

## 12 Socio-Economic, Tourism and Recreation

### 12.1 Introduction

12.1.1 This chapter considers the likely significant effects on socio-economics, tourism and recreation associated with the construction and operation of the proposed development. The specific objectives of the chapter are to:

- describe the current baseline;
- describe the assessment methodology and significance criteria used in completing the impact assessment;
- describe the potential effects, including direct, indirect and cumulative effects;
- describe the mitigation measures proposed to address any significant effects; and
- assess the residual effects remaining following the implementation of mitigation measures.

12.1.2 The assessment has been carried out by Simon Cleary, of BiGGAR Economics Ltd. Detail professional qualifications and any relevant code of practice have been followed, as set out where relevant within this chapter.

12.1.3 The chapter is supported by Technical Appendix 12.1: Socio-economic Strategic Context.

### 12.2 Legislation, Policy and Guidance

12.2.1 There is no national legislation, policy or guidance on the methods that should be used to assess the socio-economic effects of a proposed onshore wind farm development in the context of an Environmental Impact Assessment (EIA).

12.2.2 To estimate the economic effects, this assessment draws upon government and industry reports including a report published by RenewableUK and the then Department for Energy and Climate Change (DECC) in 2012<sup>1</sup> on the direct and wider economic benefits of the onshore wind sector to the UK economy, and a subsequent update to this report published by RenewableUK in 2015<sup>2</sup>.

12.2.3 The evidence collected in those studies is frequently reviewed and updated by BiGGAR Economics, based on its most recent experience working with onshore wind farm developers. Evaluations of costs and the extent to which contracts are carried out in Scotland and within local authority areas, as well as experience working with developers elsewhere in Scotland, have all contributed to this assessment.

12.2.4 The analysis also considered evidence on supply chain expenditure associated with the existing Solwaybank Wind Farm and similar developments in the South of Scotland.

12.2.5 For recreational assets, guidance has been provided by NatureScot (previously Scottish Natural Heritage) on how to assess effects on recreational amenity<sup>3</sup>. The assessment adopted this approach. In doing so, it takes into consideration several potential effects, including direct effect on facilities, such as limitation or restrictions on access, and effects on the intrinsic quality of the resources enjoyed by people. In general, the NatureScot guidance would consider recreational and access impacts to potentially be significant if there were:

- permanent or long-term effects on the resources on which enjoyment of the natural heritage depends, in particular where facilities have been provided by NatureScot or others under statutory powers;
- permanent or long-term change that would affect the integrity and long-term sustainable management of facilities which were provided by NatureScot or others under statutory powers;
- where there are recreational resources for open air recreation pursuits affected by the proposal which have more than local use or importance, especially if that importance is national in significance;
- major constraints on or improvements for access or accessibility to designated natural heritage sites; and
- where mitigation and/or compensatory or alternative recreational provision is considered inadequate.

<sup>1</sup> Department of Energy and Climate Change (2012). Onshore Wind, Direct and Wider Economic Impacts.

<sup>2</sup> RenewableUK (2015). Onshore Wind: Economic Impacts in 2014.

<sup>3</sup> Scottish Natural Heritage (2018). A Handbook on Environmental Impact Assessment.

## 12.3 Assessment of Socio-Economic Effects

- 12.3.1 As mentioned above, there is no specific legislation or guidance available on the methods which should be used when assessing the socio-economic effects of a proposed wind farm development in an EIA. Therefore, to identify and assess the significance of predicted socio-economic effects, the assessment has been based on professional judgement for the degree of change resulting from proposals, using methods commonly used in EIAs for proposed renewable energy developments, as outlined below.
- 12.3.2 The assessment was undertaken using a model that has been developed by BiGGAR Economics specifically to estimate the socio-economic effects of onshore wind farm developments. This is consistent with Scottish Government advice on net economic benefit<sup>4</sup>.
- 12.3.3 To begin estimating the economic activity supported by the proposed development, it was first necessary to calculate the expenditure during the construction and development, and operation and maintenance phases. The total expenditure figure was then divided across key contract areas using calculated assumptions regarding the share that could be expected by main and sub-contractors. This provides an estimate for each main contract area that could be secured in each of the study areas considered in this assessment.
- 12.3.4 The economic model is based on four key stages:
- estimation of the capital and operational expenditure;
  - estimation of the value of component contracts that make up total expenditure;
  - assessment of the capacity of businesses in the study areas to perform and complete component contracts; and
  - estimation of economic impact from resultant figures.

## 12.4 Tourism and Recreation Assessment

- 12.4.1 The potential effect of wind farm development on the tourism and recreation sector has been the subject of several research studies. A review of the latest available research evidence has been undertaken.

- 12.4.2 Tourism attractions and accommodation providers within the vicinity of the proposed development were identified and the potential effect of the proposed development has been considered with reference to the research evidence. Important visitor attractions in Dumfries and Galloway were also identified and considered. The analysis focuses on whether the proposed development is likely to lead to a change in behaviour, for example fewer tourists visiting the area, based on how it interacts with the key features of each tourism asset.

- 12.4.3 Recreational assets, such as trails, have also been identified, and the potential reduction in recreational amenity has been assessed. There are several potential ways in which the proposed development could affect trails, including through reduced amenity associated with landscape and visual impacts, and through reduced access. Reduced access to amenity is particularly important in the context of areas that have limited access to recreational amenities, such as walking.

## 12.5 Consultation

- 12.5.1 The study team is familiar with the study area and the socio-economic conditions within Dumfries and Galloway and Scotland as a whole. For this reason and based on the comments received to the Scoping Report (see Table 12.1), it was deemed not necessary to carry out consultations.

## 12.6 Methodology

### Scope of Assessment

- 12.6.1 The assessment considers the interaction between the proposed development and the following receptors:
- the regional and national economy;
  - local tourism attractions;
  - local accommodation providers; and
  - local recreational activities, including recreational paths.
- 12.6.2 The drafting of this chapter has considered the responses received to the Scoping Report. Respondents, their comments and where in the chapter these have been addressed are set out in Table 12.1.

<sup>4</sup> Scottish Government (2016). Net Economic Benefit and Planning.

**Table 12.1: Responses to the Scoping Report**

Organisation	Scoping Response	Comment/Action Taken
Visit Scotland	Identification and full consideration of any potential detrimental effect of the proposed development on the tourism economy.	The effects on tourism assets are considered within Section 12.8.
Middlebie and Waterbeck Community Council	Impact on tourism from noise and visual impacts, in relation to nearby core paths and the Dark Sky Park.	The effect on these tourism assets is considered in Section 12.7
British Horse Society	The proposed development is an opportunity to improve connectivity and address any issues with regards to countryside access, transport and travel.	The use of access tracks for horse riding is considered in Sections 12.7 and 12.8.

### Baseline Characterisation

#### Study Area

- 12.6.3 The analysis of socio-economic impacts considered the following study areas:
- the local area, which comprises the electoral ward of Annadale East and Eskdale;
  - Dumfries and Galloway;
  - the South of Scotland (Dumfries and Galloway and the Scottish Borders); and
  - Scotland.

12.6.4 The assessment of impacts on tourism and recreation considered impacts on assets located within 15km from the proposed development. This is in line with best practice across similar assessments.

#### Desk Study / Field Survey

12.6.5 The characterisation of the baseline was based on desk-based research, including review of relevant statistics and policy documents. The study team has previously carried out assessments for onshore wind farm developments in the area and has a robust understanding of its socio-economic and tourism baseline.

### Sensitivity Criteria

12.6.6 The initial consideration of the sensitivity of an area's economy, or a tourism asset, to an effect is assessed based on the criteria outlined in Table 12.2.

**Table 12.2: Socio-economic, tourism and recreation sensitivity criteria**

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

### Magnitude of Effect

12.6.7 The assessment of magnitude is based on the criteria set out in Table 12.3.

**Table 12.3: Socio-economic, tourism and recreation magnitude criteria**

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

## Significance Criteria

- 12.6.8 There are no published thresholds in the assessment of effects on socio-economics, tourism and recreation. The assessment is based on available evidence, including from research, and professional judgement.
- 12.6.9 Moderate and major effects are assessed as significant in EIA terms (and shown in bold). Effects have been determined based on the matrix set out below.

**Table 12.4: Significance matrix**

Magnitude of Change	Sensitivity				
	Very High	High	Medium	Low	Negligible
High	Major	Major	Moderate	Moderate	Minor
Medium	Major	Moderate	Moderate	Minor	Negligible
Low	Moderate	Moderate	Minor	Negligible	Negligible
Negligible	Negligible	Negligible	Negligible	Negligible	Negligible

## 12.7 Baseline

### Current Baseline

#### Socio-Economic Strategic Context

- 12.7.1 The proposed development is aligned with local, regional and national economic strategies. Its construction and operations, as well as the Applicant's investment in the community, support the creation of sustainable and inclusive growth, one of the aims in Scotland's National Performance Framework<sup>5</sup>.
- 12.7.2 Similarly, it delivers on Scotland's National Strategy for Economic Transformation<sup>6</sup> (NSET) and the Local Energy Policy Statement<sup>7</sup>. As set out in NSET, Scotland has substantial energy potential and it has developed a growing green industrial base. By providing renewable energy, the proposed development will support the transition of the economy towards net zero, with potential benefits from securing new market opportunities. As a localised energy solution, the proposed development will also support the local recovery from the Covid-19 pandemic and the shift towards a net-zero and decarbonised economy.

<sup>5</sup> Scottish Government (2018). Scotland's National Performance Framework.

<sup>6</sup> Scottish Government (2022). Delivering Economic Prosperity, Scotland's National Strategy for Economic Transformation.

<sup>7</sup> Scottish Government (2021). Local Energy Policy Statement.

- 12.7.3 The proposed development also supports local and regional strategies, including the South of Scotland Regional Economic Strategy<sup>8</sup> and the investment associated with the Borderlands Inclusive Growth Deal<sup>9</sup>. The latter identified encouraging green growth as a priority, whereas renewable energy is recognised as a sector important to diversify the economic structure of the South of Scotland and supporting the region's vision of being 'green, fair, and flourishing'.
- 12.7.4 More information relating to the Socio-Economic Strategic Context is found in Technical Appendix 12.1.

#### Socio-Economic Baseline Conditions

##### Population

- 12.7.5 In 2020, the local area had a population of 9,879, accounting for around 7% of the total population of Dumfries and Galloway<sup>10</sup>. The share of the population of working age in the local area (57.2%) was lower than those of both Dumfries and Galloway (58.1%), the South of Scotland (58.3%) and Scotland as a whole (63.9%).
- 12.7.6 The share of the population aged 65 years old and over is larger in the local area than for the other two study areas considered. This age group accounts for 29.2% of the local population, compared to 26.4% in Dumfries and Galloway, 25.9% in the South of Scotland and 19.3% across Scotland. Data on the population structure suggest that there may be limited employment opportunities for people of working age in the local area.

**Table 12.5: 2020 Population estimates**

Population	Local Area	Dumfries and Galloway	South of Scotland	Scotland
Total Population	9,879	148,400	263,500	5,466,000
0-15	13.7%	15.6%	15.9%	16.8%
16-64	57.2%	58.1%	58.3%	63.9%
65+	29.2%	26.3%	25.9%	19.3%

##### Population Projections

- 12.7.7 The National Records of Scotland provide population projections at the local authority and Scottish levels. While at the electoral ward level information is not available, current population estimates and future trends at local authority level can be used to form a view of more localised trends.

<sup>8</sup> South of Scotland Regional Economic Partnership (2021). South of Scotland Regional Economic Strategy.

<sup>9</sup> Borderlands Inclusive Growth Deal (2021). Growth Deal March 2021.

<sup>10</sup> ONS (2021). Population Estimates 2020 and National Records of Scotland (2022), Electoral Ward Population Estimates.



- 12.7.8 Over the period between 2018 and 2043, the total population of Dumfries and Galloway is expected to fall by 8.4%, from 148,790 to 136,286<sup>11</sup>. The population of the South of Scotland (Scottish Borders and Dumfries and Galloway) is also expected to fall from 264,060 to 252,424. This 4.4% decline is mostly driven by population changes in Dumfries and Galloway. During the same period, the total population of Scotland is expected to increase by 2.5% from 5,438,100 to 5,574,819.
- 12.7.9 The relative share of the working age population in Dumfries and Galloway is expected to fall from 58.8% to 53.0%. At the same time, the share accounted for by people aged 65+ is expected to rise from 25.5% to 33.7%. Similar changes in population structure are expected across the South of Scotland. Scotland is expected to feature an ageing population, with the share of people aged 16-64 expected to fall from 62.2% to 60.3% and the share of people aged 65 and over set to rise from 18.8% to 24.9% between 2018 and 2043.
- 12.7.10 If the current differences in population structure between the local area and Dumfries and Galloway were to remain in the future, the local area would be even more susceptible to pressure on public services. By creating well-paid employment, the proposed development could contribute to offset existing depopulation projections.

**Table 12.6: Population projections by age, 2018-2043**

Population	Dumfries and Galloway		South of Scotland		Scotland	
	2018	2043	2018	2043	2018	2043
Total Population	148,790	136,286	264,060	252,424	5,438,100	5,574,819
0-15	15.7%	13.2%	16.1%	14.1%	16.9%	14.8%
16-64	58.8%	53.0%	58.9%	53.2%	62.2%	60.3%
65+	25.5%	33.7%	25.0%	32.7%	18.9%	24.9%

### Industrial Structure

- 12.7.11 In 2020, 4,000 people were employed in the local area<sup>12</sup>. Of these, 21.4% were employed in wholesale and retail trade, above average compared to Dumfries and Galloway (15.7%), the South of Scotland (15.6%) and Scotland (13.7%). Professional, scientific and technical activities was also a significant employer, accounting for 18.8% of jobs in the local area compared to 4.3% across Dumfries and Galloway, 4.7% in the South of Scotland and 7.0% across Scotland.

- 12.7.12 Accommodation and food services, generally associated with employment in the tourism sector, accounted for an above average share of jobs in the local area. The sector covered 13.4% of jobs, a larger share than across Dumfries and Galloway (7.8%), the South of Scotland (7.3%) and Scotland as a whole (7.1%).
- 12.7.13 Construction, a sector which could particularly benefit from contracts relating to the proposed development, was also overrepresented in the local area, with 6.4% of workers employed in this sector compared to Dumfries and Galloway, the South of Scotland and Scotland, where the sector accounted for 4.3%, 4.7% and 5.1% of employment, respectively.

**Table 12.7: Industrial structure, 2020**

Element	Local Area	Dumfries and Galloway	South of Scotland	Scotland
Wholesale and retail trade; repair of motor vehicles and motorcycles	21.4%	15.7%	15.6%	13.7%
Professional, scientific and technical activities	18.8%	4.3%	4.7%	7.0%
Accommodation and food services	13.4%	7.8%	7.3%	7.1%
Human health and social work activities	6.7%	17.3%	18.3%	16.1%
Construction	6.4%	4.3%	4.7%	5.1%
Education	6.2%	7.8%	7.6%	8.0%
Administrative and support service activities	5.9%	3.9%	3.7%	7.7%
Transportation and storage	5.6%	4.7%	3.8%	4.3%
Manufacturing	5.1%	9.4%	9.8%	7.0%
Agriculture, forestry and fishing	3.2%	11.8%	11.2%	3.1%
Real estate activities	1.9%	2.2%	2.1%	1.5%
Other service activities	1.6%	1.8%	1.7%	1.7%
Information and communication	1.3%	1.0%	1.2%	3.5%
Public administration and defence; compulsory social security	0.9%	3.9%	3.9%	6.2%
Arts, entertainment and recreation	0.8%	2.0%	2.3%	2.2%
Financial and insurance activities	0.4%	0.7%	0.6%	3.1%

<sup>11</sup> National Records of Scotland (2020). Population Projections for Scottish Areas (2018-based).

<sup>12</sup> ONS (2021). Business Register and Employment Survey 2020.

Element	Local Area	Dumfries and Galloway	South of Scotland	Scotland
Electricity, gas, steam and air conditioning supply	0.3%	0.5%	0.7%	0.8%
Mining and quarrying	0.0%	0.1%	0.1%	1.1%
Water supply; sewerage, waste management and remediation activities	0.0%	0.9%	0.8%	0.7%
Total	4,000	63,000	109,000	2,544,000

### Economic Activity

12.7.14 In 2021, Dumfries and Galloway had an economic activity rate of 75.1%, which was lower than the Scottish average of 76.1%<sup>13</sup> but higher than across the South of Scotland (74.5%). The unemployment rate in Dumfries and Galloway (5.7%) and the South of Scotland (4.9%) was higher than across Scotland (4.3%). Dumfries and Galloway (£27,555) and the South of Scotland (£27,891) had a lower median annual gross wage for full time workers when compared to the entirety of Scotland (£31,659)<sup>14</sup>.

**Table 12.8: Economic indicators, 2021**

Element	Dumfries and Galloway	South of Scotland	Scotland
Economic Activity Rate	75.1%	74.5%	76.1%
Unemployment Rate	5.7%	4.9%	4.3%
Median Annual Gross Income (full time workers)	£27,555	£27,891	£31,659

### Scottish Index of Multiple Deprivation

12.7.15 The Scottish Index of Multiple Deprivation (SIMD)<sup>15</sup> is a relative measure of deprivation which ranks small areas of Scotland in terms of deprivation across seven dimensions: income, employment, education, health, access to services, crime and housing. These areas can be ranked based on which quintile (fifth of the distribution) they belong to, with a small area in the first quintile being in the 20% most deprived areas in Scotland.

12.7.16 Overall, the local area is on average more affluent than the rest of Dumfries and Galloway. The electoral ward has 36% of its data zones in the 4<sup>th</sup> quintile (the 1<sup>st</sup> quintile indicates the least affluent areas), with 50% of data zones part of the 40% least deprived areas of Scotland, compared to 28% of data zones across Dumfries and Galloway and 33% in the South of Scotland. At local level no areas were in the 20% most deprived areas of Scotland, compared to 9% of all data zones in Dumfries and Galloway and 8% in the South of Scotland.

**Table 12.10: Scottish Index of Multiple Deprivation**

Deprivation	Local Area	Dumfries and Galloway	South of Scotland
1 (most deprived quintile)	0%	9%	8%
2	21%	24%	21%
3	29%	38%	38%
4	36%	20%	25%
5 (least deprived quintile)	14%	8%	8%

### Socio-Economic Baseline Summary

12.7.17 Between 2018 and 2043, the population of Dumfries and Galloway and the South of Scotland is expected to fall, with an above average decrease in its working age population. This suggests that there is a lack of opportunities for workers in the area, which leads to migration and a relatively older population structure.

12.7.18 While economic activity is broadly similar to Scotland as a whole, the median annual gross income of full-time workers in the South of Scotland is lower. The proposed development could contribute to offsetting population trends through the provision of high paying jobs.

12.7.19 At local level the construction sector, which is likely to benefit from contracts associated with the proposed development, accounts for an above average share of employment compared to Dumfries and Galloway, the South of Scotland and Scotland as a whole. This suggests local businesses could benefit from the construction of the proposed development.

<sup>13</sup> ONS (2022). Annual Population Survey.

<sup>14</sup> ONS (2022). Annual Survey of Hours and Earnings - Resident Analysis.

<sup>15</sup> Scottish Government (2020). Scottish Index of Multiple Deprivation 2020.

## Tourism and Recreation Strategic Context

12.7.20 Following on from the Tourism Scotland 2020 (TS2020) strategy<sup>16</sup>, a collaborative network of industry experts created Scotland's Outlook 2030<sup>17</sup>, which is focused on creating a world-leading tourism sector in Scotland that is sustainable in the long-term. The strategy is focused on four key priorities:

- people;
- places;
- businesses; and
- experiences.

12.7.21 The strategy recognises the effects of climate change, technological advancements, Brexit and changing consumer behaviour on tourism and highlights the need for collaboration between government, communities, and the public and private sectors. There are six conditions that the strategy has highlighted as being crucial for success:

- using technological advancements and information to understand changes and trends in tourist behaviours;
- ensuring policies are in place that support the vision;
- enabling investment opportunities into Scotland's tourism market;
- improving transport and digital infrastructure;
- greater collaboration between businesses in the industry; and
- positioning Scotland as a great place to live and visit locally and globally.

12.7.22 A main commitment of the strategy is to address the effects of energy demand associated with tourism and make the sector commit fully to Scotland's ambition of becoming a net-zero society by 2045.

## Tourism and Recreation Baseline

12.7.23 The tourism and recreation baseline considers the scale of activity in the tourism sector and assets to be considered as part of this assessment. The analysis includes an overview of visitor numbers and their spend, as well as the identification of key attractions, accommodation providers and recreational activities in the proximity of the proposed development.

## Sustainable Tourism Sector

12.7.24 In 2015, Scotland's Economic Strategy outlined six sectors which had the potential to support the growth of Scotland's economy, one of which was sustainable tourism<sup>18</sup>. In 2019, the sustainable tourism sector in Dumfries and Galloway generated £77.1 million Gross Value Added (GVA), accounting for approximately 2% of the total GVA generated by the sector across Scotland (£4,497.3 million)<sup>19</sup>. In the same year, the sector employed 7,000 people in Dumfries and Galloway. Employment in the local authority accounted for around 3% of total employment in the sector across Scotland (229,000) and 63% of that in the South of Scotland (11,500).

**Table 12.11: Sustainable tourism GVA and employment, 2019**

	Dumfries and Galloway	South of Scotland	Scotland
GVA (£m)	77.1	132.1	4,497.3
Employment	7,000	11,500	229,000

### Visitors and Visitor Spending

12.7.25 A range of statistics are available on visitor numbers and visitor spend for Dumfries and Galloway and Scotland, including from the Great Britain Day Visitor Survey<sup>20</sup>, the Great Britain Tourism Survey<sup>21</sup> and the International Passenger Survey<sup>22</sup>. These are not available at the electoral ward level and therefore no data is available for the local area.

12.7.26 The latest figures show that in 2019 there were 6.1 million annual visitors to Dumfries and Galloway, spending £391.1 million in total. Day visitors accounted for 88% of visitors to Dumfries and Galloway, followed by domestic overnight visitors (12%) and international overnight visitors (1%). While day visitors spent the most in Dumfries and Galloway (£243.5 million), the largest spending per visit came from domestic overnight visitors (£186 per visit) and international overnight visitors (£472 per visit).

12.7.27 Over the same period, there were 8.3 million day visits to the South of Scotland, around 1.0 million overnight domestic visits and less than 0.1 million overnight visits from international visitors. International visitors spent the largest amount per visit to the South of Scotland (£394 per visit).

<sup>16</sup> Scottish Tourism Alliance (2012). Tourism Scotland 2020.

<sup>17</sup> Scottish Tourism Alliance (2020). Scotland's Outlook 2030.

<sup>18</sup> Scottish Government (2015). Scotland's Economic Strategy.

<sup>19</sup> Scottish Government (2022). Growth Sector Statistics.

<sup>20</sup> Kantar (2020). Great Britain Day Visitor Survey.

<sup>21</sup> Kantar (2020). Great Britain Tourism Survey.

<sup>22</sup> ONS (2020). International Passenger Survey.

12.7.28 Dumfries and Galloway accounted for 4% of total visitors to Scotland, of which there were 160.9 million. Similar to Dumfries and Galloway, day visitors accounted for the largest share of visitors to Scotland (90%), followed by domestic overnight visitors (8%) and international overnight visitors (2%). Visitors to Scotland spent £10.6 billion in 2019.

**Table 12.12: Visitor numbers and visitor spending, 2019**

Visitor Type	Dumfries and Galloway	South of Scotland	Scotland
<b>Visits (million)</b>			
Day Visitors	5.3	8.3	144.9
Domestic Overnight Visitors	0.7	1.0	12.4
International Overnight Visitors	<0.1	<0.1	3.5
Total Visitors	6.1	9.4	160.9
<b>Spend (£ million)</b>			
Day Visitors	243.5	304.7	5,186.6
Domestic Overnight Visitors	130.7	193.3	2,989.3
International Overnight Visitors	17.0	25.5	2,458.6
Total Spending	391.1	523.5	10,634.5

### Regional Visitor Attractions

12.7.29 Of the top ten most visited attractions across Dumfries and Galloway<sup>23</sup> and the Scottish Borders<sup>24</sup>, two are located within 15km of the proposed development. The remaining eight attractions are all located over 30km from the proposed development.

12.7.30 The closest regional attraction is Greta Green Famous Blacksmiths Shop, which is located approximately 11km south of the proposed development. The shop is the most popular tourist attraction in Dumfries and Galloway, with 772,448 visitors each year.

12.7.31 Devil's Porridge Museum is also located within 14km of the proposed development. In 2019, the museum attracted a total 20,001 visitors.

**Table 12.13: Regional visitor attractions**

Attraction	Visitors	Distance from site (km)
Gretna Green Famous Blacksmiths Shop	772,448	11
Galloway Forest Park	385,437	85
Tweed Valley Forest Park	347,763	58
Threave Garden	120,840	58
St Abb's Head	63,721	100
Mabie Forest	63,291	39
Melrose Abbey	61,325	53
Dalbeattie Forest	55,042	51
Grey Mare's Tail	45,945	36
Forest of Ae	41,793	35

12.7.32 The remainder of this baseline covers the role of the tourism sector in the local economy. It considers tourism assets, including accommodation providers, recreational trails and visitor attractions, within 15km of the proposed development.

12.7.33 Based on the Landscape & Visual Impact assessment (LVIA), visibility is expected across this study area and, for this reason, assets within it have been considered as part of the assessment.

### Recreational Paths

12.7.34 A web search on the portal walkhighlands.co.uk<sup>25</sup> led to the identification of 15 recreational paths. These are listed in Table 12.14, which includes a brief description of each asset and their distance from the proposed development.

### Cycle Routes

12.7.35 There are three cycle routes in the study area:

- National Cycle Route (NCR) 7 (7.4km);
- National Cycle Route (NCR) 74 (8.8km); and
- Regional Cycle Route (RCR) 11 (9.7km).

<sup>23</sup> Visit Scotland (2021). Insight Department: Dumfries and Galloway Factsheet 2019.

<sup>24</sup> Visit Scotland (2021). Insight Department: Scottish Borders Factsheet 2019.

<sup>25</sup> Walkhighlands. (2022). Dumfries and Galloway Walks. Available at: <https://www.walkhighlands.co.uk/galloway/>



**Table 12.14: Recreational paths**

Recreational Path Name	Description	Distance from proposed development (km)
Calfield Rig and Mid Hill, Langholm	After leaving Langholm through parkland, this 11.5km walk goes through farmland to reach the open moorland ridge of Calfield Rig, Black Knowe and Mid Hill with open views.	1km
Warb Law, Langholm	Warb Law, topped by a transmitter mast, rises to the south of the town of Langholm; its ascent is rewarded by superb views over the town.	1km
Duchess Bridge, Langholm	This short 3.5km circular walk follows the River Esk upstream from Langholm before returning on tracks and minor roads.	2km
Whita Hill, Langholm	Whita Hill is the best known of the rounded hills which surround Langholm, being topped by the Malcolm Monument. This circular 7.25km walk begins by heading north up the glen before climbing to the summit.	3km
Potholm Hill and Castle Hill, Langholm	This 8.5km circuit heads through woodland before climbing onto a low ridge with excellent views and a descent back to Langholm.	3km
River Esk and Rowanburn Circuit, Canonbie	A varied 13.5km circuit from the village of Canonbie taking in sections of the River Esk and Liddel Water, woodland and farmland.	5km
Bessie's Hill and Castle O'er	A 9km walk that links the sites of two iron-age hill-top forts rising above forestry to give open views above the River White Esk.	12km
Cross Border Trail, Newcastleton	This 17.75km circuit climbs gently from Newcastleton to give views over the surrounding hills, before heading through woodland to follow the Kershope Burn along the England/Scotland border.	12km
Woolhope circuit, Newcastleton	This short 7.25km circular walk explores the tracks and hill farms on the western slopes of Liddesdale, above Newcastleton.	13km
Hoddom Castle to the Solway Firth	This 16.25km route is mostly beside the River Annan as it passes through Brydekirk and Annan before reaching the Solway Firth.	13km
Dykecrofts circular, from Newcastleton	This 10km circuit from the village of Newcastleton heads up to the east before cutting through the forest and visiting the site of the original village it replaced.	14km
River Annan circuit: Annan and Brydekirk	A 10.5km riverside circular along the banks of the River Annan to Brydekirk.	14km
Hoddom Castle and the Repentance Tower	This 6.5km walk explores part of the River Annan, farmland and woodland, passing Hoddom Castle and climbing to the Repentance Tower.	15km

Recreational Path Name	Description	Distance from proposed development (km)
Eskrigg Nature Reserve circuit from Lockerbie	This 7km walk begins from the town centre of Lockerbie, heading out to the Eskrigg Nature reserve and returning via the Garden of Remembrance.	15km
Lochmaben to Hoddom Castle	This 21.5km route goes from Lochmaben, continues past Castle Loch through forests and minor roads eventually reaching Hoddom Castle.	15km

### Core Paths

12.7.36 The assessment has also identified a series of core paths, key public access routes, located in the proximity of the proposed development. Core paths have been identified across the region based on the list provided on from Dumfries and Galloway Council's website<sup>26</sup>.

12.7.37 There are seven core paths near the proposed development, which are in and around Langholm:

- Mouldy Hill to Outer Hill;
- Blackknowne Walk;
- Gaskells Walk;
- Warblaw Walk;
- Wab Law Walk;
- Skippers Bridge to Broomholmshiels; and
- Whita Hill Walk.

12.7.38 There are also four core paths near the proposed development, in the vicinity of Gilnockie Tower:

- Roman Road;
- Dismantled Railway Road North;
- Blackknowne Walk; and
- Byreburn Wood Loop.

### Local Accommodation Providers

12.7.39 As part of the desk study, a series of accommodation providers were identified within 15km from the proposed development. The identification of accommodation providers was based on online accommodation portals, including Visit Scotland's<sup>27</sup>.

<sup>26</sup> Dumfries and Galloway Council. (2022). Core paths: walking and cycling in Dumfries and Galloway. Available at: <https://info.dumgal.gov.uk/mapviewers/PathsList.aspx>

<sup>27</sup> Visit Scotland. (2022). A Guide to Accommodation in Scotland. Available at: <https://www.visitscotland.com/accommodation/>

12.7.40 The accommodation providers are mostly clustered around a few locations and settlements and their surrounding areas, including:

- Newcastleton;
- Langholm;
- Lockerbie;
- Ecclefechan;
- Annan; and
- Gretna.

12.7.41 Table 12.15 provides a summary of the accommodation providers identified as part of the tourism baseline.

**Table 12.15: Accommodation providers**

Area	Distance From Site	Number of Accommodation Providers
Newcastleton	12-15km	10
Langholm	3-9km	12
Lockerbie	5-15km	9
Ecclefechan	6-15km	11
Annan	14-16km	12
Gretna	10-14km	14
Total Providers Identified	n/a	68

#### Visitor Attractions

12.7.42 A search through the VisitScotland<sup>28</sup> portal identified 16 visitor attractions as lying within 15km from the proposed development. A brief description of each attraction, alongside its distance from the proposed development is set out in Table 12.16.

**Table 12.16: Visitor attractions**

Visitor Attraction Name	Description	Distance from proposed development (km)
The Buccleuch Centre	A theatre and arts venue nestled in the Esk Valley. Available for functions and meetings as well as having an extensive programme of events.	3km
Langholm Golf Course	Scenic nine-hole golf course.	3km
Gilnockie Tower	The Clan Armstrong Centre with guided tours of the tower, a gift shop and a café.	4km

<sup>28</sup> Visit Scotland. (2022). Dumfries & Galloway. Available at: <https://www.visitscotland.com/destinations-maps/dumfries-galloway/>

Visitor Attraction Name	Description	Distance from proposed development (km)
MacDiarmid Memorial, Langholm	Overlooking the town of Langholm, this memorial takes the form of a giant metal open book and is dedicated to the poet Hugh MacDiarmid.	4km
Westerkirk Library	Holding over 8,000 books, from the 18th century to the present, Westerkirk Parish Library is the oldest library still in use in Scotland.	8km
The National Trust for Scotland - Thomas Carlyle's Birthplace	Childhood home of Thomas Carlyle containing artefacts and objects from his early years.	11km
Gretna Green Famous Blacksmiths Shop	Gretna Green Famous Blacksmiths Shop is where couples have come to marry since 1754.	11km
Westlands Country Park	Range of Lodges to hire and buy, some with their own private hot tub or swim spa, first class shooting ground and large fly-fishing ponds.	11km
Castle D'Oer Forest	Explores archaeological remains amidst peaceful surroundings within this large conifer forest.	12km
The Devils Porridge	Brand new state-of-art museum to discover the story of the Greatest Munitions Factory on Earth and the extraordinary lives of the people who lived and worked here.	14km
Chariots of Fire	Equestrian centre with horse riding and carriage driving lessons.	15km
Lockerbie Golf Club	Parkland golf course on the edge of the Annandale Hills.	15km
St Kentigerns Kirk	Atmospheric Churchyard of St Kentigern, famous for its 8th and 9th century sculptures and connections with St Mungo, founder of Glasgow.	15km
Annandale Distillery and Visitor Centre	Annandale Distillery was established in 1836 and reborn in 2014 following an extensive £10.5 million restoration project.	15km
Eskrigg Reserve	Eskrigg Nature Reserve and Woodland Walks runs an annual programme of talks, visits and workshops relating to wildlife and conservation for members, schools and other interested parties.	15km
Bouldover Climbing Centre Ltd	An indoor climbing and bouldering facility.	15km

#### Dark Sky Park

12.7.43 The Dark Sky Park part of Galloway Forest Park lies over 60km from the proposed development and outside the 15km radius considered in the tourism assessment.

12.7.44 For this reason, it has been scoped out of the assessment.

## 12.8 Assessment of Potential Effects

### Construction Effects

- 12.8.1 The estimation of economic benefits from the construction and development of the proposed development draws on the extensive work that BiGGAR Economics has carried out in the onshore wind sector. This includes an evaluation of existing wind farm developments carried out in 2015 by BiGGAR Economics on behalf of RenewableUK<sup>29</sup>. The analysis has been updated over time based on evaluations of individual wind farm developments and on experience with developers working across Scotland.
- 12.8.2 This body of evidence allows to estimate an onshore wind development's total costs based on costs per MW, costs per wind turbine, or a combination of the two. In this case, a combination of the two has been considered.
- 12.8.3 For the purposes of this assessment, the proposed development was assumed to comprise 21 wind turbines with a total generating capacity of 126MW. On this basis, it was estimated that the proposed development could result in a total capital expenditure (CAPEX) of up to £111 million.
- 12.8.4 Details on spending on battery storage were not available at the time of writing. While the inclusion of expenditure on battery storage infrastructure would lead to larger benefits, it is unlikely that it would affect the conclusions reached as part of this assessment.
- 12.8.5 To assess the level of economic activity supported by the proposed development, it was necessary to split this expenditure across the following contracts areas:
- development and planning;
  - balance of plant;
  - wind turbine; and
  - grid connection.
- 12.8.6 The proportion of CAPEX that is spent across each contract area was informed by BiGGAR Economics' research into wind farms that are currently in operation in the UK. As shown in Table 12.17, it was estimated that the largest proportion of CAPEX will be spent on wind turbine-related contracts (63%), followed by balance of plant (25%), grid connection (7%) and development and planning (6%).

**Table 12.17: Value of CAPEX contracts**

	% CAPEX	Value (£m)
Development and Planning	6%	6
Wind Turbines	63%	70
Balance of Plant	25%	27
Grid Connection	7%	8
Total	100%	111

- 12.8.7 To estimate the economic impact supported by the proposed development across Dumfries and Galloway, the South of Scotland and Scotland, it was necessary to estimate the share of each contract that could be secured within the three study areas. Assumptions were based on analysis of the industrial baseline in each study area and evidence from similar developments in the South of Scotland.
- 12.8.8 On this basis, it was estimated that Dumfries and Galloway could secure contracts worth £10 million, equivalent to 9% of CAPEX. The South of Scotland could benefit from £12 million in spending (11% of CAPEX). Balance of plant contracts are the largest opportunity for Dumfries and Galloway and the South of Scotland.
- 12.8.9 Scotland could secure £36 million in contracts associated with development and construction, equivalent to 33% of CAPEX. Spending in Scotland is to be intended as being inclusive of spending in Dumfries and Galloway and in the South of Scotland.
- 12.8.10 The assessment assumed that most of the spending on wind turbines would take place outside of Scotland. For this reason, the estimates provided may represent an underestimate of spending if a tower manufacturer was present in Scotland at the time of construction.

**Table 12.18: Value of CAPEX contracts by study area**

	Dumfries and Galloway		South of Scotland		Scotland	
	%	£m	%	£m	%	£m
Development and Planning	35%	2	36%	2	75%	5
Wind Turbines	2%	1	2%	1	7%	5
Balance of Plant	18%	5	24%	7	81%	22
Grid Connection	23%	2	23%	2	51%	4
Total	9%	10	11%	12	33%	36

<sup>29</sup> RenewableUK (2015). Onshore Wind: Economic Impacts in 2014.

12.8.11 The contract values awarded in each area will represent an increase in the turnover of businesses. Using industry-specific data from the Annual Business Survey<sup>30</sup>, which provide the turnover per GVA ratio for each of the industries involved, the GVA impact from any increase in turnover can be estimated.

12.8.12 On this basis, it was estimated that expenditure on development and construction could generate £5 million direct GVA in Dumfries and Galloway, £6 million direct GVA in the South of Scotland and £18 million direct GVA in Scotland.

**Table 12.19: Development and construction direct GVA (£m)**

	Dumfries and Galloway	South of Scotland	Scotland
Development and Planning	2	2	3
Wind Turbines	<1	<1	3
Balance of Plant	2	3	11
Grid Connection	<1	<1	2
Total	5	6	18

12.8.13 Similarly, an increase in the economic activity of businesses has an impact on employment. The direct impact on employment from increases in turnover was estimated by applying relevant sectoral turnover per job ratios from the Annual Business Survey. Employment impacts during the construction and development phase are reported in job years as the contracts will be short-term.

12.8.14 In this way, it was estimated that the proposed development's construction and development will support 70 direct job years in Dumfries and Galloway, 90 direct job years in the South of Scotland and 280 direct job years in Scotland. The construction phase is expected to last between 12 and 18 months. Therefore, direct employment is expected to peak at 170 jobs in Scotland, 50 jobs in the South of Scotland and in Dumfries and Galloway.

**Table 12.20: Development and construction direct employment (job years)**

	Dumfries and Galloway	South of Scotland	Scotland
Development and Planning	<10	<10	30
Wind Turbines	20	20	60
Balance of Plant	40	50	160
Grid Connection	20	20	30
Total	70	90	280
Peak Employment	50	50	170

<sup>30</sup> Office for National Statistics (2020). Annual Business Survey 2018.

12.8.15 There will also be knock-on effects across the supply chain (indirect impacts) and from spending by employees in the local economy (induced impacts). These are estimated by applying Type I (indirect) and Type II (indirect and induced) GVA and employment multipliers, which are sourced from the Scottish Government<sup>31</sup>, to the direct GVA and employment impacts.

12.8.16 When applying Scottish multipliers to impacts across Dumfries and Galloway and the South of Scotland, it was necessary to make adjustments accounting for the level of economic activity in this study area. It was assumed that indirect impacts in Dumfries and Galloway and in the South of Scotland are 33% and 40% of those within Scotland, and induced impacts are 70% and 75% of those at Scottish level respectively.

12.8.17 The total economic impact from the proposed development was estimated by adding together the direct, indirect and induced impacts. The total combined impact was estimated as:

- £7 million GVA and 90 job years in Dumfries and Galloway;
- £8 million GVA and 110 job years in the South of Scotland; and
- £32 million GVA and 460 job years in Scotland.

**Table 12.21: Total economic impact of development and construction, GVA (£m)**

	Dumfries and Galloway	South of Scotland	Scotland
Direct	5	6	18
Indirect	1	1	8
Induced	1	1	6
Total	7	8	32

**Table 12.22: Total economic impact of development and construction (job years)**

	Dumfries and Galloway	South of Scotland	Scotland
Direct	70	90	280
Indirect	10	10	120
Induced	10	10	60
Total	90	110	460

#### Predicted Construction Effects

12.8.18 The economies of Dumfries and Galloway and the South of Scotland have been assessed as low sensitivity, while Scotland has been assessed as negligible sensitivity.

<sup>31</sup> Scottish Government (2020). Scottish Input-Output Multipliers 2017.



12.8.19 The impact of the temporary employment and increase in economic activity supported by the construction and development of the proposed development has been assessed as low in Dumfries and Galloway and the South of Scotland. On this basis, the effect of the proposed development's construction on the economies of Dumfries and Galloway and the South of Scotland has been assessed as **negligible**, temporary and beneficial.

12.8.20 The impact of the temporary employment and increase in economic activity supported by the construction and development of the proposed development has been assessed as negligible in Scotland. On this basis, the effects have been assessed as **negligible**, temporary and beneficial.

### Operational Effects

12.8.21 The analysis also considered the annual impact associated with the operation and maintenance of the proposed development. Impacts of a similar scale will persist throughout its lifespan.

12.8.22 Annual expenditure on operations and maintenance (OPEX) was estimated based on analysis undertaken in the 2015 RenewableUK report. On this basis, the annual OPEX associated with the proposed development could be up to £4 million (excluding community benefit payments and non-domestic rates).

12.8.23 As with the construction phase, to estimate the economic impact of the operations and maintenance expenditure, assumptions were made about the share of contracts that could be secured in each study area.

12.8.24 It was estimated that Dumfries and Galloway and the South of Scotland could secure £1 million (32% and 33% of OPEX respectively), whereas Scotland could secure £3 million (82% of OPEX), where spending in Scotland includes contracts awarded within Dumfries and Galloway and the South of Scotland.

**Table 12.23: Value of OPEX contracts by study area during operation**

	Dumfries and Galloway		South of Scotland		Scotland	
	%	£m	%	£m	%	£m
Operations and Maintenance	32%	1	33%	1	82%	3

12.8.25 As with the construction phase, the contract values awarded in each of the study areas represent an increase in turnover in those areas. The economic impact of the increase in turnover on GVA and employment was estimated following the same methodology as for construction expenditure.

12.8.26 In this way, it was estimated the operation and maintenance of the proposed development could support £1 million direct GVA and less than 10 direct jobs in Dumfries and Galloway, £1 million direct GVA and less than 10 direct jobs in the South of Scotland and £2 million direct GVA and 20 direct jobs in Scotland.

**Table 12.24: Direct GVA and employment impacts, Operation and Maintenance**

	Dumfries and Galloway	South of Scotland	Scotland
Direct GVA (£m)	1	1	2
Direct Employment	<10	<10	20

12.8.27 There will also be indirect and induced impacts during the operation and maintenance phase of the proposed development, which were estimated using the same method as for the development and construction phase.

12.8.28 Adding together the direct, indirect and induced impacts, it was estimated that the total annual economic impact of the proposed development will be:

- £1 million GVA and less than 10 jobs in Dumfries and Galloway;
- £1 million GVA and less than 10 jobs in the South of Scotland; and
- £3 million GVA and 30 jobs in Scotland.

**Table 12.25: Total economic impact from operations and maintenance**

	Dumfries and Galloway	South of Scotland	Scotland
Total GVA (£m)	1	1	3
Total Employment	<10	<10	30

12.8.29 The economies of Dumfries and Galloway and the South of Scotland have been assessed as low sensitivity, while Scotland has been assessed as negligible sensitivity.

12.8.30 The impact of the annual employment and increase in economic activity supported by the operations and maintenance of the proposed development has been assessed as negligible in Dumfries and Galloway and in the South of Scotland. On this basis, the effect has been assessed as **negligible** and beneficial.

12.8.31 The impact of the temporary employment and increase in economic activity supported by the operations and maintenance of the proposed development has been assessed as negligible in Scotland. On this basis, the effects have been assessed as **negligible** and beneficial.

## Community Benefits

- 12.8.32 In its publication outlining good practice principles for community benefits from onshore wind developments<sup>32</sup>, the Scottish Government discusses the approach that developers should take when developing community benefit proposals with the local community.
- 12.8.33 To ensure that these packages are most effective and deliver a lasting legacy for local communities, developers are encouraged to engage early and meaningfully with communities and to determine an appropriate geographical area recipient of funding. This ensures that the funding can be targeted effectively, and that the local area has the capacity to manage it.
- 12.8.34 The Scottish Government promotes a benefits package with a value of £5,000 per MW, which is inflation-indexed for the operational lifetime of the development. However, it recognises that the commercial environment for onshore wind developments has changed in recent years and is therefore sensitive to developers offering a more flexible package of benefits.
- 12.8.35 The applicant is committed to offer £5,000 in community benefits per MW of installed capacity, equivalent to a total £0.6 million per year available to local communities. Over the 50-year period considered in this assessment, a total £31.5 million could be invested in local communities.
- 12.8.36 As well as supporting the wider aspirations of the community, community benefits are expected to deliver economic impacts in terms of jobs and economic activity (GVA) supported. This will be determined by a range of factors, including the priorities of the community, whether more funding can be leveraged in by external sources and the sequencing of projects (for example, new building projects may take place in earlier years).
- 12.8.37 Possible opportunities to use community investment generated from the proposed development include:
- projects that improve the built environment;
  - projects that support the social fabric of a community, such as local amenities and charities; and
  - projects that develop the local economy.

## Non-domestic Rates

- 12.8.38 The proposed development will be liable for non-domestic rates, the payment of which will contribute to public sector finances.
- 12.8.39 Since the guidance for valuation of non-domestic rates from onshore wind developments is yet to be updated to reflect changes in the subsidy regime, it was necessary to make assumptions when estimating the proposed development's contribution to public finances.
- 12.8.40 Based on conversations with onshore wind developers, a conservative rate of £7,000 of non-domestic rates per MW was assumed. This is a worst-case scenario estimate based on information available at present and it is acknowledged that the rates paid will depend on a range of factors, including the proposed development's load factor.
- 12.8.41 On this basis, it was estimated that the proposed development would pay £0.9 million annually in non-domestic rates. On this basis, over the 50 years considered in the assessment, a total £44.1 million will be paid in non-domestic rates to Dumfries and Galloway Council.
- 12.8.42 In 2021/22, Dumfries and Galloway Council had total revenue of £290.3 million<sup>33</sup> and around 6,500 employees<sup>34</sup>. The proposed development will strengthen the financial position of the Council, though in practice not all the income generated from non-domestic rates would necessarily go to the local authority, since the distribution of non-domestic rate revenues is determined nationally.
- 12.8.43 Considering the scale of annual non-domestic rates payments with respects to Dumfries and Galloway Council's budget, the effect of the proposed development on public finances has been assessed as negligible.

## Tourism Assessment

### Literature Review: The Relationship between Onshore Wind and Tourism

- 12.8.44 In 2021 BiGGAR Economics<sup>35</sup> published new research on wind farms and tourism in Scotland. The study was undertaken to understand the relationship between the development of onshore wind energy and the tourism sector in Scotland and investigated whether there was a relationship between trends in tourism employment and wind farm development.

<sup>32</sup> Scottish Government (2019). Scottish Government Good Practice Principles for Community Benefits from Onshore Renewable Energy Developments.

<sup>33</sup> Dumfries and Galloway Council (2022). Annual Accounts.

<sup>34</sup> Dumfries and Galloway Council (2022). Council Departments.

<sup>35</sup> BiGGAR Economics (2021). Wind Farms & Tourism Trends in Scotland: Evidence from 44 Wind Farms.

12.8.45 The study notes that since 2009, the onshore wind sector has expanded considerably in Scotland, from an installed capacity of 1.75 gigawatts (GW) in 2009 to 8GW in 2019. Employment in tourism in Scotland also grew during these periods, by 19.7% between 2009 and 2019, including by 3.0% between 2015 and 2019.

12.8.46 The 2021 research identified 16 wind farms with a capacity of at least 10 megawatts (MW) that became operational between 2015 and 2019. Analysis of trends in tourism employment in the locality of these wind farms (study areas were based on a 15km radius) found that 11 of the 16 areas had experienced more growth in tourism employment than for Scotland as a whole. For 13 of the 16 wind farms, trends in tourism employment in the locality had outperformed the local authority area in which they were based.

12.8.47 The research also re-examined the 28 wind farms considered in an earlier 2017 report<sup>36</sup>, again finding that the localities in which they were based had outperformed Scotland and their local authority areas in the majority of cases. Moreover, the analysis found that in the six areas which had underperformed their local authority areas in the 2017 study, all had done better than their local authorities in the 2015 to 2019 period.

12.8.48 Overall, this research has analysed trends in tourism employment in the localities of 44 wind farms developed in recent years, providing a substantial evidence base. The study found no relationship between tourism employment and wind farm development, at the level of the Scottish economy, across local authority areas nor in the locality of wind farm sites.

12.8.49 These conclusions are not surprising given that:

- there are high levels of public support for renewable energy<sup>37</sup>;
- as wind farms become more well-established, tourists might already expect to see wind farms when visiting;
- the factors that determine the success of the tourism sector do not include the presence or otherwise of an onshore wind farm; and
- issues that influence tourism include the ability and willingness to travel, economic performance (and so whether tourists have disposable income available for leisure trips), exchange rates, the quality of the overall tourism product, the effectiveness of destination marketing and the quality and value for money of the services offered by tourism businesses.

12.8.50 Wind farm developments can also be recreational assets on their own terms and attract visitors, who are interested in renewable energy or wish to use the access tracks for recreational purposes.

#### **Approach to Tourism Assessment**

12.8.51 To assess the potential impact of the proposed development on the local tourism economy, tourism assets located in the area surrounding the proposed development are identified. Its potential effect on assets is then considered by identifying the specific motivations tourists have for visiting each attraction. An assessment of how the presence of a wind farm may influence the decision of tourists to visit is then carried out.

12.8.52 The environmental effects associated with a wind farm that visitors could be aware of are landscapes and visual impacts and noise.

12.8.53 There are various motivations which could lead tourists to visit local attractions, such as historical significance, activities which appeal to families, or the natural environment. For a wind farm to influence tourist behaviour, it is necessary that:

- the wind farm influences any of the motivations for tourists to visit the attraction; and
- visitors object enough to this influence that they change their behaviour and decide not to visit.

#### **Visitor Attractions**

12.8.54 The tourism and recreation baseline identified 24 visitor attractions. To assess the effect of the proposed development on these assets, each has been considered based on its offering and on whether the proposed development is likely to result in any changes from the baseline position.

<sup>36</sup> BiGGAR Economics (2017). Wind Farms and Tourism Trends in Scotland.

<sup>37</sup> BEIS (2022). Public Attitudes Tracker: Energy Infrastructure and Energy Sources. Spring 2022, UK.

- 12.8.55 There are four visitor attractions that are within 5km of the proposed development: Gilnockie Tower, Langholm Golf Course, The Buccleuch Centre, and MacDiarmid Memorial. The main reason for visitors to spend time at the Gilnockie Tower is for its historical and cultural significance. The Buccleuch Centre is an events venue and auditorium; the MacDiarmid Memorial is an artistic installation dedicated to the poet Hugh MacDiarmid; and Langholm Golf Club is a nine-hole golf course on the edge of the town of Langholm. These attractions are visited for a range of reasons including their recreational, historical and cultural features. Three of these visitor attractions are located in Langholm, where, according to the LVIA, visibility of the proposed development will mostly be screened by buildings and vegetation. No reference to Gilnockie Tower was made within the LVIA. In addition, the proposed development is not expected to affect any of the other core characteristics of these assets (leisure and historical value), and, through this, is unlikely to affect visitors' behaviour. For this reason, its effect on these assets was assessed as **negligible**.
- 12.8.56 Evidence from the LVIA suggests that beyond 7.5km from the proposed development, any visual impacts will be of a more limited nature. Westerkirk Parish Library, the oldest library still in use in Scotland today, dating from the 18<sup>th</sup> century and containing over 8,000 books is located around 8km from the proposed development. Given its relative distance and the characteristics of the library as an attraction, the proposed development is unlikely to affect visitors' behaviour. For this reason, its effect on Westerkirk Parish Library was assessed as **negligible**.
- 12.8.57 There are 11 visitor attractions that are within 10km and 15km of the proposed development. Chariots of Fire is an equestrian centre which offers lessons on horse riding and carriage driving. Lockerbie Golf Club is a parkland golf course on the edge of Annandale Hills. Thomas Carlyle's Birthplace is a museum at the childhood home of one of Scotland's most influential thinkers. The Churchyard of St Kentigern is said to be the site of an 11<sup>th</sup> century graveyard and a medieval church, and in 1991 the remains of a large 8<sup>th</sup> century monastery were discovered on the high ground behind the churchyard. These attractions are visited either because of their cultural or recreational features, which will not be affected by the proposed development. For this reason, its effect on these assets was assessed as **negligible**.
- 12.8.58 Castle D'Oer is a hill fort which is believed to be the base for an important branch of the Selgovae tribe, who ruled much of south-west Scotland in the Iron Age. The main reason for visiting this asset is for its historical significance. Gretna Green Famous Blacksmiths Shop is where couples have come to marry since the Marriage Act of 1754. It is situated in the centre of Gretna Green and attracts visitors as a wedding venue due to its historic reputation. Westlands Country Park is home to an array of first-class facilities including luxury lodges with private hot tubs, world-class shooting, a state-of-the-art gunroom, two well-stocked fishing ponds, an inviting restaurant and a clubhouse. This asset attracts visitors seeking a destination for an activity break. Given its distance from these assets, it is not expected that the Proposed Development will affect any of the characteristics that make these places attractive to visitors. For this reason, its effect was assessed as **negligible**.
- 12.8.59 The Devils Porridge Museum tells the story of HM Factory Gretna, the largest munitions factory in the world at the time of World War One, where the devil's porridge (or cordite, an explosive) was mixed. This visitor attraction is an ideal place for those interested in learning more about World War One and the home front. Annandale Distillery and Visitor Centre produces single malt whisky. While it was first established in 1836, it came back to operation in 2014 following an extensive £10.5 million restoration project. It is not expected that the proposed development will affect any of the characteristics that make these places attractive to visitors. For this reason, its effect on them was assessed as **negligible**.
- 12.8.60 The Eskrigg Reserve is a nature reserve with woodland walks and runs an annual programme of talks, visits and workshops on wildlife and conservation. It is an attraction for those interested in wildlife conservation. Boulderover Climbing Centre is an indoor climbing and bouldering centre comprising of 400 square meters of climbing space. The purpose-built centre caters to all ages and abilities. It is not expected that the proposed development will affect any of the characteristics that make these places attractive to visitors. For this reason, its effect was assessed as **negligible**.
- 12.8.61 Overall, the effect of the proposed development on the visitor attractions considered in the baseline was assessed as **negligible**. This is mainly a reflection of the fact that visitors' motivations for spending time at the attractions identified are unlikely to be affected by the presence of the proposed development.



### Accommodation Providers

- 12.8.62 The tourism baseline has identified a total of 68 accommodation providers as being located within 15km from the proposed development. They are all clustered around a few locations and settlements. To the north of the proposed development, they are mostly around Langholm and the B709. To the east of the proposed development, they are located around Newcastleton. To the south, the accommodation providers are primarily located around Annan and Gretna, whereas to the west they are around Lockerbie and Ecclefechan.
- 12.8.63 There are nine accommodation providers that are located less than 5km from the proposed development are in and around the town of Langholm. Evidence from the LVIA suggests that within Langholm any visual impacts will be limited. For this reason and, as a result of limited impacts on the overall tourism offer in the area, the effect of the proposed development on these accommodation providers was assessed as **negligible**.
- 12.8.64 There are an additional nine within 5km and 10km, and 50 within 10km and 15km. As the key characteristics of visitor attractions and recreational opportunities in the area are unlikely to be affected by the proposed development, visitors are still expected to spend time at these accommodation providers. In addition, given their distance from the proposed development, it is unlikely that there will be any impacts on them. For this reason, the effect of the proposed development on the accommodation providers identified in the baseline has been assessed as **negligible**.
- 12.8.65 During the construction of the proposed development, some workers may use local accommodation providers overnight. The effect of this on local accommodation providers was assessed as negligible and beneficial.

### Recreational Trails

- 12.8.66 There are five recreational trails within 5km of the proposed development. 'Calfield Rig and Mid Hill' is a trail that leaves Langholm and heads through farmland to reach the open moorland ridge of Calfield Rig, Black Knowe and Mid Hill. As the walk is a circuit, only part of it will be facing towards the direction of the proposed development. Evidence from the LVIA suggests that the Langholm Hills will experience significant visual effects. However, given the presence of the existing Solwaybank Wind Farm, walkers would already be aware of wind energy developments as an established element within the landscape. For this reason, its effect on this trail was assessed as **minor**.
- 12.8.67 Duchess Bridge is a circular walk which follows the River Esk upstream from Langholm. Whita Hill is a circular route which starts in Langholm and begins by heading north up the glen before climbing to the summit, Warb Law, which is topped by a transmitter mast. Potholm Hill and Castle Hill is a circuit that begins in Langholm heading north through woodland before climbing onto a low ridge with excellent views on the descent back to Langholm. Evidence from the LVIA suggests that the Langholm Hills will experience significant visual effects. However, given the presence of the existing Solwaybank Wind Farm, visitors will already be aware of wind energy developments as an established element within the landscape. Furthermore, motivations for recreational walking include spending time outdoors and doing physical exercise. For this reason, the proposed development's effect on these trails was assessed as **minor**.
- 12.8.68 Based on the LVIA, visual impacts are expected to be more limited as the distance from the proposed development increases. As such, any visual considerations will play a lesser role in visitors' choices. There is a single recreational trail within 5km and 10km of the proposed development. The River Esk and Rowanburn Circuit from the village of Canonbie takes in sections of the River Esk and Liddel Water, woodland and farmland. The walk mostly faces away from the proposed development, and therefore it is unlikely that it will be affected by its presence. It is unlikely that visitors will be deterred from walking on these trails. For this reason, the effect of the proposed development on them was assessed as **negligible**.
- 12.8.69 There are nine recreational trails within 10km and 15km of the proposed development. Bessie's Hill and Castle O'er is a walk that links the sites of two iron-age hill-top forts rising above forestry to give open views above the River White Esk. Given the distance of this trail from the proposed development, this is not expected to have an impact on their usage, and therefore it was assessed that its impact would be **negligible**.
- 12.8.70 Woolhope circuit, near Newcastleton is a circular walk that explores the tracks and hill-farms on the western slopes of Liddesdale. Dykecrofts circular, is a circuit from the village of Newcastleton that goes east before cutting through the forest and visiting the site of the original village Old Castleton. Cross Border Trail is a circuit that climbs gently from Newcastleton to give views over the surrounding hills, before heading through woodland to follow the Kershope Burn along the England/Scotland border. These trails are all primarily to the east of the town of Newcastleton heading in the opposite direction of the proposed development, and therefore its impact on these trails is not expected to have an impact on their usage. For this reason, its effect on these trails was assessed as **negligible**.

- 12.8.71 Hoddom Castle and the Repentance Tower is a walk that explores part of the River Annan and passes Hoddom Castle before climbing to the Repentance Tower. Hoddom Castle to the Solway Firth is a route, which is mostly beside the River Annan as it passes through Brydekirk and Annan before reaching the Solway Firth. ‘River Annan circuit: Annan and Brydekirk’ is a riverside circular route along the banks of the River Annan to Brydekirk. Lochmaben to Hoddom Castle is a route that goes from Lochmaben, continues past Castle Loch through forests and minor roads eventually reaching Hoddom Castle. ‘Eskrigg Nature Reserve circuit from Lockerbie’ is a walk that begins in the town centre of Lockerbie, heading out to the Eskrigg Nature reserve and returning via the Garden of Remembrance. Given the distance of the proposed development from these trails, it is not expected to have an impact on their usage. For this reason, its effect on these trails was assessed as **negligible**.
- 12.8.72 Overall, the proposed development is unlikely to have an impact on the attractiveness and use of any of the recreational walks considered in the baseline. For this reason, its effect on these tourism assets was assessed as **negligible**.
- 12.8.73 Horse riding is a popular activity in rural areas of Scotland. As part of the proposed development, on-site access tracks will provide off-road riding opportunities to horse riders. The effect of the proposed development for horse riding opportunities in the local area was assessed as **negligible** and beneficial.
- 12.8.74 There are three cycling routes that pass close to the proposed development, including National Cycle Route 7 (7.4km to the south) National Cycle Route 74 (8.8km to the south-west) and Regional Cycle Route (RCR) 11 (9.7km to the south-west). Based on the evidence from the LVIA, no significant visual effects on these routes are expected. As visitors will not experience any other changes compared to the baseline, the effect of the proposed development on these routes was assessed as **negligible**.

#### Core Paths

- 12.8.75 The baseline identified seven core paths in and around Langholm, located in the proximity of the proposed development. Most of these core paths are in the opposite direction of the proposed development and form part of a wider choice of core paths in the area. While the LVIA suggests significant effects on landscape are expected in the Langholm Hills RSA, based on the more local usage of these core paths and the wide choice of walks in the area, the proposed development’s effect was assessed as **minor**.

- 12.8.76 A further four core paths were identified in the vicinity of Gilnockie Tower. These core paths are 5km from the proposed development and, given the presence of the existing operational Solwaybank Wind Farm, it is not expected that it will reduce their usage. For this reason, the proposed development’s effect on these core paths was assessed as **negligible**.

#### Decommissioning Effects

- 12.8.77 There exists limited evidence on the economic benefits associated with the decommissioning of an onshore wind farm. This is because only a few sites, which were built in the 1990s, have reached this phase of their lifetime.
- 12.8.78 Decommissioning is expected to take place in reversal order of construction. The scale of works required could be similar to that involved in the construction and development phase. On this basis, it is unlikely that the decommissioning of the proposed development will have any significant effects on the economies of Dumfries and Galloway and Scotland.

## 12.9 Mitigation

- 12.9.1 There are no proposed mitigation measures in relation to the effects of the proposed development on socio-economics and tourism.

## 12.10 Assessment of Residual Effects

#### Residual Construction Effects

- 12.10.1 Following mitigation, the proposed development’s effect on the economies of Scotland and Dumfries and Galloway during the construction phase was assessed as **negligible** (beneficial).

#### Residual Operational Effects

- 12.10.2 Following mitigation, the proposed development’s effect on the economies of Scotland and Dumfries and Galloway during the operations and maintenance phase was assessed as **negligible** (beneficial).
- 12.10.3 Similarly, the effect of the proposed development on the finances of Dumfries and Galloway Council through the payment of non-domestic rates was assessed as **negligible** (beneficial).
- 12.10.4 The effect of the proposed development on the recreational activities, core paths, visitor attractions and accommodation providers was assessed as **negligible**.

## 12.11 Assessment of Cumulative Effects

12.11.1 A total 33 sites at different stages of their development have been identified as being within 35km from the proposed development:

- 20 operational developments, including:
  - Solwaybank;
  - Ewe Hill;
  - Craig Wind Farm;
  - Craig Extension;
  - Craig Extension 2;
  - Crossdykes;
  - Minsca;
  - Crossdykes;
  - Beck Burn (Cumbria);
  - Hall Burn;
  - Todhills (Cumbria);
  - Tempest Tower;
  - Spital Sykes Farm;
  - Minnygap;
  - Harestanes;
  - Hellrigg;
  - Midtown Farm;
  - Great Orton;
  - Orton Park; and
  - Orton Grange Farm.
- two consented developments, including:
  - Little Hartfell; and
  - Pines Burn.
- seven which are under application, including:
  - Callisterhall;
  - Loganhead;
  - Hopsrig;
  - Faw Side;
  - Scoop Hill;
  - Teviot;and
  - Harstanes South.

12.11.2 These sites at various stages of their development represent an economic opportunity for the local supply chain in Dumfries and Galloway. Given the existing operational developments and developments that have already received approval in the proximity of the proposed development, the proposed development has the potential to generate beneficial cumulative impacts. This will be the case if it were to further encourage the development of a local renewable energy supply chain. The presence of an existing supply chain in the local area and a pipeline of projects may also lead to new businesses engaging with the sector.

12.11.3 The development of a strong local supply chain would help to increase the economic benefits of the proposed development and similar projects in Dumfries and Galloway, which could help to increase the magnitude of the beneficial economic effects considered in this chapter.

12.11.4 Efforts to attract new entrants into the onshore wind market could also potentially help to address potential issues associated with the capacity of the local market to meet the demands of the onshore wind energy sector in this area. This will be of relevance to the specialised contractors within the development, wind turbine and grid connection contracts. The employment supported by the balance of plant contracts is less likely to be affected by capacity issues due to lower levels of specialisation.

12.11.5 Similarly, the majority of the sites considered in the cumulative assessment would also provide community benefit funding to support economic development and the investment priorities of local communities. The larger funds that would be available would also allow these communities to undertake more strategic level project investments which could have a larger economic impact.

### Tourism and Recreation

12.11.6 The cumulative visual effects are assessed within Chapter 5: Landscape & Visual Impact Assessment. This describes the potential visual impacts of the proposed development in the context of other onshore wind energy projects in the area. There are multiple onshore wind farms that will be visible in the area and therefore from the majority of viewpoints the proposed development will be seen as part of a group with Solwaybank Wind Farm and other existing and proposed wind farms in the area.

- 12.11.7 The cumulative visual impact assessment does identify significant and adverse effects, when all the onshore wind projects are considered. For example, the cumulative visual effects on the Langholm Hills RSA will be significant and adverse, compared to a not significant visual effect from the proposed development on its own.
- 12.11.8 As discussed in 12.8.53, visual effects in themselves do not indicate an effect on tourism and recreation assets. The effects on tourism and recreational assets will be determined by how users react to these effects. The presence of significant cumulative visual effects, without the proposed development, and the grouping of the proposed development with Solwaybank Wind Farm, would indicate that the contribution of the proposed development to changes in cumulative effects is marginal. Users are unlikely to react to this marginal change of cumulative effect more than they would for the proposed development on its own.
- 12.11.9 Therefore, there are not expected to be any significant effects on tourism or recreation assets in the surrounding area. Overall, though there may be some cumulative effects due to the addition of the proposed development that visitors and recreation users may be aware of, it is not expected that this would lead to any change in behaviour.

## 12.12 Summary

- 12.12.1 The socio-economic structure of the local area, of Dumfries and Galloway and the South of Scotland highlight the need for the creation of job opportunities. This is both reflected in the demographic profile of the three areas, which have relatively older populations than Scotland, and in relatively worse labour market outcomes.
- 12.12.2 These trends are set to reinforce in the future as, based on population projections, by 2043 the working age population in the South of Scotland will have fallen by 13.7% compared to 2018, while the population aged 65 and over is expected to increase. This highlights the continual need for the creation of opportunities in the South of Scotland to support the retention of the existing population and attract more workers to the area, enabling economic growth.
- 12.12.3 During its construction and development, the proposed development will deliver a series of economic benefits including for local suppliers. In particular, it was estimated that the expenditure associated with construction activity could generate:
- £7 million GVA and 90 job years in Dumfries and Galloway;
  - £8 million GVA and 110 job years in the South of Scotland; and
  - £32 million GVA and 460 job years in Scotland.

- 12.12.4 The effect of the construction and development of the proposed development on economic activity in Dumfries and Galloway, the South of Scotland and Scotland was assessed as **negligible**.
- 12.12.5 The expenditure required for the operations and maintenance of the proposed development could generate each year:
- £1 million GVA and less than 10 jobs in Dumfries and Galloway;
  - £1 million GVA and less than 10 jobs in the South of Scotland; and
  - £3 million GVA and 30 jobs in Scotland.
- 12.12.6 The effect of the operations and maintenance of the proposed development on economic activity in Dumfries and Galloway, the South of Scotland and Scotland was assessed as **negligible**.
- 12.12.7 Each year the proposed development is also expected to deliver £0.9 million in non-domestic rates. This revenue is set to support the activities carried out by Dumfries and Galloway Council. The effect on local public finances was assessed as **negligible**.
- 12.12.8 The applicant wishes to maximise local economic benefits. In particular, in line with Scottish Government guidance, it is committed to deliver community benefits worth £5,000 per MW of installed capacity. This is expected to result in an annual contribution of £0.6 million in community benefits, which will support projects across local communities.
- 12.12.9 A literature review of the evidence on the relationship between wind farm developments and tourism was carried out. This found that there is no evidence that wind farm developments have an impact on tourism assets at the Scottish and regional level, nor in those areas in the proximity of an onshore wind development.
- 12.12.10 The assessment has also considered tourism assets that are located within 15km from the proposed development. It found that the proposed development is not expected to affect local accommodation providers, recreation trails and tourism attractions.
- 12.12.11 Overall, the assessment found that no socio-economic, tourism and recreation impacts were significant from the perspective of EIA legislation.

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