As part of their aim to become a green economy leader, the REP and SOSE will work to support piloted to approaches to land use and natural capital, encourage a growing circular economy enabling local green jobs and support enhanced, future-proofed energy networks and zero carbon technologies.

The strategy also highlights the organisations' priorities of growing and diversifying the economy, in part through building upon the region's sectoral strength in the generation of renewable energy.

The strategy also sets the priority of utilising the economic opportunities presented by the transition to net zero, noting that the region is well placed to develop renewable heat and power to support Scotland's net-zero targets and create green jobs. This will also contribute to the goal of addressing the demographic challenges of an ageing population and the need to attract and retain younger adults.

Borderlands Inclusive Growth Deal

In 2021, the Borderlands regions (Carlisle City, Cumbria County, Dumfries and

Galloway, Northumberland County and Scottish Borders), created a Growth Deal with the ambition of supporting the included regions to reach their full potential (UK and Scottish Governments, 2021). The deal outlines four strategic aims of the Borderlands Region:

- Enabling Infrastructure: investing in the infrastructure required to support improvements in connectivity within the region, helping people access the region and addressing perceptions of poor connectivity;
- Improving places: revitalising places across the Borderlands region to attract people to live, work and visit;
- Supporting Business, Innovation and Skills: stimulating business growth to create a more diverse regional and rural economy; and
- Encouraging Green Growth: capitalising on green credentials of the Borderlands region to facilitate decarbonisation and the creation of new high value jobs supporting low carbon energy generation and carbon reduction.

Climate Change Plan Update - Economic Impact of COVID-19 Recovery

The COVID-19 Pandemic has had a major detrimental impact on the local, regional and national economy. It will be some time until the longer-term consequences have become apparent, although it is already clear that the pandemic has resulted in structural economic changes.

By the end of June 2021, 3,700 employees in Dumfries and Galloway were on the Coronavirus Job Retention Scheme and 2,700 were on the Self-Employment Income Support Scheme (HMRC, 2021). This is equivalent to around 9.6% of total employment in the region.

The need for policies to promote economic recovery will therefore need to take account of specific needs of areas where the economy has been affected, as well as local opportunities for recovery.

In December 2020, the Scottish Government published an update to its 2018-2032 Climate Change Plan to set out its pathway to the new targets set in the Climate Change Act 2019 (Scottish Government, 2020c). The strategic document, which

outlines plans for Scotland's green recovery from the Covid-19 pandemic, demonstrates the commitment to a recovery which develops the transition to a carbon neutral economy.

Renewable Energy and Economic Recovery

Prior to the Covid-19 pandemic, the growth of the renewable energy sector was a priority for the Scottish Government in both the transition to a net zero economy and the growth of the Scottish economy. As the Government works to recover from the pandemic, the importance of the renewable energy sector as a driver of growth remains.

In 2020, the Advisory Group on Economic Recovery (AGER) to the Scottish Government, published a report outlining recommendations on how Scotland could best recover following the Covid-19 pandemic (AGER, 2020). The report highlighted four significant areas of focus; business, education and skills, equalities and the environment, with recommendations including the prioritisation and delivery of green investment, enabling the creation of a more circular economy which would reduce negative impacts on the environment while leveraging Scotland's natural advantages, such as the availability of renewable energy from wind, wave and tidal power.

In the response published by the Scottish Government, it outlines how it intends to apply the AGER's recommendations, supporting a recovery from the pandemic which supports Scotland's economy and develops the transition to an economy which meets environment objectives (Scottish Government, 2020a).

The actions the Scottish Government are taking is divided across six main themes to secure a jobs-focused and socially-just economic recovery, these being:

- Protecting jobs by supporting business recovery and sustainable, green growth;
- Creating jobs through business engagement and a partnership approach;
- Supporting access to good quality jobs through employment, skills and training;
- Boosting local job creation through resilient people, communities and places;
- Creating jobs and a just transition through investment-led sustainable growth; and
- Monitoring our progress and outcomes.

It is noted in the plan that 'better planning and regulation' is required to support the economic recovery. The plan recognises that planning and regulatory systems will be crucial in supporting investment and growth as part of the economic recovery, while maintaining high standards. The Scottish Government is currently taking forward the changes introduced by the Planning (Scotland) Act 2019. This focus on implementation of the changes already introduced alongside improved practice, is seen as the most immediate way of improving the planning service and ensuring that it supports recovery effectively. In the case of this site, planning policy is already supportive of the principal of development.

Tourism Policy Context

In terms of relevant tourism policy, the Scottish Tourism Alliance developed The National Tourism Strategy 2030 (Scottish Tourism Alliance, 2020) which confirms the importance of tourism to Scotland's economy and emphasises the resilience of the tourism industry since the start of the Covid-19 pandemic in 2020. However, the strategy cautions that Scotland must remain competitive, by developing and changing its products and

marketing in order to improve the quality of the customer experience and increase sales.

The vision is 'Together we will grow the value and positively enhance the benefits of tourism across Scotland by delivering the very best for our visitors, our businesses, our people, our communities and our environment'.

As stated in VisitScotland's Position Statement on Wind Farms (VisitScotland, 2014), they are not a statutory consultee. 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.

VisitScotland's Position Statement of Wind Farms states that there is a mutually supportive relationship between renewable energy developments and sustainable tourism. VisitScotland is aware that some groups are concerned by the potential impact of wind farm developments on tourism; however, their own position statement states that independent research '*suggests that wind farms have a limited impact on visitors' decisions to holiday in Scotland*' (VisitScotland, 2014, pg 2). The Scottish Parliament's Energy Committee (Scottish Parliament, 2012) also found '*no evidence that wind farms have a negative effect on the tourism industry*'.

The regional tourism strategy for Dumfries and Galloway was established in 2016 (Dumfries and Galloway Council, 2016). The strategy aims to make Dumfries and Galloway the destination of choice for quality, value and memorable experiences, delivered by skilled and passionate hosts. It seeks to aid an increase in (1) the value of tourism, (2) the volume and length of stay from tourists and (3) jobs related to the tourism sector.

Scotland Outlook 2030 Responsible Tourism for a Sustainable Future

Scotland Outlook 2030 (Scottish Tourism Alliance, 2020) has been developed by Scottish Tourism Alliance, the Scottish Government, VisitScotland, Scottish Enterprise, Highlands and Islands Enterprise, and Skills Development Scotland. Over 2500 tourism leaders and stakeholders from the Scottish tourism industry have contributed to its development.

The four key priorities of Scotland Outlook 2030 are:

- *"Our Passionate People - We will attract, develop and retain a skilled, committed, diverse and valued workforce;*
- *Our Thriving Places - We will create and develop a sustainable destination together;*
- *Our Memorable Experiences – We will provide the very best, authentic and memorable experiences; and*
- *Our Diverse Businesses – We will build business resilience, sustainability and profitability."*

12.2.2 Consultation

The assessment process has been informed by consultation with the ECU including the Scoping Opinion (October 2021). A summary of the key consultation responses is described in Table 12-1.

Table 12-1: EIA Scoping Opinion – Socio-economics, Recreation and Tourism

Consultee	Scoping Comment	Where it is addressed in the EIA
ScotWays	Scotways anticipate that the applicant will take into account both recreational amenity and landscape impacts in developing their proposals for this site. We will consider these issues further should this scoping stage lead to a planning application.	Chapter 5: Landscape and Visual Impact Assessment has considered potential effects upon visual receptors. This includes people using long distance walking routes and national cycle routes across the Study Area and Core Paths within the more immediate site context. Landscape impacts have also been considered in Chapter 5. Recreational amenity has been considered as part of Section 12.4.2 of this Chapter.
Visit Scotland	VisitScotland strongly agrees with the advice of the Scottish Government –the importance of tourism impact statements should not be diminished, and that, for each site considered, an independent tourism impact assessment should be carried out. This assessment should be geographically sensitive and should consider the potential impact on any tourism offerings in the vicinity.	A tourism impact assessment has been provided in Section 12.4.2 of this Chapter.

12.2.3 Assessment Methodology

The methods applied within this assessment are based on established best practice, including methods from UK Government and industry reports. The assessment has employed appraisal techniques consistent with environmental impact guidance published by the Institute of Environmental Management and Assessment (IEMA, 2009) and draws on analysis and assumptions in research published by Renewable UK in 2015, Onshore Wind: Economic Impacts in 2014 (Renewable UK, 2015).

NatureScot has provided guidance on assessment of effects from wind farms on recreational amenity (NatureScot, 2018). This guidance has also been used to inform the approach.

The methodology adopted in this assessment has involved the following key stages:

- Consideration of the relevant baseline;
- Review of the Proposed Development for potential impacts;
- Evaluation of significance;
- Identification of mitigation measures, where required; and
- Assessment of residual impacts.

The scale of significance described below has been used to assess the potential and residual impacts of the Proposed Development against baseline conditions. The assessment process aims to be objective and quantifies impact as far as possible; however, some impacts can only be evaluated on a qualitative basis:

- **Negligible or No effect:** Either no change or no detectable change to a location, environment or sensitive receptor;

- **Minor:** A detectable but non-material change to a location, environment or sensitive receptor;
- **Moderate:** A material, but non-fundamental change to a location, environment or sensitive receptor; and
- **Major:** A fundamental change to a location, environment or sensitive receptor or in breach of recognised legislation, policy or standards.

In assessing significance, consideration is given to the national, regional and local baseline situation. The magnitude of the effect is determined in proportion to the area of effect relevant to each receptor. For the purpose of the assessment, a moderate or major effect is deemed to be 'significant' in terms of the EIA Regulations.

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

The effect of the Proposed Development on tourism and recreation is closely related to public attitudes to wind farms, however, a negative opinion does not necessarily result in a material change in recreational patterns. The relevant conclusions from the most recent studies are discussed later in this Chapter.

The research analysis used in the methodology (Renewable UK, 2015) considers economic effects of onshore wind development only, therefore the assessment has been undertaken based on the indicative generating capacity of the wind turbines on the Proposed Development (21.6MW). The construction and operation of the battery storage element of the Proposed Development is expected to bring negligible to low additional beneficial effect.

Spatial Scope

The spatial scope of the assessment of socio-economic effects is represented by the study areas of Dumfries and Galloway Council Area and Scotland.

The spatial scope for tourism and recreation effects is within 15km of the Proposed Development Footprint, in line with best practice. Tourist attractions include permanent fixtures (e.g. visitor centres, museums, castles and trails).

Important regional attractions attributed to Dumfries and Galloway are also identified due to their increased sensitivity, even if they lie outside of the 15km study area.

Temporal Scope

The temporal scope of the socio-economic assessment is during the following phases:

- Development; Project Development, Legal and Financial, planning and Environmental Impact Assessment costs;
- Construction; and
- Operational and maintenance.

Unless stated otherwise, tourism and recreation effects are considered based on the operational phase of the Proposed Development. Development and construction effects are scoped out of the assessment.

Effects associated with the construction phase of the Proposed Development are considered to be temporary and short-term. Effects associated with the operational phase of the Proposed Development are considered as long-term.

The Proposed Development could also have an effect on socioeconomic, tourism and recreation during the decommissioning phase. Due to the relatively young age of the industry, there is a lack of data around the potential economic impact of the decommissioning phase. Very few onshore wind projects to date have been fully decommissioned in the UK and, as a result, there is minimal data regarding the economic costs and impacts associated with this phase.

It is also difficult to predict what local economic conditions would be at the time of decommissioning (up to 40 years in the future) therefore arriving at evidence-based and accurate assumptions as recommended in guidance (Scottish Government, 2016) is not realistic. There is also evidence to suggest that in the long run wind farms are more likely to be re-powered rather than decommissioned. Should full decommissioning take place the effects are likely to be short term and similar in nature but substantially lesser than construction effects.

For these reasons, the potential effects associated with the decommissioning phase are not assessed further in this Chapter.

12.3 Baseline Conditions

12.3.1 Desk Based Research and Data Sources

A desk-based review of publicly available information has been undertaken to identify the key characteristics of the local economy, existing land use and tourism and recreational facilities in Dumfries and Galloway. Sources include:

- Office for National Statistics (ONS), 2021;
- National Records of Scotland (NRS), (2021);
- Scottish Index of Multiple Deprivation (SIMD) (2021);
- Scottish House Condition Survey (2020);
- Visit Scotland (2021a);
- Public Attitudes to Renewable Energy Tracker (DECC, 2021);
- A Report on the Achievability of the Scottish Government's Renewable Energy Targets (Scottish Parliament, 2012);
- The Economic Impacts of Wind Farms on Scottish Tourism (Glasgow Caledonian University, 2012); and
- Mountaineering Scotland's Survey of Members (Mountaineering Scotland 2014 and 2016).

The baseline socio-economic profile of the study area covers the aspects of:

- Population;
- Economic activity and employment;
- Deprivation; and
- Tourism and recreation.

12.3.2 Population

In 2020, Dumfries and Galloway had a population of 148,920, accounting for 2.7% of Scotland's total population (NRS, 2021). Table 12-2, Population Structure, illustrates that the population of Dumfries and Galloway is notably older than the national average. The region has a greater than average share of the population of pensionable age (25% compared to 18%) and a lower-than-average share of working age (59% compared to 65%). This is reflected in the mean age of the region, which is 50 compared to the national average of 42.

Table 12-2: Population Structure

	Dumfries and Galloway	Scotland
Total Population	148,920	5,466,000
% under 16	16%	17%
% of working age	59%	65%
% of pensionable age	25%	18%

Source: National Records of Scotland (2021).

Future Baseline

During the construction and operation period of the Proposed Development the population of the study areas is expected to change.

Population projections produced by National Records of Scotland (2020) anticipate that the population of Dumfries and Galloway will total 136,286 by 2043, a decrease of 8.5% from the population in 2020 (National Records of Scotland, 2020). Conversely, the population of Scotland is anticipated to grow by 2.0% during this time.

The trends currently experienced in the region's population structure are expected to continue over the next twenty years whilst becoming more pronounced. As shown in Table 12-3, by 2043, 34% of Dumfries and Galloway's population is anticipated to be of pensionable age.

This would mean that the population of Dumfries and Galloway would be significantly older than the population of Scotland as a whole, 25% of which is expected to be aged 65 or over by 2043.

The proportion of the population of working age in Dumfries and Galloway is expected to remain below average, at 53% compared to the Scottish average of 60%, representing a decrease of 6% from 2020 figures. The proportion of the population aged under 16 in Dumfries and Galloway is also anticipated to decrease from 16% in 2020 to 13% in 2043.

Table 12-3: Population Projections – 2043

	Dumfries and Galloway	Scotland
Total Population	136,286	5,574,819
% under 16	13%	15%
% of working age	53%	60%
% of pensionable age	34%	25%

Source: National Records of Scotland (2020).

12.3.3 Economic Activity and Employment

As shown in Table 12-4, Dumfries and Galloway have a lower-than-average economic activity rate (at 72.4% compared to the Scottish average of 76.8%) and a higher-than-average unemployment rate, at 6.1% compared to 4.4% (ONS, 2021a).

The economic activity rate in Dumfries and Galloway is the third lowest of all Scottish Local Authorities. It should be noted that the economic activity rate and unemployment rate for Dumfries and Galloway was more in line with the Scottish average in 2019. This would suggest that the area has been disproportionately affected by the Covid-19 pandemic.

Wages in the region are comparatively low, with residents of Dumfries and Galloway typically making a median annual gross wage of £26,892, compared to the Scottish average of £31,836 (ONS, 2021b). The gap between pay in the two study areas decreased between 2019 and 2020.

Table 12-4: Development and Construction Expenditure by Study Area

Contract Type	Dumfries and Galloway		Scotland	
	2020	2019	2020	2019
Economic Activity Rate	72.4%	77.4%	76.8%	77.5%
Unemployment Rate	6.1%	3.1%	4.4%	3.5%
Median Annual Gross Income* (£)	£26,892	£24,461	£32,836	£30,000

Source: ONS (2021a), *ONS (2021b).

In terms of the nature of employment in Dumfries and Galloway, Table 12-5 shows that the region has a significantly above average proportion of the workforce employed in the agriculture, forestry and fishing industries, accounting for approximately 12% of the population compared to the 3% it accounts for across Scotland as a whole.

The region also has an above average share of employees working in the health sector, accounting for approximately 18% of the workforce.

The construction sector is an area of employment that would be positively impacted by the Proposed Development should local workers and suppliers be utilised in the construction phase. Employment in the sector in Dumfries in Galloway is currently around the Scottish average of 5%. This is equivalent to approximately 3,500 jobs.

Employment in the private sector accounts for a lesser share of the workforce than for Scotland as a whole, with employment in information and communication; finance and insurance; professional, scientific and technical services; and business administration and support services totalling 9.8%, compared to the 21.4% the sectors account for across Scotland (ONS, 2021c).

Table 12-5: Industrial Structure, ranked by highest concentration within Dumfries and Galloway

	Dumfries and Galloway	Scotland
Health	17.9%	15.4%
Agriculture, forestry and fishing	11.9%	3.3%
Accommodation and food services	9.0%	8.2%
Retail	9.0%	9.0%
Education	7.5%	7.9%
Manufacturing	7.5%	6.5%
Construction	5.2%	5.5%
Professional, scientific and technical activities	4.5%	7.1%
Transport and storage	4.5%	4.1%
Arts, entertainment, recreation and other services	3.7%	4.4%
Business administration and support services	3.7%	7.8%
Public administration and defence	3.7%	6.0%
Wholesale	2.6%	2.4%
Motor trades	2.2%	1.9%
Property	1.5%	1.5%
Mining, quarrying and utilities	1.3%	2.5%
Information and communication	0.9%	3.3%
Financial and insurance	0.7%	3.2%
Total	67,000	2,602,000

Source: ONS (2021c).

12.3.4 Deprivation

The Scottish Index of Multiple Deprivation (SIMD) is a relative measure of deprivation which ranks each small area of Scotland in terms of deprivation across the domains of income, employment, education, health, access to services, crime and housing.

These areas can be ranked by quintiles (one fifth shares), with a small area in the first quintile being in the 20% most deprived areas in Scotland.

There are 201 small areas in Dumfries and Galloway, of which 9% are ranked in the most deprived quintile and 8% of are ranked in the country's 20% most deprived (Scottish Government, 2020b). As shown in Table 12-6, the majority of households in Dumfries and Galloway are ranked in the 2nd, 3rd and 4th quintiles, accounting for 82% of small areas in the region.

This suggests that the region, as a whole, is neither overly deprived nor overly affluent in regards to the domains considered in the analysis.

Table 12-6: Scottish Index of Multiple Deprivation by Quintile, 2020

	Dumfries and Galloway
1 (Most Deprived Quintile)	9%
2	24%
3	38%
4	20%
5 (Least Deprived Quintile)	8%

Source: Scottish Government (2020d).

Fuel poverty represents household deprivation in terms of the proportion of income a household spends on fuel; when this is more than 10% a household is said to be in fuel poverty.

In Dumfries and Galloway, 20,000 households are classified as being in fuel poverty, accounting for 29% of all households in the region, higher than the 24% level across Scotland. A further 15% of households in the region are classified as being in extreme fuel poverty (requiring more than 20% of income), again higher than the national figure of 12% (Scottish Government, 2020e).

12.3.5 Tourism and Recreation

Tourism Indicators

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

In 2019, the sustainable tourism sector in Dumfries and Galloway accounted for 7,000 jobs and in 2018, accounted for £78.1 million GVA as shown in Table 12-7. This represented 3.1% of Scotland's total employment in the sector and 1.9% of the country's total GVA generated by the sector in the respective years (Scottish Government (2021b)).

Table 12-7: GVA and Employment in the Sustainable Tourism Sector

	Dumfries and Galloway	Scotland
GVA (£ million)*	78.1	4,141.2
Employment (jobs)**	7,000	229,000

Source: Scottish Government (2021b). *2018 **2019.

Accommodation & food services as well as arts, entertainment, recreation & other services are considered tourism-related sectors. In the local area, there is a higher percentage of total employment in both sectors, suggesting that tourism is a bigger contributor to the local economy than the national average. These two sectors make up 17.6% of total employment in the local area (ONS, Business Register and Employment Survey, 2018).

Dumfries and Galloway also has a larger accommodation & food sector, percentage-wise, than the Scottish average. The arts, entertainment & recreational sector in Dumfries and Galloway is 0.7 percentage points smaller than the Scottish average. The two tourism-related sectors make up 13.5% of total employment in Dumfries and Galloway, compared to 12.5% in Scotland.

The combined tourism-related sectors in the local area and Dumfries and Galloway are proportionally larger than in Scotland overall.

Kantar produces annual statistics regarding tourism in Great Britain, including at Scotland's local authority level. Due to low sample data, figures for Dumfries and Galloway represent an average over a 3-year period (2017 – 2019) (Kantar, 2020a & 2020b).

As shown in Table 12-8, latest figures estimate that in 2019 there was a total of 6,456,000 visitors to Dumfries and Galloway, spending a total of £387 million in the local economy (Kantar, 2020a). This represented approximately 4% of all visitors to Scotland in 2019 and 3% of total tourist spend in the country that year.

Day visitors represented 88.6% of all visitors to Dumfries and Galloway in 2019, spending a total of £239 million (Kantar, 2020b). This indicates an average spend of £42 per day visitor, broadly in line with the national average of £43 per day. Domestic overnight visitors accounted for 10.8% of all visitors to the region and a lower than average than average spend per visitor of £187 (compared to £227 for Scotland as a whole).

International overnight visitors represented the remaining 0.6% of visitors to the region and spent an average of £472 per visit, lower than the average of £770 across Scotland (VisitScotland, 2021a).

Table 12-8: Visits and Spend of Tourists

	Dumfries and Galloway*	Scotland
Day Visits	5,721,000	133,600,000
Total Spend of Day Visitors (£)	£239,000,000	£5,777,000,000
Domestic Overnight Visits	699,000	14,100,000
Total Spend of Domestic Overnight Visitors (£)	£131,000,000	£3,200,000,000
International Overnight Visits	36,000	3,460,000
Total Spend of International Overnight Visitors (£)	£17,000,000	£2,665,000,000
Total Visits	6,456,000	151,128,000
Total Spend of Visitors (£)	£387,000,000	£11,642,000,000

Source: Kantar (2020a), Kantar (2020b), VisitScotland (2021a). *Average for 2017-2019.

Tourist Attractions

Data on visits to regional attractions are published each year by Glasgow Caledonian University, in partnership with the Moffat Centre Visitor Attraction Monitor.

As shown in Table 12-9, out of the top five free and top five paid attractions in 2019, the most visited in Dumfries and Galloway was the Gretna Green Famous Blacksmiths Shop

which attracted 772,448 visitors and is approximately 76km from the Proposed Development (Glasgow Caledonian University, 2019).

Other popular attractions include a series of forestry parks, gardens and historic sites. None of these attractions are located within 15km of the Proposed Development Footprint.

Table 12-9: Most Visited Attractions, Dumfries and Galloway 2019

Attraction	Number of Visitors	Approximate distance from Proposed Development Footprint (km)
Gretna Green Famous Blacksmiths Shop	772,448	76
Galloway Forest Park	385,437	35
Threave Garden	120,840	50
Mabie Forest	63,291	45
Dalbeattie Forest	55,042	55
Grey Mare's Tail	45,945	50
Forest of Ae	41,793	36
Caerlaverock Castle	39,143	56
Logan Botanic Garden	28,761	90
Devil's Porridge Museum	20,001	71

Source: Glasgow Caledonian University (2019).

Recreational Paths and Trails

Scotland's Great Trails and the National cycle routes are also considered. Those passing within 15km of the site boundary include the Southern Upland Way (SUW), which is one of Scotland's Great Trails stretching 212 miles from Portpatrick on the South-West coast to Cockburnspath on the East coast. The SUW is Britain's first official coast to coast long distance footpath, running across the country from the Atlantic Ocean to the North Sea.

No National Cycle Routes pass within 15km of the Proposed Development Footprint. The nearest National Cycle Route is Route Seven, which goes through Dumfries and closely follows the Solway coast and is therefore not in close proximity to the Proposed Development.

In addition to the Great Trails and National Cycle Routes, there are other core paths and trails that are used by recreational walkers and cyclists that pass within 15km of the Proposed Development Footprint. These are presented in further detail in the recreation section.

Core paths and the SUW are shown on Figure 12-1.

Local Attractions

Whilst none of the attractions identified in Table 12-9 fall within 15km of the Proposed Development Footprint, there are a number of local attractions which are situated within this distance. Some of these have been identified through analysis of VisitScotland's database and some were identified through the scoping process (VisitScotland, 2021b). These include:

- Sanquhar Tolbooth Museum, a local museum detailing Sanquhar's famous knitting tradition and mining history of the town, approximately 9km east of the Proposed Development;
- Sanquhar Golf Course, a local golf course located approximately 9km east of the Proposed Development;
- A' The Airts, a local arts and craft centre, located approximately 9km east of the Proposed Development;
- Upper Nithsdale Trail, a local walking and driving route located approximately 9km east of the Proposed Development;
- Crawick Multiverse, a local artland attraction, located approximately 9km east of the Proposed Development;
- Sanquhar Post Office, an operational 300 year old post office, the oldest post office in the world. Approximately 9km east of the Proposed Development;
- Striding Arches, an art exhibit. Located approximately 14km south of the Proposed Development;
- Sanquhar F.U.N Pool, a leisure and fitness centre located approximately 9km east of the Proposed Development; and
- Cumnock Factory Outlet, a shopping centre located approximately 14km north-west of the Proposed Development.

Accommodation

Tourism accommodation within 15km of the Proposed Development Footprint includes:

- Rigg House B&B in Kirkconnel, three bedroom B&B, sleeping up to six people;
- Queensberry Arms Hotel in Kirkconnel, seven bedrooms, four of which ensuite and three with a shared bathroom;
- Blackaddie House Hotel in Sanquhar, sleeping 14;
- Newark Farmhouse B&B in Sanquhar, sleeping eight;
- Nith Riverside Cottages in Sanquhar, three cottages, one sleeping two people and two sleeping four people;
- Nithsdale Hotel in Sanquhar, 14 ensuite rooms, sleeping up to 28 people;
- Fishing Cottage in Sanquhar, holiday home with two bedrooms, sleeping up to four people;
- The Granary in Sanquhar, holiday home with two bedrooms, sleeping up to four people;
- Waterside Cottage in Sanquhar, holiday home with two bedrooms, sleeping up to four people;
- Euchan River Cottage, holiday home with two bedrooms, sleeping up to four people;
- Lochside House and Spa in New Cumnock, three cottage suites sleeping up to four people in each;
- Meikle Westland Cottage in New Cumnock, two bedroom lodge, sleeping up to four people;
- Meikle Westland Lodge in New Cumnock, three bedroom lodge, sleeping up to six people;
- Nith Cottage in New Cumnock, two bedroom cottage, sleeping up to four people;

- Ben Nith Holiday Apartment, two bedroom holiday apartment, sleeping up to four people;
- The Old School in New Cumnock, a four bedroom hotel, sleeping up to eight people;
- Dumfries Arms Hotel in Cumnock, 26 ensuite rooms, sleeping up to 52 people;
- Royal Hotel in Cumnock, nine ensuite rooms, sleeping up to 18 people;
- Bed Barn in Cumnock, a two bed barn with hot tub, sleeping up to four people; and
- Wood Cabin in Cumnock, a one bedroom cabin, sleeping up to two people.

12.4 Assessment of Effects

12.4.1 Socio-economic Effects

Capital and Operational Expenditure (spend)

The assessment of the generation of employment opportunities, and Gross Value Added (GVA) has been undertaken based on the Renewable UK research, (RenewableUK, 2015). The capital and operational expenditure (spend) was for the Proposed Development have been estimated using the methodology in this research.

Tables 12-10 provides a summary of average spend per MW installed for each of the development, construction and operational phases of UK wind farms, drawn from the research study.

Table 12-10: Weighted Average Spend per MW on Windfarms in the UK

Project phase	Weighted Spend per MW
Development	£150,216
Construction	£1,318,875
Operation	£59,867

Source: Renewable UK, 2015

Predicted Development Phase Effects

The average weighted spend in the UK during the development phase of a wind farm is £150,216 per MW (RenewableUK, 2015).

Applying these assumptions to the Proposed Development with an indicative generating capacity of 21.6MW, results in an estimated total spend of £3,244,666 during the development phase. On average 13% of this is generally spent in the local area, with 59% spent within Scotland and overall the majority (98%) of spend retained within the UK. Table 12-11 summarises the estimated spend during the development phase for the Proposed Development across each area.

Table 12-11: Weighted Average Development Spend by the Proposed Development

Area	Weighted Spend (£)	Percentage (%) of Spend
Dumfries and Galloway	£427,226	13%
Scotland	£1,904,969	59%
UK	£3,193,884	98%
Outside UK	£50,782	2%
Total	£3,244,666	100%

Source: Renewable UK, 2015

The RenewableUK research indicates that there is one employee for every £103,036 and a GVA rate of 0.666. On this basis, it is estimated that up to 32 jobs are to be generated as a result of the development phase with a total GVA of over £2.1million).

Within Dumfries and Galloway, up to four jobs are estimated to be generated as a result of the Proposed Development and a GVA of almost £285,000. Within Scotland, the Proposed Development is expected to generate up to 18 jobs and a GVA of over £1.2million. Table 12-12 summarises the estimated jobs and GVA likely to be generated by the Proposed Development during the development phase.

Table 12-12: Turnover and GVA - Development Phase

Area	Estimated spend (£)	Estimated Jobs Generated (Rounded Down)	GVA (£)
Dumfries and Galloway	£427,226.4	Up to 4	£284,533
Scotland	£1,904,968.8	Up to 18	£1,268,709
UK	£3,193,884	Up to 31	£2,127,127
Outside UK	£50,781.6	Less than 1	£33,821
Total	£3,244,665.6	Up to 32	£2,160,947

Source: Renewable UK, 2015

The predicted level of effect from the development phase, both in employment and GVA terms, is considered to be negligible to minor beneficial in the context of the local economy and negligible but positive nevertheless on the national economy.

Predicated Construction Phase Effects

The average weighted spend in the UK during the construction phase of a wind farm is £1,318,875 per MW (RenewableUK, 2015).

Applying this assumption to the Proposed Development with an estimated generating capacity of 21.6MW, results in a total spend of almost £28.5million during the construction phase. As shown in table 12-13, over £10.3million is estimated to be spent in Scotland and over £3.4million in Dumfries and Galloway.

Table 12-13: Weighted Average Construction Spend by the Proposed Development

Area	Weighted Spend (£)	Percentage (%) of Spend
Dumfries and Galloway	£3,423,622	12%
Scotland	£10,371,931	36%
UK	£13,247,539	47%

Area	Weighted Spend (£)	Percentage (%) of Spend
Outside UK	£15,240,161	53%
Total	£28,487,700	100%

Source: Renewable UK, 2015

Research undertaken by Renewable UK indicates that there is one employee for every £137,942 of spend and a GVA rate of 0.432 during the construction phase. On this basis, it is estimated that up to 207 jobs will be generated as a result of the construction phase with a total GVA of over £12.3million.

Within Dumfries and Galloway, up to 25 jobs are estimated to be generated as a result of the Proposed Development and a GVA of almost £1.5million. Within Scotland, the Proposed Development is expected to generate up to 75 jobs and a GVA of over £4.4million. Table 12-14 summarises the estimated jobs and GVA likely to be generated by the Proposed Development during the construction phase.

Table 12-14: Turnover and GVA - Construction Phase

Area	Estimated Turnover (£)	Estimated Jobs Generated (Rounded Down)	GVA (£)
Dumfries and Galloway	£3,423,622	Up to 25	£1,479,005
Scotland	£10,371,931	Up to 75	£4,480,674
UK	£13,247,539	Up to 96	£5,722,937
Outside UK	£15,240,161	Up to 110	£6,583,749
Total	£28,487,700	Up to 207	£12,306,686

Source: Renewable UK, 2015

It is important to note that although construction impacts are temporary in nature they will last for the duration of the project (12 months), thereby ensuring meaningful benefit to the local economy. The expected scale of employment and GVA effect during construction are judged as being minor beneficial on both the regional and national economies. With local (Dumfries and Galloway) economic activity appearing to have been disproportionately negatively impacted since 2019 (possibly associated with the COVID pandemic) the local effects of the Proposed Development could be as much as major beneficial and potentially offer significant beneficial effect.

Predicted Operational Phase Effects

The average weighted cost in the UK during the operational phase of a wind farm is £59,867 per MW (RenewableUK, 2015).

Applying this assumption to the Proposed Development with an output capacity of 21.6MW, results in an estimated total spend of almost £1.3million. As shown on Table 12-15, almost £0.75million is estimated to be spent in Scotland and over £0.5million in Dumfries and Galloway.

Table 12-15: Weighted Average Operational Spend by the Proposed Development

Area	Weighted Spend (£)	Percentage (%) of Spend
Dumfries and Galloway	£545,270	42%
Scotland	£747,079	58%

Area	Weighted Spend (£)	Percentage (%) of Spend
UK	£1,123,027	87%
Outside UK	£170,100	13%
Total	£1,293,127	100%

Source: Renewable UK, 2015

Research undertaken by Renewable UK indicates that there is one employee for every £121,935 of spend and a GVA rate of 0.43 per year during the operational phase. On this basis, it is estimated that at least 10 jobs will be generated as a result of the operational phase with a total GVA of over £0.5million.

Within Dumfries and Galloway, at least four jobs are estimated to be generated as a result of the Proposed Development and a GVA of over £230,000. Within Scotland, the Proposed Development is expected to generate up to six jobs and a GVA of over £320,000. Table 12-16 summarises the estimated jobs and GVA likely to be generated by the Proposed Development during the operational phase.

Community Trust Expenditure

Renewable energy in Scotland presents an unprecedented opportunity for communities to share in the benefits of their local energy resources. In relation to the Proposed Development the relevant policy is contained in the Good Practice Principles for Community Benefits from Onshore Renewable Energy Developments (Scottish Government, 2019).

One of the key principles of national guidance is the promotion of a national rate for voluntary community benefits for onshore wind equivalent to £5,000 per MW per year, index linked for the operational lifetime of the development for community benefits packages.

The Applicant is proposing a community benefit package of up to £108,000 per annum over the 40 year life of the Proposed Development, based on a figure of £5,000 per MW. While this benefit package is a voluntary contribution by the Applicant, and its benefits are not a material planning consideration.

Shared Ownership

In addition to a community benefit package, the Scottish Government also encourages communities to take the chance to invest in local developments so that they have a direct stake in the energy being generated locally. The Scottish Government would like to see developers and communities explore the opportunities presented by increasing the level of community ownership in a development and encourages developers to consider an increased level of direct community involvement in the project.

Alongside the community benefit fund, the Applicant is also committed to offering local communities surrounding their developments an opportunity to take up an offer of part ownership of the project.

The Scottish Government has made formal policy commitment as set out within the Onshore Wind Policy Statement 2017, calling for half of all newly consented onshore renewable energy developments to have an element of community ownership by 2020 in line with helping the Scottish Government meet their 2 GW target of renewable energy by 2030.

In this instance, the Applicant has referred to the Scottish Government's Shared Ownership of Onshore Renewable Energy Developments Principles (2018). The document recognises the success of community benefits to date, recognising that value of a more flexible and holistic approach to community benefits discussions in the future, and places a greater focus on achieving a lasting legacy for local communities underpinned by a well-developed community action plan.

For Sandy Knowe Wind Farm, the Applicant reached an agreement with the Upper Nithsdale Community Trust to offer the equivalent of one turbine under community ownership. This would see the local communities receiving the equivalent of up to one turbine or 1/30th or 3.33% or 3.6MW of the development's net profits each year, potentially resulting in revenues in the order of £200,000 per annum. The Upper Nithsdale Community Trust have decided not to pursue this offer of shared ownership.

Table 12-16: Turnover and GVA - Operational Phase

Area	Estimated Turnover (£)	Estimated Jobs Generated (Rounded Down)	GVA (£)
Dumfries and Galloway	£545,270	Up to 4	£234,466
Scotland	£747,079	Up to 6	£321,244
UK	£1,123,027	Up to 9	£482,902
Outside UK	£170,100	Up to 1	£73,143
Total	£1,293,127	Up to 11	£556,045

Source: Renewable UK, 2015

The predicted level of effect from the operational phase, both in employment and GVA terms, is considered to be negligible to minor beneficial in the context of the local economy and negligible but positive nevertheless on the national economy.

12.4.2 Tourism and Recreation Assessment of Effects

Evidence on the Effect of Wind Farms on Tourism and Recreation

There have been a number of research exercises completed regarding the opinions of tourists towards wind farms. A summary of the most relevant and highly regarded research are included in this sub-section.

The Economic Impacts of Wind Farms on Scottish Tourism study by Glasgow Caledonian University (Glasgow Caledonian University, 2012) is perhaps the most comprehensive on the impacts of wind farms on tourism in Scotland, incorporating a literature review, an intercept survey of tourists currently in the studied areas, an internet survey, a Geographic Information Systems (GIS) study about the effect on accommodation and economic analysis of the results. The study covered the areas of Caithness and Sutherland, Perth Kinross and Stirling, Dumfries and Galloway, and the Scottish Borders.

The literature review, which particularly considered international studies, found that:

- There is little evidence of negative outcomes in sensitive areas, as they generally don't have wind farms approved;
- Although a significant number of individuals reported a loss of value, some thought that they enhanced the landscape;

- In Denmark, an established wind farm market, turbines are seen as a positive impact on the landscape;
- Hostility to wind farms decreases over time; and
- There is no evidence to suggest serious negative economic impacts of wind farms on tourists.

The research presented findings from a number of surveys, the review of secondary research suggests that on average around 91.3% of tourists surveyed were not discouraged from visiting an area containing a wind farm, when reviewing more recent and Scottish based results the figure is nearer 95%.

Overall, the study concluded, *'the findings from both primary and secondary research relating to the actual and potential tourism impact of wind farms indicate that there will be neither an overall decline in the number of tourists visiting an area nor any overall financial loss in tourism-related earnings as a result of a wind farm development.'*

The subsequent report from the Economy, Energy and Tourism Committee (Scottish Parliament, 2012) presented a number of findings, including the following points in regard to the relationship between renewable energy targets and tourism objectives: *'While some strongly held localised and anecdotal opinion exists, the Committee has seen no empirical evidence which demonstrates that the tourism industry in Scotland will be adversely affected by the wider deployment of renewable energy projects, particularly onshore and offshore wind.'*

The report also found: *'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 rural and wild land areas, no one has provided the Committee with evidence, as opposed to opinion'.*

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

Since the study by Glasgow Caledonia University was produced in 2012, there has been a significant growth in both the installed capacity of onshore wind energy in Scotland and the tourism economy. In 2008, there was 1.7 GW of installed wind energy capacity in Scotland, and by 2017, this had increased to 7.6 GW (BEIS, 2018). If there were to be negative impacts for the tourism sector associated with the development of onshore wind energy, they would have become apparent in this time period; however, this is not the case.

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

In response to criticism in 2015 that this research was now out of date, VisitScotland indicated that it planned to update the work and in a newspaper article a spokesperson said that: *'VisitScotland supports the drive for renewable energy and recognises the potential of Scotland's vast resource. It is well documented that the vast*

majority of potential visitors would not be discouraged from visiting Scotland on account of windfarm developments. Windfarms and other renewable energy projects are a part of the landscape in nearly every destination in the world' (Press and Journal, 2015).

In 2012, an inquiry was held by the Scottish Parliament's Economy, Energy and Tourism Committee into the achievability of the Scottish Government's renewable energy targets, which included a review of some of the evidence presented above. In the final report, entitled Report on the Achievability of the Scottish Government's Renewable Energy Targets (Scottish Parliament Economy, Energy and Tourism Committee, 2012) the committee concluded that:

'Several witnesses made assertions that there would be a negative impact on Scotland's tourism industry from renewable developments. However, these assertions were contradicted by research evidence from VisitScotland and others. Whilst care always needs to be taken in terms of the planning process and decisions on the siting of individual projects in areas popular with tourists and in our more rural and remote rural areas, no witness has provided the Committee with robust, empirical evidence, as opposed to anecdotal comment and opinion, that tourism is being negatively affected by the development of renewable projects. However, given the importance of this issue, the Committee recommends that VisitScotland and the Scottish Government continue to gather, and take account of, evidence from visitors to Scotland.'

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

However, the survey has attracted criticism, including from its own members, some of whom felt that it was difficult to express positive attitudes about wind farms and that questions were biased in favour of negative opinions. The questions were also asking about future behaviour, which may be different in practice. Furthermore, given Mountaineering Scotland's history of opposition to wind farms, it may not be considered independent, and the survey was conducted without independent oversight.

In 2016, Mountaineering Scotland conducted another survey (Mountaineering Scotland, 2016) of its members, which aimed to address some of the issues raised by the previous survey such as asking about current behaviour, and asking more neutral questions about wind farms, though as with the earlier study, it also lacked independent oversight, and therefore, may not be representative of broader groups of hill walkers or tourists more widely. There is also no reason to expect the survey results to be representative of tourists more generally.

When asked about the impact of wind farms on plans to walk and climb, the majority of respondents (75%) answered that wind farms have no effect on their plans, although some expressed that they may decrease their enjoyment. Some (22%) responded that they go as often, but avoid areas with wind farms, while 1% go to the mountains less. However, 2% of respondents said they go to the mountains more often and like to see wind farms. This would suggest that the development of wind farms in Scotland would have an overall positive impact on the number of people who participate in hill walking; however, it may change which parts of the country that recreational walkers utilise.

BiGGAR Economics published recent research (2021) into the relationship between the onshore wind and tourism sectors in Scotland. This study was undertaken to find empirical evidence of a relationship between the development of onshore wind farms and the tourism sector in Scotland. Their analysis of 44 wind farm case studies in Scotland found no evidence of a link between wind farm development and trends in tourism employment. The analysis of trends at the local authority area found no relationship between the growth in the number of wind turbines and the level of tourism-related employment.

A more recent, and regular, piece of research is issued quarterly by the Department of Energy and Climate Control (DECC), in their 'Public Attitudes Tracker' (DECC, 2021). In December 2021, this reported that support for renewable energy remained steady at 87%. Levels of support have remained between 74% and 85% since the question was first asked in March 2012. Opposition to renewable energy remained at its lowest point across the tracker at 1%, having previously fluctuated between 2% and 5% between March 2012 and June 2020. The current levels are the highest they have been in terms of support for renewables and the lowest opposing renewables since the survey commenced in 2012.

Overall, the research completed to date confirms that the tourism sector is not adversely affected by onshore wind farms. In fact, the tourism sector has continued to grow across Scotland as more wind farms have been developed.

National and Regional Attractions

Perhaps the largest and most notable tourist and recreational asset in Dumfries and Galloway is the Galloway Forest Park. It covers an area of 966km² and the closest edge of which is located approximately 3.3km west of the Proposed Development. The Park is known for its scenery, natural landscape, Dark Skies classification, and due to its visitor numbers, is considered an attraction of national importance. The boundary of the Proposed Development Footprint is located approximately 50km east of the core Dark Skies area within the Forest Park.

It is expected that the Proposed Development will have 'very little' effect on the behaviour of visitors/tourists that use the Park because the Proposed Development is outside the boundary of the Park, and due to its distance from the Core Dark Skies zone and the overall size of the Park. Therefore the significance of any impact is expected to be Negligible and Not Significant as per the EIA regulations.

The remaining Regional Attractions, ranging between 36km and 90km include:

- Gretna Green Famous Blacksmiths Shop (76km): 772,448 visitors;
- Galloway Forest Park (35km): 385,437 visitors;
- Threave Garden (50km): 120,840 visitors;
- Mabie Forest (45km): 63,291 visitors;
- Dalbeattie Forest (55km): 55,042 visitors;
- Grey Mare's Tail (50km): 45,945 visitors;
- Forest of Ae (36km): 41,793 visitors;
- Caerlaverock Castle (56km): 39,143 visitors;
- Logan Botanic Garden (90km): 28,761 visitors; and
- Devil's Porridge Museum 71km): 20,001 visitors.

These attractions are not considered to have their main characteristics affected by the Proposed Development, notably because they are at least in excess of 30km from the Proposed Development. Due to the expectation that the tourism assets' characteristic will not be affected it is expected that the Proposed Development will have 'very little' or 'no' effect on the behaviour of visitors/tourists that use these attractions.

Therefore, the significance of the effect is expected to be Negligible and Not Significant as per the EIA regulations.

Local Attractions

The ten identified Local Attractions within 15km include:

- Sanquhar Tolbooth Museum;
- Sanquhar Golf Course;
- A' The Airts;
- Upper Nithsdale Trail;
- Crawick Multiverse;
- Sanquhar Post Office;
- Striding Arches;
- Sanquhar F.U.N Pool;
- Cumnock Factory Outlet; and
- The Baird Institute.

These attractions are not expected to have their characteristics affected by the Proposed Development.

For this reason, it is expected that the Proposed Development will have 'very little' or 'no' effect on the behaviour of visitors/tourists that use these attractions.

Therefore, the effect from the Proposed Development is expected to be Negligible and Not Significant as per the EIA regulations.

Trails and Paths

The SUW passes 5.5 km south of the Proposed Development Footprint (Figure 12-1). Many walkers choose to walk shorter sections of the route and the Proposed Development would be located along the section between St John's Town of Dalry and Sanquhar. This section of the route (Section Four) hosts the second highest summit on the route at Benbrack and has views of Cloud Hill to provide a real upland hill walking experience. The section finishes in Sanquhar, which is a small town and has several shops for supplies, pubs and cafes. There are also the ruins of Sanquhar Castle.

The Proposed Development will be visible from the SUW, which passes a number of other sites of interest over the 344km. Along the SUW, visibility of other operational wind farm developments, such as Wether Hill, Blackcraig, Afton and Hare Hill, are also prevalent. This is discussed in Chapter 5 LVIA.

Historic visitor counts in 2008 recorded almost 119,000 annual visitors, from more than 30 different countries, and generating around £2.7m for the towns and villages located along the route. These figures are expected to be greater now. The route is marketed and promoted by the Southern Uplands Partnership and supports a wide range of local businesses, notably accommodation providers and food and drink businesses.

The SUW is considered to be of medium sensitivity due to its recreational, and economic, value; however, the effect assessed is considered to be minor and therefore, not significant in terms of the EIA Regulations as it is clear that the operational developments have had 'little' to 'no' impact on the number of walkers choosing to walk the route, and this section of the route, and so there is no reason to suggest the Proposed Development would negatively affect this.

There are a number of further Core Paths identified within the Study Area; however paths do not pass through the Proposed Development Footprint, there is one Core Path in proximity to the Proposed Development Footprint (Kirkconnel to Mynwhirn Hill) and another two Core Paths within 5km (Kirkconnel to Black Law and Bank Hill to Graystone Hill). However, the operation of the Proposed Development is not expected to alter their features or characteristics.

It is expected that the Development will have 'very little' or 'no' effect on the behaviour of visitors/tourists that use these paths.

Therefore, the effect assessed is considered to be not significant in terms of the EIA Regulations.

These paths and trails do not pass through the site boundary, and there will be no restrictions on access to these paths during the construction process. The operation of the Proposed Development is not expected to alter their features or characteristics, and it is expected that the Proposed Development will have 'very little' or 'no' effect on the behaviour of visitors/tourists that use these paths.

Therefore, the effect is assessed as Negligible and Not Significant as per the EIA regulations.

Tourism Accommodation

The tourism accommodation that is located nearest the Site is the self-catering accommodation located along the River Nith at Rigg House B&B and the small Queensberry Arms Hotel also in Kirkconnel, approximately 2.5km to the east of the Proposed Development Footprint.

Kirkconnel is known as a location to stay when fishing in the local area, and Rigg House is located in the middle of the Rigg Estate, which is set in approximately 4,000 acres of mature. The River Nith runs through the estate offering sea trout and salmon fishing in the 11 miles or so of the Upper Nithsdale beat. The Queensberry Arms Hotel is a small hotel with four ensuite rooms and three rooms with shared bathroom. It does not have a website, but it is noted on web searches that it is a suitable hotel for workers looking for accommodation.

Due to the proximity of the Proposed Development to Kirkconnel, these two properties are the most likely tourism receptors to experience any effects. These could be positive, increasing the demand for such facilities in the low season during the construction phase and negative, depending on the visual and other impacts that the Proposed Development would have on the properties, and subsequent demand. The empirical evidence on this topic would suggest that there is no data to suggest that wind farms have negative effects on tourism providers. There is likely to be beneficial effects for local accommodation providers at the construction, and during mature operation/maintenance phases, as there will be a requirement for workers to source

overnight accommodation, as well as purchase goods and services from local shops/suppliers.

The significance is expected to be Low and Not Significant as per the EIA regulations.

The remaining 18 accommodation facilities, ranging from 5km to 15km away, are not expected to have their characteristics altered by the Proposed Development during either phase of its life, and it is expected that the Proposed Development will have 'very little' or 'no' impact on the behaviour of visitors/tourists that use these facilities.

Therefore, the significance of the impact is expected to be Negligible and Not Significant as per the EIA regulations.

12.5 Assessment of Cumulative Effects

Construction Effects

The cumulative effects of the construction phase of the Proposed Development along with the cumulative sites as listed in Chapter 5: LVIA, Table 5-2 and shown in Figure 5-1-6a would generate additional construction related spend, employment and GVA. This scale of wind farm activity in the area suggests there is a substantial economic opportunity in terms of cumulative investment and resultant employment impacts as local capacity to take up the opportunities grow. The addition of the Proposed Development will positively contribute to this and could result in increased beneficial effects in terms of job creation and opportunities for local businesses. It is anticipated that when considering the schemes cumulatively, there would therefore be a Minor Beneficial effect on the economy at the Local Regional and National Level on socio-economic during construction.

Operational Effects

The cumulative effects of the operation phase of the Proposed Development along with cumulative sites as listed in Chapter 5: LVIA, Table 5-2 and shown in Figure 5-1-6a would generate additional operation related spend, employment and GVA.

This scale of wind farm activity in the area suggests there is a substantial economic opportunity in terms of cumulative investment and resultant employment impacts as local capacity to take up the opportunities grow. The addition of the Proposed Development will positively contribute to this and could result in increased beneficial effects in terms of job creation and opportunities for local businesses. It is anticipated that when considering the schemes cumulatively, there would therefore be a Minor Beneficial effect on the economy at the Local Regional and National Level on socio-economic during operation.

Community Trust Expenditure and Shared Ownership

The Applicant has in place a community benefit fund of up £432,000 per annum through Sandy Knowe Wind Farm.

There would be combined and additional benefits in relation to community benefit fund and shared ownership during the operation phase. However, the Upper Nithsdale Community Council have subsequently decided to not pursue shared ownership in the Proposed Development.

Tourism and Recreation Effects

Evidence on the effect of wind farms to tourism indicates that windfarms have a limited effect on visitors' decisions to holiday in Scotland. Therefore, when considering the cumulative effects, it is expected that these would be not significant. As such a Negligible cumulative effect on Tourism is predicted.

Wider Effects

It is anticipated that the Proposed Development will have wider beneficial effects that are not possible to quantify at this stage. Nevertheless these would be expected to have positive effects on the local and national economies including:

- **Local supply chain opportunities:** economic multiplier effects have not been included in the economic assessment due to the difficulty in accurately ascertaining their nature at the local and regional levels. However, it is worth noting DECC/Renewable UK research (2012) which estimated that the expenditure of workers who visit the local area benefit the accommodation and food service sector to the value of around £7,500 per MW constructed. The wider 'knock-on' impacts can in turn support the supply chain of other activities such as the spending habits of retail operations and accommodation providers;
- **Income effects:** the economic analysis has focused on the GVA effects of generated employment as this is the 'real' impact on the economy. However, it is worth noting that new employment will generate additional wages and salaries, much of which will be spent in the UK;
- **Exchequer effects:** the analysis has not attempted to estimate the additional exchequer effects as result of taxes borne (Corporation Tax, Employer National Insurance and Irrecoverable VAT) and taxes collected (Income Tax, Employee National Insurance and non-domestic business rates). These are additional financial benefits which will support the regional and national economies;
- **Effects on land owners:** there will be a financial transaction to the land owners which may support diversification and/or other spending in the local, regional and national economy; and
- **Community benefit funds and shared ownership offers:** The intended community benefit package for the Proposed Development includes a community benefit fund and an opportunity for the local community to invest in the proposed Development once operational. Income streams from this community benefits package could provide long term revenue to support local community initiatives. Depending on the initiatives and projects brought forward by the local community these could provide positive benefits to the local economy, local facilities and the general quality of life for local residents.

12.6 Mitigation Measures

No mitigation measures have been considered for the Proposed Development as there are no significant adverse effects anticipated.

12.7 Residual Effects

There are no significant adverse effects anticipated for the Proposed Development.

There are potential minor or negligible beneficial effects in relation to the development, construction and operation phases of the Proposed Development, both in employment and GVA terms in the context of local and national economies.

There are potential beneficial effects in relation to the operation phase of the Proposed Development, both in employment and GVA terms in the context of local and national economies, in the context of the cumulative sites (specifically Sandy Knowe Wind Farm).

12.8 Summary and Statement of Significance

The socio-economic impact during construction of the Proposed Development was assessed as minor beneficial in Dumfries and Galloway, and negligible beneficial in Scotland. The annual economic impacts related to operation were assessed as negligible beneficial for both study areas. All effects have been assessed as not significant.

Surveys of the public's attitudes to wind farms provide no clear evidence that the presence of wind farms in an area has a negative impact on local tourism (see section 12.4.2). 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, negative effects of the operational phase of the Proposed Development are predicted not to have a significant effect on tourism receptors in accordance with the EIA Regulations.

Table 12-17 provides a Summary and Statement of Significance for Socio-economic, Tourism and Recreation.

Table 12-17: Summary and Statement of Significance

Potential effect	Magnitude Effect	Assessed Effect	Statement of Significance
Socio-economic – Development Phase			
Spend	£3,244,666	Negligible to minor beneficial	Not Significant
Employment	Up to 32 jobs	Negligible to minor beneficial	Not Significant
GVA	£2,160,947	Negligible to minor beneficial	Not Significant
Socio-economic – Construction Phase			
Spend	£28,487,700	Minor beneficial	Not Significant
Employment	Up to 207 jobs	Minor beneficial	Not Significant
GVA	£12,306,686	Minor beneficial	Not Significant
Socio-economic – Operation Phase			
Spend	£1,293,127	Negligible to minor beneficial	Not Significant
Employment	Up to 11 jobs	Negligible to minor beneficial	Not Significant
GVA	£556,045	Negligible to minor beneficial	Not Significant
Tourism and Recreation			
National and Regional	Minimal / very little effect due to distance	Negligible	Not Significant

Potential effect	Magnitude Effect	Assessed Effect	Statement of Significance
Attractions	from Proposed Development		
Local Attractions	Attractions are not expected to have their characteristics affected by the Proposed Development. Therefore, minimal / very little effect	Negligible	Not Significant
Trails and Paths	Very little or no effect on the behaviour of visitors/tourists that use trails and paths as the Proposed Development is not expected to alter their features or characteristics.	Negligible	Not Significant
Tourism Accommodation	Likely to be beneficial effects for local accommodation providers within 2.5km of the Proposed Development at the construction, and during mature operation phases. The remaining 18 accommodation facilities, ranging from 5km to 15km away, are not expected to have their characteristics altered by the Proposed Development during either phase of its life	Negligible	Not Significant

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