



Chapter 13

Socio-economics, Tourism and Recreation

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Chapter 13

Socio-economics, Tourism and Recreation

13.1 Introduction

13.1.1 Introduction

1. This chapter of the Environmental Impact Assessment (EIA) evaluates the effects of the proposed Development on socio-economics, tourism and recreation.
2. The assessment has been undertaken on the basis of the proposed Development consisting of up to 11 turbines, each of which would generate around 5.6 MW, and therefore having a potential total installed capacity of approximately 62 MW and a c.20 MW solar energy installation.

13.2 Legislation, Policy and Guidelines

13.2.1 Assessment of Socio-Economic Effects

3. There is no specific legislation, policy or guidance available on the methods that should be used to assess the socio-economic impacts of a proposed onshore windfarm development. The proposed method has however been based on established best practice, including that used in UK Government and industry reports on the sector.
4. In particular, this assessment draws on two studies by BiGGAR Economics on the UK onshore wind energy sector, *Onshore Wind: Direct and Wider Economic Benefits*, published by RenewableUK and the then Department for Energy and Climate Change (DECC) in 2012, which considered the effect on the UK economy (Department of Energy and Climate Change, RenewableUK, 2012) and a subsequent update, *Onshore Wind: Economic Impacts in 2014*, published by RenewableUK in 2015.
5. Similarly, there is no formal guidance on the methods that should be used to assess the effects that windfarm developments may have on tourism and leisure interests, and therefore BiGGAR Economics has assessed the potential impact based on its experience and established methods used in the assessment of tourism effects in windfarm EIAs (which encompasses the consultation response from VisitScotland).

13.3 Consultation

13.3.1 Consultees and Scoping Responses

6. This section considers the responses that were submitted to the scoping report and shows where are addressed in this chapter. The consultee, their responses and how they have been addressed are summarised in **Error! Reference source not found.**

Consultee	Summary of Response	Comment/ Action Taken
Cree Valley Community Council	<p>'If more turbines are built, then the balance of perception of a visitor to the area could be tipped from that of an unspoilt scenic area with a few wind turbines, to that of a giant Windfarm with some unspoilt scenery. This change of perception is a serious risk and would have a catastrophic impact on the tourist economy in Cree Valley area. To be blunt, our market town of Newton Stewart would suffer much more than the other small villages as it contains the vast bulk of all the tourist infrastructure in the area, such as hotels and retail outlets. A wide-ranging study should therefore be carried out in respect to this risk';</p> <p>'...If the potential Community Benefit Package is to be included in the Socio-Economic Assessment for the Kilgallioch Windfarm Extension, then both the amount of it and the detail of how it will be awarded must be disclosed by SPR in advance of any Planning Application and must be included as a "Condition" of any Planning Approval';</p> <p>'We would not find it acceptable for the new windfarm extension simply to be integrated into the existing fund distribution system through the Kilgallioch Community Benefit Company Ltd as we believe that serious errors and inequities occurred in the set up and organisation of this fund'.</p>	<p>The impact of the proposed Development on accommodation providers and other tourism assets is discussed in Section 13.6.5.</p> <p>The provision of Community Benefit Funding is not a material consideration in the planning process but is considered in Section 13.6.4.1.</p>
Visit Scotland	Suggest that full consideration is also given to the Scottish Government's 2008 research on the impact of windfarms on tourism.	A review of the literature on the relationship between windfarms and tourism is considered in Section 13.6.5.1 .
ScotWays	Impact of the proposed Development on recreational access to the Southern Upland Way: 'We are concerned about the impact the wind farm development will have on the views from the Southern Upland Way (SUW). As we are aware of a large number of wind farm applications along this nationally important route the Society anticipates that the cumulative impact on the length of the SUW, as well as this individual section, will be taken into account'.	The effect of the proposed Development on trails is considered in Section 13.6.5.5 .
British Horse Society	Asked that equestrian access rights are taken into account	The effect of the proposed Development on trails is considered in Section 13.6.5.5 .

Table 13.3.1 Consultation Responses

13.4 Assessment Methodology and Significance Criteria

13.4.1 Assessment of Socio-Economic Effects

7. The assessment of economic effects was undertaken using a model that has been developed by BiGGAR Economics specifically to estimate the socio-economic effects of windfarm developments. This model was also the basis of an assessment of the UK onshore wind sector for the then Department of Energy and Climate Change (DECC) and RenewableUK in 2012 (Department of Energy and Climate Change, RenewableUK, 2012), which was

subsequently updated in 2015 (RenewableUK, 2015). These assessments were based on case studies of the local, regional and national socio-economic effects of windfarms that have been developed in the UK in recent years.

8. This approach is considered industry best practice in the assessment of the socio-economic effects of the onshore wind sector. This model has been used by BiGGAR Economics to assess the socio-economic effects of numerous windfarms across the UK, with the results being accepted as robust at several public inquiries.
9. The assumptions made have been based on two main sources:
 - the analysis undertaken in the 2015 report on behalf of RenewableUK, which uses evidence from previous windfarms around the UK. This report examined the size and location of contracts for their development and construction, and operation and maintenance phases; and
 - assessment of the economies of the relevant study areas undertaken, based on analysis of local, regional and national statistics.

13.4.2 Stages in Socio-Economic Analysis

10. To begin estimating the economic activity supported by the proposed Development, it is first necessary to calculate the expenditure during the construction & development, and operational & maintenance phases. The total expenditure figure is then divided into its main components using calculated assumptions regarding the share that could be expected by main and sub-contractors. This provides an estimate for each main component contract that can be secured by companies in Dumfries and Galloway, South Ayrshire, and Scotland.
11. There are the three sources of economic activity:
 - component contracts and the jobs they support;
 - wider spending in the supply chain (indirect effect); and
 - spending of people employed in these contracts (induced effect).
12. There are four key stages of this model, which are illustrated in
13. **Illustration 13.4.1:**
 - estimation of total capital expenditure;
 - estimation of the value of component contracts that make up total expenditure;
 - assessment of the capacity of businesses in the study area to perform and complete component contracts; and
 - estimation of economic impact from resultant figures.
14. In 2017, BVG Associates (BVG Associates, 2017) conducted an evaluation of the benefits from onshore renewable based on data from eight windfarms, including the Operational Kilgallioch Windfarm. The approach used in that analysis is similar to the approach used in this assessment, in that both focus on expenditure in the supply chain and assess where the activity is likely to take place.

15. A similar approach has been followed in order to estimate the socio-economic impact arising from the solar installation.

13.4.3 Tourism and Recreation Assessment

16. The potential effects of windfarm developments on the tourism and recreation sector is well-researched, and as such, key studies have been included for reference, including:
 - The Economic Impacts of Wind Farms on Scottish Tourism (Glasgow Caledonian University/Moffat Centre, 2008);
 - A Report on the Achievability of the Scottish Government's Renewable Energy Targets (Scottish Parliament Economy, Energy and Tourism Committee, 2012); and
 - Wind Farms and Tourism Trends (BiGGAR Economics, 2017).

17. Tourist attractions and accommodation are identified within the vicinity of the proposed Development. Tourist attractions include permanent fixtures (e.g. museums, castles and trails) as well as temporary events (e.g. music or arts festivals).
18. Important attractions attributed to Dumfries and Galloway and South Ayrshire are also identified due to their importance, even if they are not within the vicinity of the proposed Development.

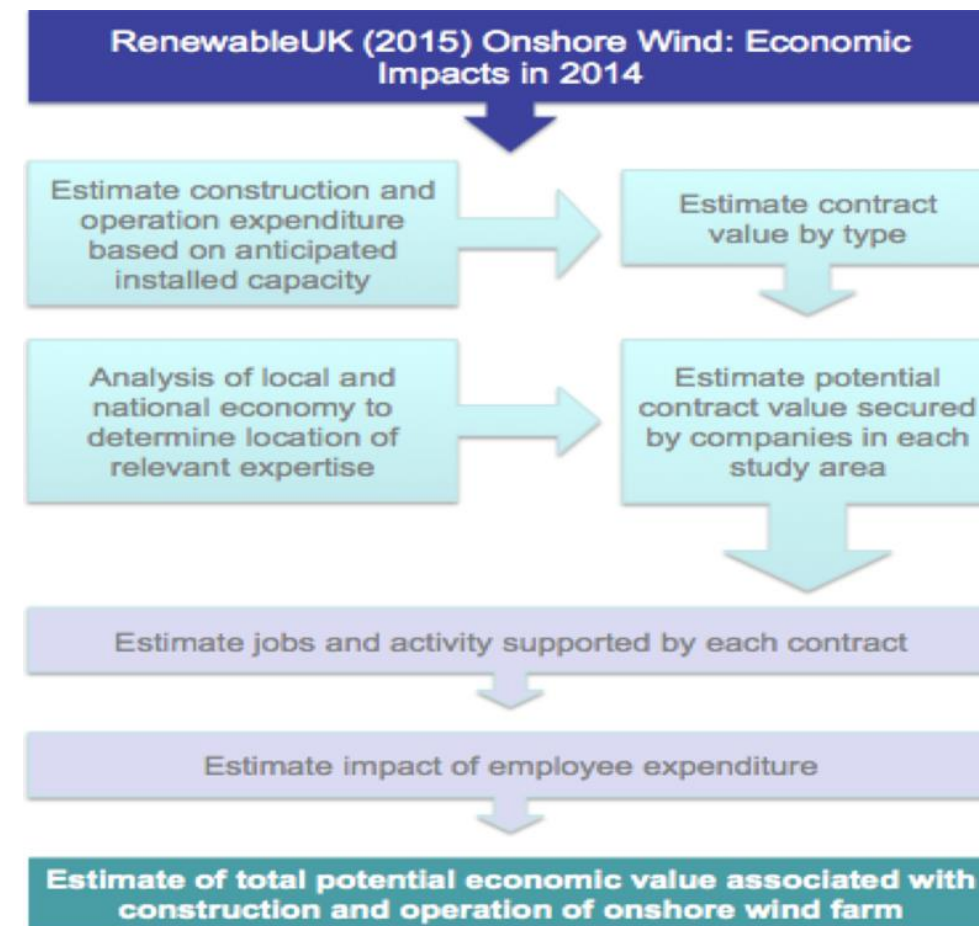


Illustration 13.4.1: Approach to Economic Impact Assessment

13.4.4 Effects Evaluation Methodology

19. The significance of the effect of the proposed Development on each tourism and recreation asset and the economy for each study area is considered by determining the type and magnitude of change on each.
20. The impact magnitude is assessed using the economic model and professional judgement, considering socio-economic effects from the proposed Development on Dumfries and Galloway, South Ayrshire and Scotland. The significance of effects from the proposed Development on tourism and recreation assets are assessed with reference to evidence from research and comparable windfarm developments.
21. The significance of effect on each economic, tourism and recreational asset is determined on the basis of the criteria provided below, in **Table 13.4.1**.
22. Major and moderate effects are considered significant in relation to *Environmental Impact Assessment Regulations* (2017).

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

Table 13.4.1 Significance Criteria

13.4.5 Limitations of Assessment

23. The assessment is based on the experience of comparable developments elsewhere and a review of the local socio-economic context. In order to maximise the economic effects associated with the proposed Development, it will be necessary for local contractors to engage with the opportunities that arise, which can be aided by the applicant increasing awareness of these opportunities.

13.5 Baseline Conditions

24. The section sets out the baseline conditions of Scotland, as well as Dumfries and Galloway, where the proposed Development is located, and South Ayrshire, which the proposed Development is located close to. In addition, the baseline also considers a Local Area that includes locations in both local authority areas, covering the western part of Dumfries and Galloway and the southern part of South Ayrshire. It includes the statistical intermediate zones of Machars North, Machars South, Newton Stewart, Rhins North, Rhins South, Stranraer West, Stranraer East and Stranraer South in Dumfries and Galloway, and Carrick South, Girvan Ailsa and Girvan Glendoune in South Ayrshire. The Local Area is shown on **Figure 13.1**.

13.5.1 Strategic Economic Context

13.5.1.1 Scotland's Economic Action Plan 2018-20

25. The Scottish Government's Economic Action Plan (Scottish Government, 2018) sets out how it plans to make Scotland a leader in technological and social innovations. It aims to deliver higher productivity and greater competitiveness, while transitioning to a carbon neutral economy through measures that support business, and encouraging investment, innovation and upskilling.

26. At the heart of this strategy is inclusive growth, combining increased prosperity with greater equity, which requires getting the fundamentals right. These include:

- Investment: boosting private and public investment and delivering world-class infrastructure;
- Enterprise: ensuring a competitive business environment;
- International: growing exports and attracting international investment;
- Innovation: supporting world-leading innovation;
- Skills: providing a highly skilled workforce;
- Place: supporting thriving places;
- People: ensuring a sustainable working population where everyone can participate in and benefit from increased prosperity; and
- Sustainability: seizing the economic opportunities in the low carbon transition.

13.5.1.2 Scottish Energy Strategy

27. In December 2017, the Scottish Government published the *Scottish Energy Strategy* (Scottish Government, 2017), which sets out the Government's vision for Scotland's energy future.
28. In 2016, 54.4% of all electricity in Scotland was generated renewably, with a target of producing 100% from renewable sources by 2020. This increased to 73.9% in 2018. The overall share of energy consumption, which includes heat and transport, produced by renewables was 19.8% (Scottish Government, 2019). By 2030, the Scottish Government wants the proportion of all energy, including heat and transport, supplied from renewable sources to increase to 50%.
29. The Scottish Government has also highlighted that renewables present an economic opportunity as an expanding market which will continue to support Scottish economic growth. The Scottish Government will continue to support businesses in this sector.
30. Additionally, the Scottish Government has emphasised the importance of communities benefitting from renewable energy generation, including through community benefit funds (Scottish Government, 2018) and shared ownership (Scottish Government, 2019).

13.5.1.3 Dumfries & Galloway Regional Economic Strategy 2016-2020

31. The *Dumfries and Galloway Regional Economic Strategy* (Dumfries and Galloway Council, 2016) identifies a number of key challenges in the local authority area, including:

- a high proportion of jobs are part-time and there is a high youth unemployment rate;
- a large percentage of the population are in areas defined as 'access deprived';
- mobile phone coverage is poor or non-existent; and
- the population is decreasing and ageing.

32. A number of strategic actions were also outlined to address Dumfries and Galloway's challenges:

- supporting growing and higher value businesses, as well as improving supply chains;
- invest in effective transport links and better ICT infrastructure; and
- maximise the potential of available employment land and property.

33. The strategy also highlights that Dumfries and Galloway is well-placed to contribute to renewable energy targets, through the development of on and off-shore wind energy, and that this can have community benefits. Energy is highlighted as a key sector where there is potential for growth.

13.5.1.4 South Ayrshire Economic Development Strategy 2013-2023

34. The *South Ayrshire Economic Development Strategy 2013-2023* (South Ayrshire Community Planning Partnership, 2013) identifies seven future goals for South Ayrshire, one of which is a more diversified economy.

35. The strategy acknowledges that South Ayrshire has a lower proportion of employment (22%) in the Scottish Government's six priority industries compared to the rest of Scotland (31%). Diversification into these industries (one of which is energy) will help to create a more resilient economy.

13.5.2 Baseline Economic Context

13.5.2.1 Population

36. The population of the Local Area is 40,468 (National Records of Scotland, 2019). The Local Area has a higher proportion of the population aged 65 and over (26.9%) than both Dumfries and Galloway (25.5%), South Ayrshire (25.0%) and Scotland (18.9%). In addition, it has a relatively smaller working age population (57.5%) compared to regional (58.8% and 59.3% respectively) and national averages (64.2%).

	Local Area	Dumfries & Galloway	South Ayrshire	Scotland
Total	40,068	148,790	112,550	5,438,100
0-15	15.6%	15.7%	15.7%	16.9%
16-64	57.5%	58.8%	59.3%	64.2%
65 and over	26.9%	25.5%	25.0%	18.9%

Source: National Records of Scotland (2019), Population

Table 13.5.1 Population and Demography (2017)

37. By 2041 the populations of Dumfries and Galloway and South Ayrshire are expected to decrease by 5.2% and 4.9% respectively compared to 2016. In contrast, Scotland's population is expected to grow by 5.3% (National Records of Scotland, 2017).
38. The population aged 65 and over are also projected to increase to over a third (33.8% in Dumfries and Galloway and 34.5% in South Ayrshire) by 2041, compared to 24.7% and 24.2% in 2016. This is significantly higher than the projected level of 25.3% in Scotland. The working age population is also expected to fall from 59.5% to 51.5% in Dumfries and Galloway and from 60.0% to 50.9% in South Ayrshire, compared to 58.9% in Scotland. Given the existing population structure of the Local Area in comparison to the local authority areas it is likely that the population structure will continue to age.

	Dumfries & Galloway		South Ayrshire		Scotland	
	2016	2041	2016	2041	2016	2041
Total	149,520	141,818	112,470	106,974	5,404,700	5,693,201
0-15	15.8%	14.7%	15.8%	14.6%	16.9%	15.8%
16-64	59.5%	51.5%	60.0%	50.9%	64.6%	58.9%
65 and over	24.7%	33.8%	24.2%	34.5%	18.5%	25.3%

Source: National Records of Scotland (2018), Sub-national Population projections 2016-2041

Table 13.5.2 Population Change (2016-2041)

13.5.2.2 Economic Activity

39. The rate of economic activity, which represents the proportion of working age people in the labour force, is lower in Dumfries and Galloway (73.7%) and South Ayrshire (72.4%) than in Scotland (77.4%), although the unemployment rate (2.3% and 3.4% respectively) is lower than in Scotland (4.3%) (Office for National Statistics, 2019). The median annual wage in Dumfries and Galloway (£24,100) is 17.7% lower, compared to £29,200 in Scotland and £30,900 in South Ayrshire (Office for National Statistics, 2018).

	Dumfries & Galloway	South Ayrshire	Scotland
Economic Activity Rate (16-64)	73.7%	72.4%	77.4%
Unemployment Rate (16-64)	2.3%	3.4%	4.3%
Median Annual Wage	£24,100	£30,900	£29,200

Source: ONS (2019), Annual Population Survey 2018. ONS (2019), Annual Survey of Hours and Earnings 2018.

Table 13.5.3 Economic Indicators, 2018

13.5.2.3 Industrial Structure

40. There are 8,800 people employed in the Local Area, with the main employment centres in Stranraer, Newton Stewart, Girvan and South Carrick to the east of Girvan, representing 10.9% of employment in Dumfries and Galloway and South Ayrshire. It should be noted that the published statistics for the Local Area exclude farm agriculture, and agriculture may represent a higher share of employment than indicated.
41. The main industry of employment in the Local Area is wholesale and retail trade (16.4% of employment), which is higher than in Dumfries and Galloway (15.5%) and Scotland (13.6%), but lower than in South Ayrshire (17.3%). Accommodation and food services account for 15.4%, which is higher than Dumfries and Galloway (8.1%), South Ayrshire (10.2%) and Scotland (7.9%) and is a sector typically associated with tourism.

42. Manufacturing is an important regional sector, accounting for 8.9% of local employment, and 8.9% and 10.2% for each of the local authority areas, compared to the national average of 6.9%. In the Local Area, employment in construction is also relatively high (6.4%) compared to the Scottish average (5.5%), Dumfries and Galloway (4.8%) and South Ayrshire (4.8%).
43. The Local Area and local authority areas also have a lower proportion of employment in professional services than the national average of 7.0%, with 2.9% in the Local Area, 5.9% in Dumfries and Galloway and 4.6% in South Ayrshire (Office for National Statistics, 2019).

	Local Area	Dumfries & Galloway	South Ayrshire	Scotland
Agriculture, forestry and fishing	2.7%*	11.8%	3.3%	3.2%
Mining and quarrying	0.2%	0.1%	0.3%	1.1%
Manufacturing	8.9%	8.9%	10.2%	6.9%
Electricity, gas, steam, air conditioning	0.3%	0.4%	0.1%	0.7%
Water supply, sewerage etc.	0.3%	1.0%	0.4%	0.8%
Construction	6.4%	4.8%	5.1%	5.5%
Wholesale and retail trade	16.4%	15.5%	17.3%	13.6%
Transportation and storage	4.2%	4.1%	5.1%	4.2%
Accommodation and food services	15.4%	8.1%	10.2%	7.9%
Information and communication	0.7%	0.9%	1.1%	3.1%
Financial and insurance activities	0.7%	0.9%	1.5%	3.4%
Real estate activities	1.7%	1.7%	1.3%	1.5%
Professional, scientific and technical activities	2.9%	5.9%	4.6%	7.0%
Administrative and support service activities	4.0%	4.4%	3.3%	7.9%
Public administration and defence	5.9%	4.1%	5.1%	6.0%
Education	8.6%	7.0%	6.6%	7.4%
Human health and social work activities	16.3%	16.3%	18.3%	15.1%
Arts, entertainment and recreation	3.1%	2.4%	3.1%	2.7%
Other service activities	1.4%	1.7%	3.1%	2.1%
Total	12,725	67,500	49,000	2,611,500

Source: ONS (2019), Business Register and Employment Survey 2018. * Does not include farm agriculture

Table 13.5.4 Industrial Structure, 2018

13.5.2.4 Baseline Economic Context Summary

44. The population of the Local Area is relatively older than the regional and national averages and is likely to decrease in the future, which may reflect fewer economic opportunities than elsewhere, encouraging working age people to move away. Similarly, the economic activity rate is relatively lower in South Ayrshire and Dumfries and Galloway, which also has a low median annual wage. The largest sector of employment in the Local Area is wholesale and retail trade, though accommodation and food services also have a high share of employment. There is also significant employment in construction and manufacturing, although higher value sectors such as professional, scientific and technical activities are under-represented.

13.5.3 Strategic Tourism Context

13.5.3.1 Tourism Scotland 2020

45. *Tourism Scotland 2020* (Scottish Tourism Alliance, 2012), created and maintained by the Scottish Tourism Alliance, is the national tourism strategy for Scotland. It was created in 2012 with the goal of increasing visitor-spend by one billion pounds, from £4.5 billion to £5.5 billion by 2020. Key performance indicators associated with this goal to measure progress include:

- grow visitor-spend by £1 billion from £4.5 billion to £5.5 billion by 2020;
- increase the advocacy score for Scotland from 25%;
- increase the average visitor-spend from £358.56;
- increase the total tourism employment figures from 185,100; and
- increase total tourism turnover from £6.2 billion.

46. The strategy was reviewed in 2016 (Scottish Tourism Alliance, 2016) at the mid-term point of the policy with further priorities being identified to achieve the targets for 2020 set in 2012, including:

- strengthening digital capabilities;
- strengthen industry leadership;
- enhance the quality of the visitor experience; and
- influence investment, specifically flight access & transport connectivity, built infrastructure, digital connectivity and business growth finance.

13.5.3.2 Dumfries and Galloway Regional Tourism Strategy 2016-2020

47. The *Dumfries & Galloway Regional Tourism Strategy* (Dumfries and Galloway Council, 2016) is Dumfries & Galloway Council's plan for growing the value of the tourism sector in the local authority area by £30 million, from £300 million to £330 million by 2020.

48. Three target areas have been identified in this plan, which include:

- 'Creating Authentic Experiences' - developing marine and coastal areas, creating more festivals and events as well as the quality of food & drink;
- 'Improving the Customer Journey' - creating tourism packages, providing improved tourism-related digital information and developing more tourism assets; and
- 'Building our Capabilities' - training more individuals with tourism-relatable skills, improving infrastructure such as broadband and mobile network access and road quality.

13.5.3.3 Ayrshire and Arran Tourism Strategy 2012/2017

49. Tourism policy in South Ayrshire is guided by the *Ayrshire & Arran Tourism Strategy 2012/17* (Ayrshire Economic Partnership, 2011). The main objectives of the strategy are to increase visitor numbers in the area by 10% and to increase annual visitor spend by 20%.

50. The strategy identifies eight attributes of Ayrshire and Arran that attract tourists and have the potential to develop and grow: culture and heritage (including Burns activities and natural environment), golf, sailing, Arran, food and drink, islands, weddings and civil partnerships, business tourism, and events and festivals.

13.5.4 Baseline Tourism Context

13.5.4.1 Tourism Economy

51. The sustainable tourism sector in Dumfries and Galloway accounts for £168.2 million GVA and 6,000 jobs, accounting for 8.9% of total employment. In South Ayrshire the sector contributes £126.4 million GVA and 6,000 jobs, which represents 12.2% of total employment in the area (Scottish Government, 2019).

52. Given that there are 207,000 sustainable tourism jobs in Scotland each local authority area represents 2.9% of Scottish employment in the sector.

	Dumfries & Galloway	South Ayrshire	Scotland
Employment	6,000	6,000	207,000
GVA (£m)	168.2	126.4	3,879.8

Source: Scottish Government (2019), Scottish Growth Sector Database

Table 13.5.5 Sustainable Tourism Employment and Gross Value Added, 2016

13.5.4.2 Visitors

53. The GB Tourist Survey provides the number of domestic overnight visitors by local authority area. It shows that on average there are 0.7 million domestic overnight visitors to Dumfries and Galloway each year, spending £142 million, and 0.3 million domestic overnight visitors to South Ayrshire, spending £74 million. This represents 5.8% and 2.5% of the 12.0 million domestic overnight visits to Scotland each year (Kantar TNS, 2018).

	Dumfries & Galloway	South Ayrshire	Scotland
Trips (m)	0.7	0.3	12.0
Spend (£m)	142	74	3,079

Source: Kantar TNS (2018), The GB Tourist 2017 Annual Report. *This represents the three-year average between 2015-2017

Table 13.5.6 GB Overnight Trips

54. The GB Day Visitor Survey provides the number of day visitors by local authority area. This shows that on average there are 7.0 million day visitors to Dumfries and Galloway, spending £229 million each year, and there are 8.9 million day visitors to South Ayrshire, spending £347 million (Kantar TNS, 2018).

	Dumfries & Galloway	South Ayrshire	Scotland
Trips (m)	7.0	8.9	151.0
Spend (£m)	229	347	5,995

Source: Kantar TNS (2018), The GB Day Visitor 2017 Annual Report. *This represents the three-year average between 2015-2017

Table 13.5.7 Day Visitor Trips

55. Data on overseas trips are provided by the International Passenger Survey (Office for National Statistics, 2019). There were an estimated 39,000 overseas trips to Dumfries and Galloway in 2018, representing 1.1% of all Scottish overseas trips with a total spend of £12 million. There were 103,000 overseas trips to Ayrshire and Arran (figures for South Ayrshire alone are not provided), representing 2.9% of all Scottish overseas trips, with total spend of £73 million.

	Dumfries & Galloway	Ayrshire and Arran	Scotland
Trips (000s)	39	103	3,540
Spend (£m)	12	73	2,210

Source: ONS (2019), International Passenger Survey 2018

Table 13.5.8 Overseas Trips, 2018

13.5.4.3 Tourist Attractions

56. The most popular visitor attractions in Dumfries and Galloway (VisitScotland, 2018) and South Ayrshire (VisitScotland, 2018) are listed in **Table 13.5.9**. The main visitor attractions are at least 35 km from the proposed Development, with the exception of the Galloway Forest Park. The Forest Park is 10 km from the proposed Development at its closest point, it covers an area of 770 km².

57. Other important attractions include golf, with several Championship Links courses in South Ayrshire (including Trump Turnberry and Royal Troon) and the coastal towns, villages and beaches.

	Visitor numbers	Distance to Site (km)	Region
Galloway Forest Park	424,016	10	Dumfries and Galloway
Culzean Castle and Country Park	244,920	36	South Ayrshire
Cream o' Galloway	60,500	38	Dumfries and Galloway
Heads of Ayr Farm park	165,528	47	South Ayrshire
Robert Burns Birthplace Museum	164,316	47	South Ayrshire
Threave Garden	94,951	50	Dumfries and Galloway
Mabie Forest	74,460	65	Dumfries and Galloway
Gretna Green Famous Blacksmith's Shop	812,177	110	Dumfries and Galloway

Source: VisitScotland (2018), Visitors to Dumfries and Galloway/Visitors to Ayrshire and Arran

Table 13.5.9 Regional Visitor Attractions

58. There are a small number of local tourism attractions, which have been identified using VisitScotland's database of visitor attractions (VisitScotland, 2019). These are presented in **Table 13.5.10**, and as can be seen each of the attractions is over 10 km from the proposed Development.

	Description	Distance to Site (km)
Glentool Visitor Centre	The visitor centre for Glentool, which includes trails, lochs and 7stanes mountain biking to its east	14
Castle Kennedy Gardens	A historical country house and gardens on the shores of two small lochs	14

Source: VisitScotland (2019), Things to do Dumfries and Galloway/South Ayrshire. <https://www.visitscotland.com>

Table 13.5.10 Local Visitor Attractions

13.5.4.4 Tourist Accommodation

59. There are a number of accommodation providers located within 15 km of the proposed Development. These include those in **Table 13.5.11**, which were identified through VisitScotland's accommodation database, booking.com and through other web searches:
- near Barrhill, approximately 10-12 km north of the proposed Development, four accommodation providers were identified (Blair Farm Bed and Breakfast, the Lodge, Queensland Holiday Park and Barrhill Holiday Park);
 - to the north east, between Bargrennan and Barrhill, 10-13 km from the proposed Development, there are a further three accommodation providers (Old School House and Annexe, Creeside Escape Shepherd's Hut and Corrafeckloch Forest Cottages);
 - at Bargrennan, to the north east of the proposed Development, there are four accommodation providers, which are 11-13 km away (Garlies Lodge, House O'Hill Hotel, the Orangerie and Glentool Camping and Caravan Park);
 - along the A714 and Rover Cree, approximately 12-14 km east of the proposed Development are four providers (Cordocan Cottage, Barclye Cottage, Barnkirk and 2 North Barnkirk);
 - to the east, approximately 4-5 km away, is Waterside Lodges;
 - to the south and south east of the proposed Development, near Balminnoch and approximately 4-8 km away, are four providers (Carraig Shepherd's Hut, Three Lochs Holiday Park, Balloch O'Dee Holiday Park and Dirnow Schoolhouse);
 - at Kirkcowan, 11 km to the south east there are two accommodation providers (the Craighlaw Arms Hotel and 2 Pend House);
 - at Glenluce, approximately 10-15 km south west of the proposed development there are ten accommodation providers (including Glenluce Caravan Park, the Crown Hotel, East Challoch Farm B&B, Whitecairn Farm Caravan Park and a number of guest houses);
 - at New Luce, which is 7-8 km south west of the proposed Development, there are two accommodation providers (Nadav's Hut and Candida Casa); and
 - approximately 10 km to the north west of the proposed Development is Lagafater Lodge and Estate, which has a number of houses as well as offering opportunities to shoot.

Location	Number of Providers	Distance to site (km)
Polbae	1	4-5
Near Balminnoch	4	4-8
New Luce	2	7-8
Kirkcowan	2	9.5-11
North west	1	10
Barrhill	4	10-12
North east	3	10-13
Glenluce	10	10-15
Bargrennan	4	11-13
A714/River Cree	4	12-14

Source: BiGGAR Economics research (VisitScotland and internet searches)

Table 13.5.11 Local Accommodation Providers

13.5.4.5 Recreational Trails

60. The Southern Upland Way (SUW) is one of Scotland's Great Trails and connects Portpatrick on the west coast with Cockburnspath on the east coast. The length of the trail is 241 miles, and it is used by walkers, cyclists and equestrian riders. It passes through the existing Operational Kilgallioch Windfarm, to the north west of the proposed Development main development area. Sections of the SUW on the Operational Kilgallioch Windfarm were upgraded during its construction and the Operational Kilgallioch Windfarm provides £50,000 per annum funding towards two SUW Rangers to promote, manage and maintain the SUW across Dumfries & Galloway. The SUW and core paths are shown in a local landscape context on **Figure 6.6**.
61. Core paths near the proposed Development include:
- Three Lochs Kirkcowan, 4 km to the south near Balminoch;
 - New Luce to Kilhern, 7 km to the south west;
 - Penninghame Ponds, 10 km to the east of the proposed Development;
 - Water of Luce, 12 km to the south near Glenluce;
 - Glenkitten Fell, approximately 2 km from the proposed Development at its nearest point; and
 - the Stranoch to Beneraid and Shennas, 6 km to the west of the proposed Development.

13.5.4.6 Summary of Baseline Tourism Context

62. The tourism sector in Dumfries and Galloway and South Ayrshire is relatively important compared to the Scottish average, particularly in South Ayrshire, driven by golf and the coast. However, there are a small number of accommodation providers and tourist attractions nearby, with the main regional tourist attractions located over 35 km away, with the exception of the Galloway Forest Park, which suggests that the area surrounding the proposed Development does not have a significant tourism presence.

13.6 Potential Effects

13.6.1 Construction and Development

13.6.1.1 Socio-Economics - Windfarm Component

63. The windfarm component of this application is for 11 turbines with a capacity of around 5.6 MW each, giving a combined generating capacity of approximately 62 MW. Using research undertaken by BiGGAR Economics on behalf of RenewableUK in 2015 (RenewableUK, 2015), the average expenditure on the construction and development of windfarms can be estimated based on the average spend per MW, the average spend per turbine, or a combination of the two, as appropriate. On the basis of this methodology the total construction and development cost is estimated to be £70.9 million).

64. This expenditure is split into three main categories of contract:

- development and planning;
- balance of plant, which refers to the supporting infrastructure; and
- turbines.

65. The proportion of construction and development spending that is spent on each of the main categories was also informed by BiGGAR Economics' research into windfarms that are currently in operation in the UK. This found that the largest proportion of capital expenditure (Capex) was on turbine related contracts (73.8%), followed by balance of plant (21.6%), and development and planning (4.7%).

	% Capex	Value (£m)
Development and Planning	4.7%	3.3
Turbines	73.8%	52.3
Balance of Plant	21.6%	15.3
Total	100.0%*	70.9

Source: BiGGAR Economics Analysis of RenewableUK (2015), Onshore Wind: Economic Impacts 2014 *Values do not sum to total due to rounding

Table 13.6.1 Construction and Development Expenditure by Contract Type – Windfarm

66. The economic impact of the construction and development phase was estimated for Dumfries and Galloway and South Ayrshire, and Scotland as a whole. In order to do this, it was necessary to estimate the proportion of each type of contract that might be secured in each of the study areas. The assumptions were based on the average from the RenewableUK research, analysis of the industries and professions in each study area, and BiGGAR Economics' previous experience. To estimate the expenditure for each contract in each of the study areas these percentages were applied to the estimated size of each component contract.

67. On this basis, it was estimated that Dumfries and Galloway and South Ayrshire could secure contracts worth up to £5.8 million, equivalent to 8% of the total capital expenditure. The largest opportunity for Dumfries and Galloway and South Ayrshire would be with the balance of plant contracts as companies in the area could secure 23% of contracts, worth up to £3.5 million.

68. Scotland was estimated to be able to receive contracts worth £22.4 million, equivalent to 35% of the total capital expenditure. The largest opportunities would be the contracts related to the balance of plant and elements of the turbine contract (the supply of towers).

	Dumfries and Galloway and South Ayrshire		Scotland	
	%	£m	%	£m
Development and Planning	10%	0.3	63%	2.1
Turbine	4%	2.0	19%	10.0
Balance of Plant	23%	3.5	68%	10.3
Total	8%	5.8	32%	22.4

Table 13.6.2 Development and Construction Expenditure by Study Area and Contract Type – Windfarm

69. The contract values potentially awarded in each area would represent an increase in turnover of businesses in these areas. Using industry-specific data from the Annual Business Survey (Office for National Statistics, 2018), which gives the turnover/ GVA ratio for each of the industries involved, the GVA impact from any increase in turnover can be estimated.

70. On this basis it was estimated that the development and construction contracts would generate £2.9 million GVA in Dumfries and Galloway and South Ayrshire, and £11.0 million GVA in Scotland.

	Dumfries and Galloway and South Ayrshire	Scotland
Development and Planning	0.2	1.4
Turbine	0.9	4.6
Balance of Plant	1.8	5.0
Total	2.9	11.0

*Note, totals may not add up due to rounding

Table 13.6.3 Development and Construction GVA by Study Area and Contract Type – Windfarm

71. Similarly, the contract values potentially awarded in each area would support employment. Turnover per employee for each of the industries involved is also given by the Annual Business Survey, which allows the employment from any increase in turnover to be estimated.

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

73. In this way, the construction and development impacts were estimated to support 45 job years in Dumfries & Galloway and South Ayrshire, with 26 job years being related to the balance of plant contracts. In Scotland, 175 job years are estimated to be supported, of which 81 job years are related to the turbine contracts.

	Dumfries and Galloway and South Ayrshire	Scotland
Development and Planning	3	20
Turbine	16	81
Balance of Plant	26	74
Total	45	175

Table 13.6.4 Construction and Development Employment in Job Years – Windfarm

74. There would also be knock on effects in the supply chain and from spending by employees in the local economy. These effects are estimated by applying Type I (indirect) and Type II (indirect and induced) GVA and employment multipliers, which are sourced from the Scottish Government (Scottish Government, 2018), to the direct GVA and employment impacts.

75. In order to adjust these multipliers, which consider the national economy, for the economy of Dumfries and Galloway and South Ayrshire it was assumed that indirect multiplier effects would be 33% of the national impact, and induced multiplier effects, which consider the effect of local spending, would be 70% of the national impact.

76. In this way it was estimated the indirect impact in Dumfries and Galloway would be £0.4 million GVA and 7 job years in Dumfries and Galloway and £4.3 million GVA and 69 jobs years in Scotland.

	Dumfries and Galloway and South Ayrshire	Scotland
Indirect Impact (£m)	0.4	4.3
Indirect Impact (job years)	7	69

Table 13.6.5 Development and Construction Indirect Impact (£m) – Windfarm

77. It was estimated induced impact during the development and construction phase would be £0.6 million GVA and 8 job years in Dumfries and Galloway and South Ayrshire, and £3.4 million GVA and 45 job years in Scotland.

	Dumfries and Galloway and South Ayrshire	Scotland
Induced Impact (£m)	0.6	3.4
Induced Impact (job years)	8	45

Table 13.6.6 Development and Construction Induced Impact (£m) – Windfarm

78. The total impact during the construction and development phase is the sum of the direct impacts, the indirect and the induced impacts. The total combined impact was estimated to be £4.0 million GVA and 60 job years in Dumfries and Galloway and South Ayrshire, and £18.6 million GVA and 289 job years in Scotland.

	Dumfries and Galloway and South Ayrshire	Scotland
Economic Impact (£m)	4.0	18.6
Employment (job years)	60	289

Table 13.6.7 Economic Impact During Construction and Development – Windfarm

79. It is expected that during the construction and development phase, the effect of the proposed Development would be minor beneficial in Dumfries and Galloway and South Ayrshire, and negligible beneficial in Scotland.

13.6.1.2 Socio-Economics – Solar Component

80. This section considers the socio-economic impact from the construction and development of the solar energy element of the proposed Development, which is expected to have a capacity of approximately 20 MW.
81. The first step in estimating the economic impact from the construction and development phase required the estimation of the total construction and development costs. These were estimated by multiplying the total expected installed capacity by the cost per MW of construction and development contracts. The breakdown of construction and development costs was based on estimates for 2020 from a 2014 study by the Solar Trade Association (Solar Trade Association, 2014). Those figures were adjusted on the basis of a levelised cost of electricity (LCOE) in 2019 of between £ 44-70 MWh (Solar Power Portal, 2018), to account for the changes in technology since 2014, which have resulted in considerable cost reductions.
82. Based on analysis of the contract opportunities and the structure of the regional and Scottish economy, it was estimated that around 10% of construction and development spending could take place in Dumfries and Galloway and South Ayrshire and around 35% in Scotland. This would be equivalent to a turnover of equivalent to £1.1 million and £3.8 million respectively.
83. In order to estimate the direct economic impact from the construction and development phase, the areas of construction and development expenditure were mapped to the industry that would likely deliver the contracts, on the basis of Standard Industrial Classification (SIC) codes. Expenditure in each industry by study area was then divided by the turnover/GVA and turnover/employee ratios for each industry from the 2017 Annual Business Survey (Office for National Statistics, 2018).
84. In this way, it was estimated that the construction and development phase could support £0.5 million direct GVA and 7 job-years in Dumfries and Galloway and South Ayrshire and £1.7 million direct GVA and 25 job-years in Scotland.
85. There would also be knock on effects in the supply chain and from spending by employees in the local economy. These effects were estimated by applying Type I (indirect) and Type II (indirect and induced) GVA and employment multipliers, which were sourced from the Scottish Government (Scottish Government, 2018), to the direct GVA and employment impacts.
86. In order to adjust these multipliers, which consider the national economy, for the economy of Dumfries and Galloway and South Ayrshire it was assumed that indirect multiplier effects would be 33% of the national impact, and induced multiplier effects, which consider the effect of local spending, would be 70% of the national impact.

87. Adding together direct, indirect and induced impacts, it was estimated that the total economic impact during the construction and development of the solar component of the proposed Development would be £0.7 million GVA and 9 jobs in Dumfries and Galloway and South Ayrshire and £3.1 million GVA and 45 jobs in Scotland.

	Dumfries and Galloway and South Ayrshire	Scotland
Economic Impact (£m)	0.7	3.1
Employment (job years)	9	45

Table 13.6.8 Economic Impact During Construction and Development – Solar Installation

88. It is expected that during the construction and development phase of the solar installation, the effect of the proposed Development would be negligible beneficial in Dumfries and Galloway and South Ayrshire, and negligible beneficial in Scotland.

13.6.1.3 Recreational Trails

89. Part of the Southern Upland Way, which passes through the Operational Kilgallioch Windfarm, may be affected by the proposed Development, as a result of construction works. This would be expected to have a minor effect on the trail, which is also used by horse riders and cyclists. However, as discussed in the **Section 13.7**, an access plan would be developed to minimise disruption and the Operational Kilgallioch Windfarm funded SUW Rangers can assist with managing communication of any temporary diversion or other measure proposed to SUW users. On this basis, the effect would be negligible.

13.6.2 Operation and Maintenance – Windfarm Component

90. The operation and maintenance impact of the proposed Development was estimated as the impact that would persist throughout the lifespan of the proposed Development.
91. Annual expenditure on operations and maintenance was estimated based on analysis undertaken in the 2015 RenewableUK report. It was estimated that the annual operations and maintenance expenditure associated with the proposed Development could be up to £1.7 million (which excludes community benefit payments and non-domestic rates).
92. In order to estimate the economic impact of the operation and maintenance expenditure in each of the study areas it was first necessary to estimate the proportion of contracts that could be secured in each of these areas. These assumptions were based on the contract proportions reported in the RenewableUK report and the analysis of the industries present in each of the study areas.
93. On this basis it was estimated that Dumfries and Galloway and South Ayrshire could secure 34% of operation and maintenance contracts, worth £0.6 million, and that Scotland could secure 48% of contracts, worth £0.8 million.

	Dumfries and Galloway and South Ayrshire		Scotland	
	%	£m	%	£m
Operation and Maintenance	34	0.6	48	0.8

Table 13.6.9 Operation and Maintenance Expenditure by Study Area – Windfarm

94. 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 in the same way as the construction expenditure, using the Annual Business Survey (Office for National Statistics, 2018).
95. In this way, it was estimated that turnover generated by the operation and maintenance of the proposed Development could support £0.3 million GVA and 5 jobs in Dumfries and Galloway and South Ayrshire, and £0.4 million GVA and 6 jobs in Scotland.

	Dumfries and Galloway and South Ayrshire	Scotland
GVA (£m)	0.3	0.4
Employment (jobs)	5	6

Table 13.6.10 Operation and Maintenance Direct Impact – Windfarm

96. There would also be indirect and induced impacts during the operation and maintenance of the proposed Development, which were estimated using the same method as for the development and construction phase.
97. Adding together the direct, indirect and induced impacts, it was estimated that the total economic impact would be £0.4 million GVA and 6 jobs in Dumfries and Galloway and South Ayrshire, and £0.6 million and 9 jobs in Scotland.

	Dumfries and Galloway and South Ayrshire	Scotland
Economic Impact (£m)	0.4	0.6
Employment (jobs)	6	9

Table 13.6.11 Economic Impact During Operation and Maintenance – Windfarm

98. It is expected that the effect on the economy of Dumfries and Galloway and South Ayrshire would be negligible beneficial, due to the scale of the regional economy as a whole. In Scotland, it is expected that the effect would also be negligible beneficial.

13.6.3 Operation and Maintenance- Solar Component

99. On the basis of data from the Solar Trade Association (Solar Power Portal, 2018), it was estimated that the annual cost per MW installed incurred during the proposed Development's operation would be around £14,500. Based on an installed capacity of c.20 MW, it was estimated that the total annual expenditure on operation and maintenance would be around £0.3 million.
100. It was estimated that around 44% of operation and maintenance spending could take place in Dumfries and Galloway and South Ayrshire and 72% in Scotland. As a result, operation and maintenance expenditure would be equivalent to £0.1 million and £0.2 million respectively.
101. 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 in the same way as the construction expenditure, using the Annual Business Survey (Office for National Statistics, 2018).
102. In this way, it was estimated that turnover generated by the operation and maintenance of the proposed Development every year could support £0.1 million GVA and 1 job in Dumfries and Galloway and South Ayrshire, and £0.1 million GVA and 2 jobs in Scotland.
103. There would also be indirect and induced impacts during the operation and maintenance of the proposed Development, which were estimated using the same method as for the development and construction phase.
104. Adding together direct, indirect and induced impacts, it was estimated that the annual economic impact during the operation and maintenance of the solar component of the proposed Development would be £0.1 million GVA and 2 jobs in Dumfries and Galloway and South Ayrshire and £0.2 million GVA and 3 jobs in Scotland.

	Dumfries and Galloway and South Ayrshire	Scotland
GVA (£m)	0.1	0.2
Employment (jobs)	2	3

Table 13.6.12 Economic Impact During Operation and Maintenance – Solar Installation

105. It is expected that the effect on the economy of Dumfries and Galloway and South Ayrshire would be negligible beneficial, due to the scale of the regional economy as a whole. In Scotland, it is expected that the effect would also be negligible beneficial.

13.6.4 Wider Effects

13.6.4.1 Community Benefit Funding

106. SPR is committed to sharing the benefits from its operational windfarms with local communities. This could include a community fund to deliver local initiatives, benefits in kind and the opportunity to invest in the operational proposed Development should the community choose to do so. SPR would hold discussions with local stakeholders to decide which communities would be appropriate to participate in any community benefits offered. It is expected that any community benefit fund and potential income streams from an opportunity to invest could provide a source of long term revenue which could be used to support community projects. Local communities would have the flexibility to choose how the money is spent and prioritise it on the things which matter most to them.
107. The nature of the benefits associated with community benefit funding can be illustrated by the community benefit funding from the Operational Kilgallioch Windfarm.
108. Community benefit funding from the Operational Kilgallioch Windfarm is distributed by the Kilgallioch Community Benefit Company, which has 12 local volunteer directors who decide on grant awards and a third party which provides administrative support. The Kilgallioch Community Fund is divided into local and regional elements with 60% shared equally between the local communities of Old Luce, New Luce, Kirkcowan and Barrhill, and the remaining 40% available to a wider area of benefit covering the Wigtownshire and South Carrick areas.
109. The Kilgallioch Community Fund has supported a variety of activities and initiatives from supporting local clubs and societies, improved energy efficiency and providing employment opportunities. Examples include:
- £9,899 to Hub Dumfries and Galloway to improve energy efficiency and home heating for the elderly;
 - £9,764 to Balloch Wood Community Venture for the creation of two new footpaths incorporating a 7.5m bridge over Balloch Burn in Creetown;
 - £9,194 to Stranraer Development Trust towards the salary of a project administrator, to support the Stranraer Oyster Festival;
 - £10,000 to Glentrool and Bargrennan Community Trust to part-fund a project manager to manage an asset transfer of the former Glentrool Primary School and oversee implementation of the business plan;
 - £9,740 to Stranraer Rotary Coastal Path Group as a contribution to improvements on the Mull of Galloway Trail;
 - £18,200 to Barrhill CIC to employ a village handyman, whose role includes garden and handyman services to residents of Barrhill aged 65 +;
 - £6,720 to Girvan Community Sports Hub to fund a six-month employability pilot project seeking to identify, recruit, train and support six young people into employment in the South Carrick area.
110. To date, SPR has voluntarily contributed more than £32 million in community benefit funding across the UK, including almost £5.8 million to communities in Dumfries and Galloway and over £5.9 million to South Ayrshire communities.
111. By funding projects that aim to improve employability, education and skills, as well as improving the fabric of the community, the community benefit funding has the potential to help to address issues in the area such as lack of employment opportunities and out-migration of young people from the Local Area.

13.6.4.2 Community Investment

112. In addition to the benefits in kind and traditional community benefit funding, the local community could also financially benefit from the proposed Development through participation in a shared ownership/community investment scheme.
113. The Scottish Government *Good Practice Principles for Shared Ownership of Onshore Renewable Energy Developments* (Scottish Government, 2019) sets out the Scottish Government's view as to how this can be achieved, supporting earlier commitments, including in its 2017 *Onshore Wind Policy Statement* (Scottish Government, 2017).
114. The Scottish Government is committed to shared ownership because it believes it can support greater partnership working, empower communities and build their capacity, generate income that can have a lasting legacy, and strengthen corporate social responsibility.
115. SPR will hold discussions with local stakeholders to decide which communities would be appropriate to participate in any opportunity to invest should they choose to do so. SPR is committed to keeping local communities informed as the project progresses and, in line with Scottish Government guidance, will provide information in a timely manner so the communities are able to fully assess the opportunity.

13.6.4.3 Non-Domestic Rates

116. The proposed Development would be liable for non-domestic rates, the payment of which would contribute directly to Dumfries and Galloway's public sector finances. Analysis of the rateable values of windfarms nearby suggests that the average rateable value per MW is £23,100, and that the total rateable value would be £1.4 million.
117. Given a poundage rate of £0.516 per £1 of rateable value it is estimated that the proposed Development could contribute £0.7 million annually to public finances. However, the actual contribution would depend on variables such as the actual load factor, and the potential for any relief from non-domestic rates.
118. In addition to the payment of non-domestic rates associated with the windfarm element of the proposed Development, there would also be a contribution to public sector finances from the solar energy element of the project.
119. These non-domestic rates, by providing an additional revenue stream, would support the delivery of local government services.

13.6.5 Effect on Tourism and Recreation

13.6.5.1 Windfarms and Tourism Evidence

120. The most comprehensive study of the potential effects of windfarms on tourism was undertaken by the Moffat Centre at Glasgow Caledonian University in 2008 (Glasgow Caledonian University/Moffat Centre, 2008). The study found that, although there may be minor effects on tourism providers and a small number of visitors may not visit Scotland in the future, the overall effect on tourism expenditure and employment would be very limited. This study is now about 10 years old, although a Scottish Government report confirmed the findings (ClimateXchange, 2012), and in that time windfarms have become a more common feature in Scotland. As such, it would be expected that any negative effects on the tourism economy would now be apparent.
121. However, the Moffat Centre study was based on what could happen, rather than what has happened. In 2017 BiGGAR Economics undertook a study into the effects of already constructed windfarms on tourism at the national, regional and local level (BiGGAR Economics, 2017).
122. Tourism employment was considered over the period 2009 to 2015, a six-year period over which Scotland, in almost all local authority areas, increased the number of windfarms, while employment in sustainable tourism also grew significantly. The analysis found no correlation between tourism employment and the number of turbines at the national or local authority level.
123. The study also considered the impact on employment at a much smaller, more granular level, in data zones up to 15 kilometres from developments. The sites considered were constructed between 2009 and 2015. As these sites

did not exist in 2009, comparing employment in 2009 and 2015 was considered an effective measure of the effect of windfarms on local employment, while excluding construction impacts, such as windfarm related employees staying in local accommodation.

124. At the local authority level in these smaller areas, no link was found between the development of a windfarm and tourism related employment. In 21 out of the 28 areas considered, employment in this sector grew. In 22 of the areas, employment either grew faster or decreased less than the rate for the relevant local authority area as a whole.
125. Overall, the conclusion of this study was that published national statistics on employment in sustainable tourism demonstrate that there is no relationship between the development of onshore windfarms and tourism employment at the level of the Scottish economy, at the local authority level, nor in the areas immediately surrounding windfarm development.
126. The findings of this research are in accordance with that of the Scottish Parliament's Economy, Energy and Tourism Committee's findings in 2012 (Scottish Parliament Economy, Energy and Tourism Committee, 2012), when they concluded that there is no robust, empirical evidence of a negative link between windfarm development and tourism.
127. Overall, there is no research evidence that shows that fears of negative effects on the tourism economy in Scotland as a result of windfarms have been realised.
128. Within that overall context, the following assessment nevertheless considers whether there might be any specific effects on individual tourism assets. This assessment considers whether the proposed Development could result in changes in the behaviour of tourists that might result in effects on the tourism economy.

13.6.5.2 Basis of Assessment

129. This section assesses whether there would be an effect on the tourism economy, as a result of the proposed Development leading to a change in behaviour, for example, a change in visitor numbers or tourism income. Therefore, the assessment is made on whether the proposed Development could lead to a change in behaviour that would lead to effects on the tourism economy.
130. The proposed Development is an extension and would be in an area where the presence of an onshore wind development has already been established. This suggests that any effect of the proposed Development on tourism would be limited as a windfarm has already been established at this location.

13.6.5.3 Tourism/Recreation Assets

131. The most popular visitor attractions in Dumfries and Galloway and South Ayrshire were identified in **Table 13.5.9**. The majority of these attractions are over 35 km from the proposed Development and are not likely to have any effect on them.
132. Galloway Forest Park is approximately 10 km from the proposed Development at its closest point, its predominant features, the woodland landscape and trails are unlikely to be affected by the proposed Development. The effect was assessed as negligible.
133. Glentworth Visitor Centre serves the outdoor market and provides information on trails, lochs and 7stanes mountain biking to the east. Activities associated with these assets would not be affected by the construction or operation of the proposed Development, which is over 14 km from the visitor centre. Therefore, the effect has been assessed as negligible.
134. Castle Kennedy Gardens overlook two small lochs and are set within acres of landscaped gardens. Visitors' enjoyment of the castle and grounds, which are 14 km from the proposed Development, are unlikely to be affected by the proposed Development. Therefore, the effect has been assessed as negligible.

13.6.5.4 Tourist Accommodation

135. A total of 35 accommodation providers, including camping sites, B&Bs and hotels, were identified within 15 km from the proposed Development, as shown in **Table 13.5.11**.
136. The accommodation providers in or near Barrhill, 10-12 km to the north of the proposed Development, are advertised based on their proximity to attractions and country setting. These factors are unlikely to be affected by the proposed Development, which is a significant distance away and would act as an extension to the Operational Kilgallioch Windfarm, which is to the north of the proposed Development and closer in proximity to Barrhill. The effect has been assessed as negligible.
137. The accommodation providers to the north east of the proposed Development, between Bargrennan and Barrhill advertise based on their cosiness, facilities and surroundings. It is unlikely that these factors would be affected, given the distance from the proposed Development, and, in any case the Operational Kilgallioch Windfarm is closer than the proposed Development. Therefore, the effect has been assessed as negligible.
138. The accommodation providers at Bargrennan are advertised based on their proximity to the Galloway Forest Park, which would not be affected by the proposed Development, and the effect has been assessed as negligible.
139. Accommodation providers on the A714/River Cree advertise based on their settings and gardens, as well as their proximity to areas of interest, such as the town of Newton Stewart. These factors are not expected to be affected and the effect has been assessed as negligible.
140. Waterside Lodges is located in Polbae near the River Bladnoch, with close proximity to the 7stanes cycle trails and the Southern Upland Way, and in peaceful surroundings. Given that the proposed Development is not expected to affect these surroundings, the effect has been assessed as negligible.
141. A number of accommodation providers are located to the south and south east near Balminnoch. They are advertised based on their proximity to areas of interest such as the sea, the three lochs at Balminnoch, mountains, moorland, castles and ruins, as well as the tranquillity and peace of the surroundings and the views. The first two of these factors would not be affected by the proposed Development and given the distance from the asset and that there are views in all directions, it is not expected that the views would be compromised. Therefore, the effect has been assessed as negligible.
142. Providers in Kirkcowan discuss their proximity to a range of walks, fishing spots, lochs and the sea. These are not expected to be affected by the proposed Development and therefore the effect has been assessed as negligible.
143. The accommodation providers at Glenluce, 10-15 km to the south of the proposed Development are advertised based on their location and views towards the sea. As these would not be affected by the proposed Development, the effect was assessed as negligible.
144. The accommodation providers in New Luce emphasise their relative solitude and are near a river and small forest. Their attractiveness to potential visitors is unlikely to be affected by the proposed Development and the effect has been assessed as negligible.
145. Similarly, Lagafater Lodge, 10-12 km to the north west, is set within a peaceful landscape and does not appear to have been affected by the Operational Kilgallioch Windfarm, and the effect is considered negligible.

13.6.5.5 Recreational Trails

146. Part of the Southern Upland Way (SUW), which passes through the Operational Kilgallioch Windfarm, may be affected by the proposed Development, as a result of construction works associated with the proposed Development. As discussed in the **Section 13.7**, an access plan would be developed to minimise disruption.
147. The SUW passes through the Operational Kilgallioch Windfarm and the SUW Rangers, supported by the Operational Kilgallioch Windfarm can assist with effectively sharing information on any temporary diversions or other measures required during construction of the proposed Development.

148. Once operational it is not expected the proposed Development would have an impact on users' enjoyment of the route, including equestrian users. The proposed Development could increase opportunities for public recreation access due to new/upgraded tracks providing local recreational access to this section of the SUW and to other features of interest within the Operational Kilgallioch Windfarm site (e.g. Laggangairn Stones). The effect has been assessed as negligible.
149. There are a small number of core paths near the proposed Development, which are expected to be used predominantly by local residents, including equestrian users. It is not expected that the proposed Development would impact on enjoyment of these paths, given that it would act as an extension of the Operational Kilgallioch Windfarm, the relative distances from the proposed Development and the features which make them attractive, such as the lochs and the views over Luce Bay. Therefore, the effect has been assessed as negligible.

13.7 Mitigation

13.7.1 Introduction

With the exception of the construction effects on the SUW, there are no adverse effects as a result of the proposed Development. The following sections set out the ways in which the local community can maximise the implementation of the proposed Development.

13.7.2 Maximising the Local Impact of the Proposed Development (Enhancement)

150. The Developer will host 'meet the contractor days' in the local area in advance of constructing the renewable energy development. These events have the aim of developing the local supply chain and provide potential suppliers with information. The Developer actively encourages contractors to develop local supply chains throughout the area, and also encourages contractors to invest in training and skills development.

13.7.3 Southern Upland Way Access

151. An access management plan would be drafted to ensure continuing access to the Southern Upland Way. This would set out any alternative access routes, which would be indicated through appropriate signage, reducing potential disruption to route users. The existing Operational Kilgallioch Windfarm funded SUW Rangers can assist with managing any communications around these temporary measures via their website, other social media platforms and during direct engagement with user groups and local communities. The new/upgraded tracks could provide increased opportunities for local recreational access to this section of the SUW and to other features of interest within the operational Kilgallioch site (e.g Laggangairn Stones).

13.8 Residual Impacts

152. The residual effects identified in the assessment include:
 - a temporary, **Minor** beneficial effect on the regional economy as a result of construction related expenditure;
 - a temporary, **Negligible** beneficial effect on the national economy as a result of construction related expenditure;
 - a temporary, **Negligible** effect on local access to the Southern Upland Way;
 - a permanent, **Negligible** beneficial effect on the regional and national economy due to operations and maintenance expenditure; and
 - a permanent, **Negligible** effect on local tourism assets, accommodation providers and trails from the operation of the proposed Development.

13.9 Cumulative Assessment

153. The cumulative impact of the proposed Development is assessed in the context of the existing capacity installed in the area. For example, the proposed Development is located next to the Operational Kilgallioch Windfarm, which

features 96 turbines and has an installed capacity of 239 MW. Two sources of cumulative impacts are considered: supply-chain related effects and impacts on tourism and recreation.

154. The construction of the Operational Kilgallioch Windfarm may have assisted the development of the local supply chain's capacity, increasing opportunities for local businesses, which may result in a higher volume of contracts being awarded locally. Overall, the effect on the local economy was assessed as negligible.
155. A review of existing evidence on the relationship between windfarms has found little evidence of a negative impact and an assessment of effects on local tourism assets and recreational routes indicates that there are likely to be no significant adverse effects on local tourism. On this basis, it seems unlikely that there would be cumulative effects on the local tourism economy. Therefore, the cumulative effect on the tourism economy was assessed as negligible.

13.10 Summary

156. The socio-economic baseline suggests that the Local Area has a relatively older population than Dumfries and Galloway, South Ayrshire and Scotland and that this trend is set to continue into the future. This suggests there is a relative lack of employment opportunities in the Local Area as compared to Dumfries and Galloway and South Ayrshire. Employment in the Local Area and the local authority areas is relatively high in wholesale and retail trade, and accommodation and food services activities, as well as in manufacturing and construction.
157. Based on an installed capacity of approximately 62 MW, it found that during the construction and development phase, the windfarm component of the proposed Development could generate up to:
- £4.0 million GVA and 60 years of employment in Dumfries and Galloway and South Ayrshire; and
 - £18.6 million GVA and 289 years of employment in Scotland.
158. During its operations, the windfarm component of the proposed Development could generate up to:
- £0.4 million GVA and 6 jobs in Dumfries and Galloway and South Ayrshire; and
 - £0.6 million GVA and 9 jobs in Scotland.
159. Based on an installed capacity of approximately 20 MW, it found that during the construction and development phase, the solar installation could generate up to:
- £0.7 million GVA and 9 years of employment in Dumfries and Galloway and South Ayrshire; and
 - £3.1 million GVA and 45 years of employment in Scotland
160. During its operations, the solar installation could generate up to:
- £0.1 million GVA and 2 jobs in Dumfries and Galloway and South Ayrshire; and
 - £0.2 million GVA and 3 jobs in Scotland.
161. There would also be a potential economic benefit associated with community benefit contributions, which would support the delivery of a wide variety of local community initiatives that could help to address issues such as the lack of employment opportunities.
162. In addition, there would be benefit from the proposed Development to the public sector in the form of non-domestic rates. Given the rates paid by similar developments, the annual contribution resulting from the proposed Development was estimated to be £0.7 million.
163. A review of existing evidence on the relationship between windfarm developments and the tourism economy found no evidence that negative effects should be expected. A specific assessment of the potential of the proposed

Development on local tourism assets and accommodation providers also found that there were not expected to be any adverse impacts.

164. Overall, there were no significant adverse effects associated with the proposed Development, while there would be some positive impacts linked to construction and operational expenditure, though they would also not be significant, in EIA terms.

Description of Effect	Significance of Potential Effect		Mitigation Measure	Significance of Residual Effect	
	Significance	Beneficial / Adverse		Significance	Beneficial / Adverse
<i>During Construction</i>					
Economic Impact of the windfarm component: £4.0 million and 60 job years in Dumfries and Galloway and South Ayrshire.	Minor	Beneficial	n/a	Minor	Beneficial
Economic Impact of the windfarm component: £18.6 million and 289 job years in Scotland.	Negligible	Beneficial	n/a	Negligible	Beneficial
Economic Impact of the solar installation: £0.7 million and 9 job years in Dumfries and Galloway and South Ayrshire.	Negligible	Beneficial	n/a	Negligible	Beneficial
Economic Impact of the solar installation: £3.1 million and 45 job years in Scotland.	Negligible	Beneficial	n/a	Negligible	Beneficial
Disruption to Southern Upland Way.	Minor	Adverse	Develop access plan	Negligible	n/a
<i>During Operation</i>					
Annual economic impact of the windfarm component: £0.4 million and 6 jobs in Dumfries and Galloway and South Ayrshire.	Negligible	Beneficial	n/a	Negligible	Beneficial
Annual Economic Impact of the windfarm component: £0.6 million and 9 jobs in Scotland.	Negligible	Beneficial	n/a	Negligible	Beneficial
Annual Payment of an estimated £0.7 million in Non-Domestic Rates associated with the windfarm component.	Negligible	Beneficial	n/a	Negligible	Beneficial
Annual Economic Impact of the solar installation: £0.1 million and 2 jobs in Dumfries and Galloway and South Ayrshire.	Negligible	Beneficial	n/a	Negligible	Beneficial
Annual Economic Impact of the solar installation: £0.2 million and 3 jobs in Scotland.	Negligible	Beneficial	n/a	Negligible	Beneficial
Effect on tourism assets.	Negligible	n/a	n/a	Negligible	n/a
Effect on accommodation providers.	Negligible	n/a	n/a	Negligible	n/a
Effect on trails.	Negligible	n/a	n/a	Negligible	n/a
<i>Cumulative Impacts</i>					
Economic impact on economies of Dumfries and Galloway and South Ayrshire.	Negligible	Beneficial	n/a	Negligible	Beneficial
Effect on tourism economy.	Negligible	n/a	n/a	Negligible	n/a

Table 13.10.1 Summary Table

13.11 References

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