16. LAND USE, SOCIO-ECONOMICS AND RECREATION

Executive Summary

This chapter considers potential effects on land use, socio-economic activity, tourism and recreation during construction and operation of the proposed development.

The land within the site application boundary is predominantly upland grazing and energy generation with commercial forestry. The southern section of the site is already used for wind power generation (Tangy I and II Wind Farm), with 22 operational turbines.

The proposed development will alter the existing land use, with some permanent (approximately 13.74 ha) and some additional temporary (15.98 ha) land take to accommodate the turbines, associated structures and access tracks.

The coniferous plantation woodland on the site will be felled to enable the proposed development. Replanting of to a keyhole design will take place following the construction phase.

Renewable energy brings competitive advantages and opportunities for economic development within Argyll and Bute. This is particularly important for Campbeltown, one of the most fragile economies in Scotland. Both the Campbeltown Community Action Plan and the West Kintyre Community Action Plan identify income from renewable energy as an important source of income for economic regeneration. Argyll and Bute Council also recognises onshore wind farm development as an opportunity to create employment and attract investment.

The applicant is committed to using local contractors and services where possible and has been operating an 'Open for Business' site since 2012. The site provides a platform which allows local suppliers to apply for opportunities provided by the applicant and other companies in the supply chain.

It is estimated that awarded contracts during construction of the wind farm could equate to £120 million. The associated potential for direct benefit and induced employment creation is expected to create **moderate and significant beneficial effects** at a local scale in Kintyre.

The potential tourism effects of the proposed development have been considered in detail with reference to the most recent and robust evidence available on the potential impact of wind farms on tourism, including a report by BiGGAR Economics undertaken in 2017. None of this suggests that wind farms are likely to have a significant detrimental effect on tourism.

16.1 Introduction

16.1.1 This chapter considers the potential effects on land use, socio-economics and recreational use associated with the construction, operation and decommissioning of the proposed development. The specific objectives of the chapter are to:

- describe the 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 likely significant effects; and
- assess the residual effects remaining following the implementation of mitigation.

16.1.2 The socio-economics assessment has been carried out by BiGGAR Economics. There are no recognised standards, guidelines or methodologies for assessing wind farm effects on land use, socio-economics and recreation for the purposes of an EIA. Therefore, the assessment has been based on professional judgement, and industry publications such as a report undertaken by BiGGAR Economics on behalf of RenewableUK (RenewableUK, 2015). Inputs on forestry have been provided by Neil McKay Forestry Consultant Ltd. The key guidelines in assessing the forest implications are the Scottish Government's Control of Woodland Removal Policy and the UK Forestry Standard, the governments' approach to sustainable forestry.

16.1.3 Effects on landscape and visual amenity are addressed in Chapter 8: Landscape and Visual Impact.

16.1.4 This chapter is supported by:

- Appendix 16.1: Long Term Forest Plan;

16.1.5 Figures 16.1 – 16.2 are referenced in the text, where relevant.

16.2 Scope of Assessment

Project Interactions

16.2.1 It is expected that the proposed development will result in a partial change to land use, generate economic activity and employment in the area. Potential effects on tourism and recreation assets, are also considered.

Study Area

16.2.2 The assessment in this chapter covers three key topics and accordingly the study area for each individual aspect has been defined based on the nature of the potential effects arising from the proposed developments:

- The study area for the land use assessment covers the area within the site application boundary where direct and indirect effects on land use may occur.
- The study areas for the socio-economic assessment are as follows:
  - the local area (Kintyre Peninsula) – defined by Scottish data zones of the Kintyre Peninsula, S02001380 and S02001379;
  - the local authority area (Argyll and Bute); and
  - the national area (Scotland).
- The study area for the recreational assessment includes both the area within and up to 2 km from the site application boundary.

Scoping and Consultation

16.2.3 Relevant consultee, their responses and how their responses have been addressed are summarised in Table 16.1: Consultation Responses

16.2.4 Full details on the consultation responses can be reviewed in Appendix 7.1: Register of Scoping Responses.

Table 16.1: Consultation Responses

Consultee and Date	Summary of Response	Comment/Action Taken
Argyll and Bute Council – 4th July 2017	• Consider the net economic impact. • Public access on long distance walking and cycling routes and scenic routes. • Consider impacts on tourism and recreation. • Consider opportunities for energy storage.	• Net economic impact considered in Socio-economic effects – see Table 16.15. • Public access considered in Effects on Tourism/Recreation Assets - see Table 16.16. • Tourism and recreation impacts considered - see Table 16.16. • Noted.
Forestry Commission Scotland – 24th May 2017	• Advised to prepare a Long-Term Forest Plan. • Consider scope to reduce felling. • Any felling/compensatory planting to comply with UK Forestry Standard.	• Long Term Forest Plan prepared. Felling and replanting proposals are illustrated in Figure 16.1 and Figure 16.2. • Felling proposals/land use change and compliance with policy. addressed at paragraph 16.3.11, 16.4.1 and Table 16.6.
West Kintyre Community Council – 25th May 2017	• Robust assessment undertaken incorporating views of Mountaineering Scotland and the Ramblers Association.	• Literature review in Effects on Tourism/Recreation Assets from paragraph 16.5.49 – 16.5.73.

Effects to be Assessed

16.2.5 The following key effects were identified for consideration in this assessment:

- direct and indirect effects during development and construction on employment and economic activity;
- direct and indirect effects during operation on employment and economic activity;
- direct and indirect effects during construction and operation on forest management activity;
- the direct effects of the community benefit schemes, once the proposed development is operational;
- the contribution of Non-Domestic Rates (a tax which is paid on non-domestic property);
- direct and indirect effects on tourism and recreation assets during operation; and
- direct and indirect effects on tourism accommodation during operation.

Effects Scoped Out of Assessment

16.2.6 Effects arising from the process of decommissioning have been scoped out since they are of a similar nature to construction issues, but of a smaller scale and shorter duration. However, the results of decommissioning (i.e. the removal of the wind farm) are taken into account in assessing ongoing and operational effects where appropriate.

16.3 Methodology

Overview

Assessment of Economic Effects

16.3.1 As noted, there are no recognised standards, guidelines or methodologies for assessing the effects of windfarms on socio-economics, tourism and recreation for the purposes of an EIA. Therefore, to identify and assess the significance of predicted economic effects, the assessment has been based on professional judgement of the degree of change resulting from the proposals, using methods commonly used in EIAs for proposed renewable energy developments, as outlined in Table 16.2.

16.3.2 Assessment of economic effects was undertaken using a model that has been developed by BiGGAR Economics specifically to estimate the economic effects of windfarm developments. This model was also the basis of an assessment of the economic effects 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 economic effects of wind farms that have been developed in the UK in recent years.

16.3.3 This approach is now considered industry best practice in the assessment of the economic effects of the onshore wind sector, having been used in reports for the DECC and RenewableUK. This model has been used by BiGGAR Economics to assess the economic effects of numerous windfarms across the UK and the results have been accepted as robust by reporters appointed by Scottish Ministers, at several public inquiries.

16.3.4 To estimate the economic effects that could result from construction and operation, data on the scale of the work, such as the size and capacity of the wind turbines, grid connections, sub-stations etc., was estimated based on industry averages and then adapted to the circumstances of this proposed development.

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

16.3.6 These assumptions were based on two main sources. The first was the analysis undertaken in the 2015 report on behalf of RenewableUK, which draws on the experience of what happened in developments elsewhere in the UK. This report examined the size and location of contracts for the development, construction, and operation and maintenance of existing windfarms. The second source was a bespoke analysis of the economies of the relevant study areas, specifically undertaken for this assessment. This was based on analysis of local and national statistics.

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

16.3.8 In addition, the following effect have also been assessed:

- Public finances – the proposed development will have an effect on Scotland's public finances due to the Non-Domestic Rates (NDRs) generated for the Government; and
- Community fund – the proposed development will be expected to have an effect on the community through a community benefit fund (Scottish Government is currently undertaking formal consultation on community benefits).

Evidence Base of Wind Farms and Tourism

16.3.9 As both Renewable energy and tourism are important sectors in the Scottish economy, which are sometimes thought to be in conflict, the link between wind energy developments and tourism in Scotland has been reviewed, informed by the following reports:

- Wind Farms and Tourism Trends, BiGGAR Economics (BiGGAR Economics, 2017);
- 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);
- Wind Farms and Changing Mountaineering Behaviour in Scotland, Mountaineering Council of Scotland (Mountaineering Scotland, 2014); and
- Wind Farms and Mountaineering Behaviour in Scotland, Mountaineering Council of Scotland (Mountaineering Scotland, 2016).

Analysis of Tourism and Recreation Assets in the Region

16.3.10 An overview of the tourism and recreation assets is provided in the tourism context section, and the potential effect of the proposed development was considered by assessing the potential effects on local tourism and recreation assets based on the significance criteria in Table 16.2: Significance Criteria. The potential effect on accommodation providers in the area was assessed using the same method.

Assessment of Land Use Change (Forestry)

16.3.11 The three forest units occupying ground within the proposed development site are at the "restructuring" stage in the forest cycle, when the tree crops have reached a stage where they are ready for felling and replanting. Forest Enterprise Scotland has commenced felling and replanting areas within the proposed development boundary to an approved Land Management Plan; this plan incorporates the felling and replanting requirements for the proposed development within the redline boundary. One of the private forests has an approved Forest Plan but has not commenced the felling programme and the other private owner has not made any separate Forest Plans at this stage, although the woodland has suffered significant wind throw.

16.3.12 "Restructuring" in the management of forests is seen as the opportunity to redesign woodland, planted some forty years previously to current environmental standards.

16.3.13 The proposed Tangy Wind Farm Long Term Forest Plan (LTFP) provides the forest growing stock data using sub compartment information provided by the forest managers, where available, supplemented with aerial photography and LiDAR data as well as site survey. The LTFP follows the guidelines incorporated within the UK Forest Standard, with greater emphasis given to designed open ground and non-productive areas including the restoration of peatland where the current timber yield is low (below Yield Class 8) and on peat (where peat depth is greater than 50 cm). The area to be occupied by wind farm infrastructure and associated unplanted areas is identified and in accordance with the Control of Woodland Removal Policy has been accepted as requiring a matched area of planting off site by the applicant. The applicant currently owns a plot of land exceeding this area to the west of Campbeltown with the intention of meeting the compensatory planting commitments.

16.3.14 The LTFP therefore records the current forest position and a replanted design adopting current environmental standards and accommodating the requirements of renewable energy generation. The loss of woodland area on site will be matched off site as Compensatory Planting.

Method of Baseline Characterisation

Desk Surveys

16.3.15 To understand the baseline conditions for the assessment of effects on socio-economic, tourism and recreation the following has been undertaken;

- a review of national, regional and local economic strategies;
- an analysis of socio-economic statistics for the relevant study areas;
- an analysis of tourism statistics in the relevant study areas; and
- identification of local tourism and recreation assets, and accommodation providers.

Field Survey Techniques

16.3.16 No field survey was considered necessary as part of the socio-economic and tourism assessment.

Effects Evaluation Methodology

Impact Significance

16.3.17 The significance of the change has been assessed using the economic model described above which considers the local, regional and national economic effects that will be generated by the proposed development.

16.3.18 The significance of the effects on tourism and recreation assets was assessed with reference to the evidence from previous research on the effect of wind farms on tourism, and experience from similar existing and proposed developments elsewhere.

16.3.19 The significance criteria outlined in Table 16.2: Significance Criteria would also be used to assess cumulative effects. Moderate and major effects would be considered to be significant in the context of the EIA Regulations, whereas minor and negligible effects would not be considered significant in the context of the EIA Regulations.

Table 16.2: Significance Criteria

Effect	Description
Major	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.
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.

Limitations of Assessment

16.3.20 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.

16.4 Baseline Conditions

Land Use

16.4.1 The site application boundary, which also defines the land use study area boundary, is shown on Figure 16.1. The study area is predominantly managed commercial forestry with the existing Tangy I and II Wind Farm located to the south. There are also areas of managed agricultural grazing land within the site application boundary.

16.4.2 The southern section of the site is already used for wind power generation (Tangy I and II Wind Farm), with 22 turbines. The first 15 turbines were erected in 2002 (Tangy I Wind Farm), and the site was extended in 2011 (Tangy II Wind Farm). The nearest villages to the site are Bellochantuy (approximately 2.8 km north-west of the site), West Darlochan (approximately 4 km south of the site) and Kilchenzie (approximately 3.1 km south of the site). Campbeltown is the largest town in the Kintyre peninsula and is located approximately 9 km to the south-east of the site.

16.4.3 The existing site is accessed via the A83, Tangy Mill Road and an access track that serves the Tangy I and II Wind Farm and numerous properties. The A83 is a strategic route for the peninsula, connecting Campbeltown with Tarbet, linking both mainland and island communities with Argyll and Bute and the larger populated areas of the Central Belt.

16.4.4 There are no residential properties within the site application boundary.

16.4.5 The forests within the study area are under three separate ownerships and management, two units are privately owned by different parties. The third central section is National Forest Estate managed by Forest Enterprise Scotland (FES). All are established productive conifer forests typical of traditional upland plantations in the west of Scotland. The overriding influence on the forests performance and character is its coastal location affected by a mild wet but very windy climate on generally waterlogged soils. Forest rotation length is largely determined by terminal height and the onset of windthrow.

16.4.6 The family owned Lagalgarve forest is the most westerly and extends to the lower slopes. This presents some earlier established plantations which are now over-mature and have significant sections of windthrow. No felling or replanting has taken place in this area to date and no stand-alone Forest Plan has been drawn up.

16.4.7 Forest Enterprise Scotland manages the state-owned section which forms part of the West Lussa Forest. Within this forest there has been felling and restocking under a Land Management Plan (LMP) 2018-2027 (Forestry Commission Scotland, 2017). The LMP has made provision within the felling and replanting plans for the proposed development. Part of the study area within the proposed development area has been felled and replanted with further areas planned for felling imminently.

16.4.8 Tangy Forest is managed by a forest investment company and at present is entering into the timber production phase. Some windthrow is already present. Tangy Forest has an approved Long-Term Forest Plan (Case No: 4886194) dated August 2013; no felling has taken place to date. Data is provided by the land owners or their managers where available. Additional information is drawn from LiDAR and aerial photography and ground survey.

16.4.9 Lagalgarve forest was planted in two stages in 1975 and 1988, other than burnside open space with some broadleaves the species composition is predominantly Sitka spruce with some Lodgepole pine. Within the West Lussa Forest the area of proposed development was planted in the mid 1970's. Some felling and restocking has taken place in the north, replanted in 2010, and the east, replanted in 2014. The predominant species is Sitka spruce. Lodgepole pine was planted on the deeper peat areas in 1975. Replanting in 2010 is recorded as Sitka spruce and the 2014 records show Sitka spruce and Norway spruce. There is no broadleaved element within this section and there are no ancient or semi natural woodlands recorded. The entire Tangy Forest was planted in 1986 with Sitka spruce and a component of only 0.5% broadleaf species. There are no ancient or

semi-natural nor Plantations on Ancient Woodland Sites (PAWS) within the proposed development area.

16.4.10 Tree growth is variable with the highest performance within Lagalgarve Forest but consequently suffering from wind throw with low growth rates on some areas of deep peat. Yield Class ranges from below YC8 to YC 22. The average for the area is YC 14-16.

Timber Harvesting and Marketing.

16.4.11 Almost all timber within the areas to be felled is of a marketable size and quality; a proportion of sawlogs will be produced from the larger material while the small roundwood is currently in demand by other end users.

16.4.12 This part of the west of Scotland is designated as a 'pest-free area' in relation to the great spruce bark beetle (*Dendroctonus micans*) out of which wood and bark can be moved without treatment under the EU plant passport regime. The current position from the Kintyre peninsula relies on the ability to transport roundwood by sea. Current small roundwood market options therefore include Ireland, the rest of the UK and over recent years to Scandinavia. The Scottish log market includes Ridings sawmill at Cardross and the extensively developed BSW Timber K2 sawmill at Kilmallie, Corpach near Fort William. Timber transport from these forests make use of the upgraded pier facilities at Campbeltown, which by merit of catering for larger vessels with deeper draughts, is the best timber handling facility available, on the west coast of Scotland.

Socio-Economic Context

Scotland's Economic Strategy

16.4.13 In March 2015, the Scottish Government published its economic strategy with the two main purposes of increasing competitiveness and tackling inequality. The Scottish Government has outlined four main priorities to achieve these aims:

- investing in Scotland's people, infrastructure and assets;
- promoting inclusive growth, which creates opportunity through a fair and inclusive jobs market, and regional cohesion to provide economic opportunities across all of Scotland;
- fostering a culture of innovation, which is open to change and new ways of doing things; and
- enabling Scotland to take advantage of international opportunities.

Energy in Scotland

16.4.14 In 2015, 59% of all electricity in Scotland was generated renewably, with a target of producing 100% from renewable sources by 2020 (Scottish Governemnt, 2017).

16.4.15 Additionally, the Scottish Government has emphasised the importance of communities benefitting from renewable energy generation, including through community benefit funds and shared ownership.

Argyll and Bute Council's Economic Development Action Plan – 2013 to 2018

16.4.16 The Economic Development Action Plan sets out how the council will focus its resources most effectively to generate sustainable economic growth. In particular, the plan highlights the importance of Argyll and Bute's 'abundance of sustainable economic assets especially in terms of renewable energy, quality food and drink and tourism'.

16.4.17 The Plan centres around four main concepts, making Argyll and Bute Competitive, Connected, Collaborative, and Compelling. It also lists notable development priorities, which include:

- unlocking the potential of renewable energy assets;
- regenerating main towns, and smaller rural and island communities;
- working with key industries, including renewables, tourism and food; and
- attracting economically active individuals and families.

16.4.18 The Plan also highlights factors of competitive advantage unique to the area, and able to secure Scotland's long-term economic growth. These are discussed in relation to four larger areas within the Local Authority area, including Mid-Argyll, Kintyre and the Islands. Important factors include:

- renewable energy resources and a record of innovation in renewables – in particular the Machrihanish Airbase, which is now home to CS Wind, a wind turbine tower manufacturing facility;
- key infrastructure, such as Campbeltown's harbour and airport – these can open up the Irish Sea for offshore renewable investment;
- sustainable economic assets – such as the distilleries of Campbeltown;
- a unique heritage, provenance and authenticity – such as Dunadd and Kilmartin Glen; and
- proximity to the Central Belt, which is ideal for supply electricity to urban areas (Argyll and Bute Council, 2012).

Argyll and Bute Strategic Economic Development Action Plan, 2016/21

16.4.19 Argyll and Bute Strategic Economic Development Action Plan sets out the area's priorities, with particular regard to infrastructure. It focuses on the investments necessary to address issues raised during a set of consultation workshops. The plans bring Argyll and Bute's framework in line with the Scottish Government's, and addresses issues such as improving the digital network, improving transport links, supporting entrepreneurship and the economy, and making Argyll and Bute an all year-round tourism destination (Argyll and Bute Council, 2015).

Campbeltown Community Action Plan

16.4.20 The Campbeltown Community Action Plan was prepared by the South Kintyre Development Trust and covers 2012 – 2017 (South Kintyre Community Development Trust, 2011). The Action Plan describes the town as it was in 2012 and describes that Campbeltown has been identified as an 'area of employment deficit' by Highlands and Islands Enterprise. The area has suffered due to the closure of major employers in the area, such as the RAF at Machrihanish, shipbuilding companies and the clothing manufacturer Jaeger.

16.4.21 The main strategies and priorities to improve the situation in Campbeltown are highlighted in the Action Plan. These are:

- town and waterfront regeneration;
- developing cultural and recreational assets;
- improving access into and within South Kintyre;
- education, training and jobs;
- learning, skills and well-being;
- service delivery and organisation; and
- housing, infrastructure and renewable energy.

16.4.22 The strategy and priority of education, training and jobs is one that is most important when considering the town's classification as an area of employment deficit. The Action Plan highlights that jobs and training opportunities need to be linked to the assets and strengths of South Kintyre and lists renewable energy as one of these strengths. The actions to address the housing, infrastructure and renewable energy strategy include using income from renewable energy to support other aspects of the community.

16.4.23 The recognition of Kintyre's growing renewables industry has driven infrastructure improvement projects within Campbeltown, led by the Kintyre Renewables Hub and Argyll and Bute Council's programme for regeneration and economic development (CHORD). Improvement works include road re-design and pier upgrades to facilitate access for the transportation of component parts between Wind Towers and the harbour.

West Kintyre Community Action Plan 2017-2023

16.4.24 The West Kintyre Community Action Plan (West Kintyre Community Council, 2017) sets out the priorities for West Kintyre, as described by members of the community, which fall under four categories:

- Health and wellbeing;
- Communications and transport;
- Young people and families; and
- Development and enterprise.

16.4.25 Particularly important to local people were the idea of setting a community run bus service, encouraging local groups to advertise events, attracting young people and developing local infrastructure. This includes supporting further development of the Kintyre Way and encouraging wind farms to open tracks and paths to the interior.

16.4.26 The Windfarm Trust is mentioned several times as an important partner, funding solar panels and energy efficiency measures for local village/church halls as well as repairs of damage caused by flooding.

Population

16.4.27 The population of the local area (as defined by data zones S02001380 and S02001379 of the Kintyre Peninsula) is about 7,600 and comprises 8.7% of the population of Argyll and Bute, which is 87,130, as shown in Table 16.3: Population of Study Areas. Campbeltown is the fourth largest settlement in Argyll and Bute with 4,701 inhabitants. The population is older in the local area, with 27.0% of the population older over 65, than both Argyll and Bute (24.7%), and Scotland (18.5%). The working age population is also comparably smaller, with 57.6% of the population aged 16-64, compared to 60.1% in Argyll and Bute, and 64.6% in Scotland.

16.4.28 Although detailed projections are not available for the local area it is expected that the population of Argyll and Bute will decrease by 8.0% between 2014 and 2039, compared to population growth of 6.6% in Scotland.

Table 16.3: Population of Study Areas

	Local Area	**Local Authority Area**	**Scotland**
Population	7,591	87,130	5,404,700
Under 16	15.4%	15.2%	16.9%
16 – 64	57.6%	60.1%	64.6%
65+	27.0%	24.7%	18.5%
Expected Population Growth (2014-2039)	-	-8.0%	6.6%

Source: Scottish Neighbourhood Statistics, 2016. National Records Scotland (2017), Population Projections for Scottish Areas (2014-based).

Jobs and Employment

16.4.29 The proportion of Argyll and Bute's working age population who are economically active is 79.1%, higher than the 77.3% in Scotland (if Argyll and Bute had the same rate as Scotland, there would be about 900 fewer economically active people). The unemployment rate in Argyll and Bute is 1.9%, which is lower than the 4.4% rate in Scotland. The claimant count is 1.7% in Argyll and Bute, compared to 2.3% in Scotland. However, the median annual income in Argyll and Bute is £25,554, compared to £28,371 in Scotland, a difference of £2,800.

Table 16.4: Economic Indicators			
	Local Area	**Local Authority Area**	**Scotland**
Economic Activity Rate*	-	79.1%	77.3%
Unemployment Rate*	-	1.9%	4.4%
Claimant Count (% of working age)	-	1.7%	2.3%
Average Annual Income***	-	25,554	28,371

Source: *ONS (2018), Annual Population Survey, Oct 2016 – Sep 2017. **ONS (2018), Claimant Count, December 2017 ***ONS (2018), Annual Survey of Hours and Earnings, 2017.

16.4.30 The main industries of employment in the study areas are shown in Table 16.5: Industrial Structure. The combined employment of public administration and defence, education and health (sectors which represent the public sector) is 35.1% in the local area, higher than in Argyll and Bute (32.1%) and Scotland (29.1%). Public administration and defence is 10.2% of the economy, compared to 6.0% in Scotland and 9.0% in Argyll and Bute.

16.4.31 Accommodation and food services, as well as retail, represent proportionally lower employment, with 7.4% and 8.7% of employment respectively than in Argyll and Bute, and Scotland. In Argyll and Bute, they represent 15.4% and 9.0%, and in Scotland they represent 7.3% and 9.0%. Jobs in these industries are typically associated with the tourism industry.

16.4.32 The local area has a larger proportion of jobs in transport and storage (8.2%) and wholesale trade (7.2%) than in Argyll and Bute (5.1% and 2.1%) and Scotland (4.2% and 3.0%). The Kintyre peninsula is located on the West Coast, with an airport and recently expanded harbour.

16.4.33 Manufacturing is an important component of the local area's economy accounting for 9.8% of employment, higher than 4.5% in Argyll and Bute, and 7.0% in Scotland. Much of this employment is in CS Wind, which manufactures towers for wind turbines at its facility at Machrihanish.

Table 16.5: Industrial Structure			
	Local Area	**Local Authority Area**	**Scotland**
Agriculture & Forestry	2.0%	2.3%	2.9%
Mining and Quarrying	0.3%	0.4%	1.2%
Manufacturing	9.8%	4.5%	7.0%
Electricity, gas, steam and air conditioning	1.1%	0.8%	0.7%
Water supply, sewerage, waste	0.3%	0.3%	0.7%
Construction	3.8%	5.8%	5.4%
Trade in motor vehicles	1.0%	1.5%	1.9%
Wholesale trade	7.2%	2.1%	3.0%
Retail trade	8.7%	9.0%	9.0%
Transportation and storage	8.2%	5.1%	4.2%
Accommodation and food services	7.4%	15.4%	7.3%
Information and communication	1.1%	1.0%	2.9%
Financial and insurance activities	1.0%	0.6%	3.3%
Real estate activities	1.6%	1.8%	1.5%
Professional, scientific and technical services	4.3%	4.5%	6.9%

Table 16.5: Industrial Structure			
Administrative and support services	1.6%	7.7%	7.3%
Public administration and defence	10.2%	9.0%	6.0%
Education	9.8%	7.7%	7.3%
Human health and social work	15.1	15.4%	15.9%
Art, entertainment and recreation	4.1%	3.8%	3.1%
Other service activities	2.1%	2.1%	2.1%
Total	3,050	39,000	2,588,000

ONS (2017), Business Register and Employment Survey 2016

Tourism and Recreation

Tourism Economy

16.4.34 In 2016, there were 14.4 million trips to Scotland, of which 38% are from Scotland, 43% are from elsewhere in the UK, and 19% are from overseas. Overseas tourism spend was £1.85 billion.

16.4.35 There was a total of 1.8 million tourist trips in Argyll, Loch Lomond, Stirling and the Trossachs in 2016, of which 50% were from Scotland, 33% are from elsewhere in the UK, and 17% are from overseas. Total overseas expenditure was £94 million.

16.4.36 Within Argyll and Bute in 2015, the total sustainable tourism employment was 6,500, and in 2014 Gross Value Added (GVA) within the sustainable tourism sector was £126.7 million (VisitScotland, 2017).

Local Attractions

16.4.37 VisitScotland and Explore Argyll list things to do in Argyll and The Isles and identify key local attractions that are located within approximately 10 km of the site application boundary (VisitScotland, 2018) (Explore Argyll and the Isles, 2018) (Explore Kintyre, 2018). These include festivals such as:

- Mull of Kintyre Music Festival – this occurs annually in August;
- Kintyre Songwriters Festival;
- Gintyre;
- Kintyre Way Ultra – a 35-mile ultra-marathon/73-mile cycling event (Kintyre Way Ultra Website, 2018); and
- Scottish One Act Festival.

16.4.38 They also include attractions in Campbeltown such as:

- Campbeltown Heritage Centre – this museum is open all year;
- Campbeltown distilleries – three of which are open to the public;
- Campbeltown Cross – this is a medieval cross situated in Campbeltown;
- Campbeltown Museum;

16.4.39 They also include attractions on the west coast of Kintyre such as:

- West Port beach;
- Glenbarr Abbey Macalister Clan Visitor Centre;
- Glenbarr Garden Centre;
- Machrihanish Golf Club and Machrihanish Dunes Golf Club;
- Anne Stewart Knitwear – a shop specialising in traditional west coast of Scotland hand knitting.

16.4.40 They also include long distance routes such as;

- the Caledonia Way; and
- the Kintyre Way – including the Kintyre Ultra, an ultra-marathon that follows the Kintyre Way from Tayinloan to Campbeltown, which emphasises the challenging, varied terrain, and 'stunning scenery with views across the sea to Arran, Islay, Jura and Gigha' (Kintyre Way Ultra, 2018).

16.4.41 There are two golf courses located amongst the sand dunes to the south-west of the application boundary: Machrihanish Golf Club and Machrihanish Dunes Golf Club. The Machrihanish Golf Club was established in 1876 whilst the Machrihanish Dunes Golf Club opened in 2009. Both courses are popular destinations for golfers from all over the world and are frequently included in the top 100 courses list in the UK and Ireland.

16.4.42 Westport beach is located off the A83, approximately 2.3 km south-west of the site and is popular with walkers and surfers in the local area (Explore Argyll and the Isles, 2018).

16.4.43 There are three operational distilleries in Campbeltown (Springbank, Glengyle and Glen Scotia). Campbeltown is classified as one of the whisky producing regions of Scotland, along with regions such as Speyside and Islay.

16.4.44 The Caledonia Way is a recently completed 381 km cycle route from Campbeltown to Inverness. The first of the three legs is between Campbeltown and Oban, and provides an opportunity to explore the Kintyre Peninsula as well as Lorn and Knapdale. According to the Sustrans website '...there are fantastic views of the islands of Jura and Arran, with pretty harbours, castles, abbeys and ancient stones to explore' (Sustrans, 2018).

16.4.45 The Kintyre Way is a popular local attraction for walkers and also provides access to important cultural heritage assets such as Saddell Abbey, Tarbert Castle and Skipness Castle, as well as the lighthouse at the Mull of Kintyre (Kintyre Way, 2018). A 2015 emergency funding proposal from Mid Argyll, Kintyre and the Islands Area Committee claims that 2,500 visitors walk the Kintyre Way each year, which is estimated to bring £1 million into the local economy (Mid Argyll, Kintyre and the Islands Area Committee, 2015).

16.4.46 The section of the Kintyre Way between Tayinloan and Carradale passes through the operational Deucheran Hill Wind Farm. When describing this section of the route, the Kintyre Way website states, this '...is a very varied and satisfying walk which even takes you through the Deucheran Wind Farm letting you see the turbines working' (Kintyre Way, 2018). Further information on the Kintyre Way as a recreational facility is provided below in the section covering walking, cycling and horse riding.

16.4.47 The recreational value of the site itself is limited. According to the West Lussa forest LMP: '*Recreational activity is limited within the forest with few formal recreation sites*' and '*Local Tourism businesses linked to the forest are limited'* with much of this business is related to the Kintyre Way, which '*mainly follows the forest road network from Guesdale in the north to Gobagrennan*'. Tangy Long-Term Forest Plan agrees that "the area has very limited recreational activity."

Accommodation

16.4.48 The nearest accommodation to the proposed development is Dalnaspidal Guest House, which includes a self-catering cottage. The guest house is approximately 900m to the south of the site.

16.4.49 Accommodation facilities identified at Campbeltown include six hotels, one hostel, four bed and breakfasts and fourteen self-catering facilities (VisitScotland, 2018) (Explore Argyll and the Isles, 2018) (Explore Kintyre, 2018).

16.4.50 Accommodation out-with Campbeltown within 10 km of the proposed development and located along the west coast of the peninsula includes, but may not be limited to:

- Self-catering – Barmain Cottage, Beachfront Lodge, Belloch Cottage, Bruntholme, Carraig, Charlie's Cottage, Craigmore East, East Drumlemble, Failte, Gigha/Islay/Jura Cottages, High Trodigal, Island View Holiday Cottage, Langa Cottage, Lochside Lodge, Kildalliog Estate Cottages, Oatfield House, Rhoin Farm, Rothmar East, the Sheiling, Shore Cottage, Skerrivore, Tangy Mill, the Village Hall;
- Machrihanish Holiday Park – Caravan park;
- Killieguer Caravan Site – Caravan park;
- The Putechan – Hotel;
- The Ugadale Hotel & Cottages – Hotel; and
- Argyll Hotel, Bellochantuy – Hotel.

16.4.51 Accommodation located along the east coast of the peninsula includes, but may not be limited to:

- Peninver Sands Holiday Park – Caravan park;
- Craiglussa – Self-catering;
- Shore Cottages – Self-catering;
- Ashbank Hotel, Carradale – Hotel;
- Carradale Hotel, Carradale – Hotel;
- Dinvalanree, Carradale – Hotel;
- Mingulay, Carradale – Self-catering; and
- Star Gazer Cottage, Carradale – Self-catering.

Walking, Cycling and Horse Riding

16.4.52 The Walkhighlands website lists 17 walks in the Kintyre peninsular, including The Kintyre Way (Walkhighlands, 2018). The Kintyre Way (opened in 2006) is a long-distance path and is the only designated path located in the vicinity of the proposed development. The path provides walkers with access to the entire length and breadth of the Kintyre peninsula and is approximately 144 km long. The current route of the Kintyre Way passes through the study area to the west of Lussa Loch.

16.4.53 A section of the Kintyre Way is also designated as a proposed core path (C088: Campbeltown to Cloanig). This section is approximately 53 km in length. During consultation between the applicant and The Kintyre Way (part of the Long and Winding Way Company Ltd), the possibility of re-routing the path partially through the proposed development was investigated in relation to the Tangy III application (2014).

16.4.54 Core paths within the south-east section of the study area include:

- C084 – Campbeltown to Stewarton (2.7 km in length);
- C086 – Machrihanish to West port (6.2 km in length);
- C087 – Sound of Kintyre housing to beach (1.7 km in length);
- C447 – Darlochan to Stewarton (1.5 km in length);
- C448 – Stewarton to Clochkeil, Campbeltown (4.1 km in length); and
- C085 – Stewarton to Machrihanish (7.0 km in length).

16.4.55 There are no rights of way within the study area.

16.4.56 National Cycle Route 78 (the Caledonia Way) passes through the Kintyre peninsula, connecting Inverness in the north to Campbeltown in the south. At its closest point, the route is approximately 8.9 km from the proposed development. The cycle route is approximately 381 km long and passes to the east of the proposed development via the B842 (Sustrans, 2018).

16.4.57 There are no formal cycleways or equestrian routes within the study area, however it has been assumed that the Kintyre Way may be used by cyclists and equestrians, subject to standing restrictions during lambing and when shooting activities are taking place.

Shooting/Deer Stalking/Fishing

16.4.58 Lussa Loch and Tangy Lochs are used by anglers for their populations of brown trout and are located approximately 3 km east and 350 m south-east respectively from the site application boundary (Welcome to Scotland, 2018).

16.4.59 The Killean Estate is located approximately 15 km north of the site application boundary, south of Tayinloan, and offers game and bird shooting throughout the year. It also promotes fishing on the estate with the Killean Estate website (Killean Estate, 2018) stating that:

'The fishing opportunities on the Killean Estate are fantastic, with two lochs and a secluded pond offering good numbers of brown trout.'

Water Sports

16.4.60 Westport Surf School is based in Mid Argyll Swimming Pool in Lochgilphead and frequently uses the beach at Westport for its activities to the west of the site application boundary.

Summary

16.4.61 The population of Kintyre is relatively older than the population of Scotland and the median wages of Argyll and Bute are relatively lower than for Scotland. Areas identified as providing potential future growth include renewables (especially the tower factory at Machrihanish), and tourism, and revenue from community benefit funds can support this growth. Important elements of the area's tourism offering include Campbeltown's distilleries, festivals, the coastline (including golf) and long-distance routes. Tourist accommodation is clustered in Campbeltown, and on either coast.

16.5 Effects Evaluation

Basis of Assessment

Proposed Development Characteristics

16.5.1 The proposed development is expected to consist of 16 turbines of up to 149.9m in height and an installed capacity of up to 80 MW.

Land Use Mitigation

16.5.2 Based on review of the proposals and of the potential effects, the following measures will be implemented to avoid or reduce effects on land use:

- liaison with landowners regarding the timing of works;
- restriction of construction plant and personnel to working areas to reduce disturbance and vegetation damage;
- liaison with local community and local authority to inform traffic management measures to maintain access to the A83 and minimise disruption to the local road network; and
- land not required for the operation of the proposed development, will be returned to the landowner for uses compatible with operational activities.

16.5.3 The Scottish Government Policy on the Control of Woodland Removal (CoWR), which was published by the Forestry Commission Scotland, states the conditions for woodland removal with or without the requirements for compensatory planting (CP) (Forestry Commission, 2009). The CoWR describes that compensatory planting is most likely to be appropriate where it would contribute significantly to:

- helping Scotland mitigate and adapt to climate change;
- enhancing sustainable economic growth or rural/community development;
- supporting Scotland as a tourist destination;
- encouraging recreational activities and public enjoyment of the outdoor environment;

- reducing natural threats to forests or other land; and
- increasing the social, economic or environmental quality of Scotland's woodland cover.

16.5.4 The proposed forest management within the proposed development has been developed through consultation with Forestry Commission Scotland. The Long-Term Forest Plan details the felling of a reduced area within the site boundary and the replanting to a keyhole design including bat buffer clearance. The area of woodland loss is subject to offsite compensatory planting. The applicant currently owns a plot of land exceeding this area to the west of Campbeltown with the intention of meeting the compensatory planting commitments.

16.5.5 In 2015 a revised 'Guidance to Forestry Commission Scotland (FCS) staff on implementing the Scottish Government's Policy on Control of Woodland Removal' was published (Forestry Commission, 2015). This guidance document sets out a framework for calculating the net area of compensatory planting and addresses the practicalities of location, standards and methods, and timing, as described below.

16.5.6 To achieve the highest net public benefit and subject to the relevant conditions, agreements or approvals, compensatory planting can be undertaken on appropriate sites anywhere in Scotland. However, local planning authorities may require compensatory planting within their own area.

16.5.7 Local forestry and woodland strategies and related guidance should be used to help identify suitable areas for tree planting, and compensatory planting must be carried out in accordance with good forestry practice defined by the UK Forestry Standard (Forestry Commission, 2017).

16.5.8 Although direct planting will normally be preferable, proposals for the use of natural regeneration should be considered where this is silviculturally feasible and capable of enforcement. Compensatory planting is anticipated to take place within approximately 5 years of woodland removal.

Socio-Economics Enhancement

16.5.9 It is also expected that there will be measures to enhance the socio-economic effect of the proposed development.

16.5.10 The applicant has made other commitments to the regional and national economy to realise the opportunities that wind farm developments provide. As well as providing economic effects through employment and investment, these investments will create effects through the supply chain. As part of this commitment, the applicant has also previously procured tower sections for a number of its wind farm projects from the CS Wind facility at Machrihanish (previously Wind Towers Ltd), a manufacturer of turbine towers. Though it is understood that employment has recently decreased at the Machrihanish facility, a previous case study undertaken by BiGGAR Economics found that CS Wind (then Wind Towers) made purchases from 46 companies in Argyll and Bute worth £0.2 million in turnover, including purchase worth £0.2 million from 34 companies in South Kintyre. Many of these companies are small and medium enterprises. The presence of CS Wind has contributed to infrastructure improvements to the local area including upgrading the road to Campbeltown to trunk road status and improving the harbour.

16.5.11 Local firms will have the opportunity to tender for construction and operational services due to the applicant's commitment to use local suppliers, contractors and services where possible and available. The applicant has adopted the Engineering Construction Industry Training Board (CITB) Training Charter to ensure that when appointing contracts, consideration is given to the training and development approach in the assessment of tenders. In addition to this, the applicant makes significant effort to raising awareness of the type of roles that contractors could secure from local people. The applicant will also examine tender offer commitments to employ people from the local community that have been trained from local colleges.

16.5.12 The applicant wants to become the best in the Highlands and Islands at engaging with the local and SME communities and be the most 'Open for Business' company in the region. Therefore, it has set

up an open4business site, which facilitates trade and engagement between the applicant and local suppliers and service providers. It will provide a platform for the applicant to promote opportunities originating in the region and will allow local suppliers to have visibility of the opportunities provided by the applicant, register as a supplier and respond to notices free of charge. Users of the site can then also advertise their own opportunities such as sub-contracting work for projects by the applicant. They can also use the portal to advertise their own opportunities to the local supplier base.

Tourism Mitigation

16.5.13 To mitigate any potential effects on tourism during the construction of the wind farm, the local community would be regularly updated, and plans would be implemented to ensure they are informed of the anticipated construction traffic movements and its potential effects.

Recreation Mitigation

16.5.14 Information will also be provided for local users regarding construction or decommissioning activity to reduce any effects experienced.

16.5.15 Contractors will liaise with the landowners to minimise the disruption to any activities on private land where possible.

16.5.16 No specific mitigation is proposed with regard to recreation during operation as no significant effects are anticipated.

Effects on Land Use

16.5.17 The woodland area within the proposed development site is comprised of three ownerships amounting to some 463.86 ha. These woodlands form part of extensive upland productive conifer forests within this part of Kintyre, for example the National Forest Estate, West Lussa Forest is comprised of 2,482 ha of forest, out of 7,999 ha of forest which comprise Lussa Forest on Kintyre (Forestry Commission Scotland, 2017). These forests provide significant harvested timber with limited recreational use. Following consultation with Forestry Commission Scotland a Long-Term Forest Plan has been created detailing felling and replanting to a keyhole design.

16.5.18 Felling will be carried out over some 270.75 ha within the site, of which 199.85 ha will be replanted post construction. The balance of the area comprises of designed open ground (30.43 ha) in accordance with UK Forestry Standards. Peatland restoration (27.72 ha) will be undertaken in accordance with Forestry Commission Scotland Practice Guide, *Deciding the future management options for afforested deep peatland* (2015). Where woodland is not replanted on site due to permanent infrastructure and bat buffer clearance areas around each turbine, the equivalent area will be planted offsite as compensatory planting (31.73 ha). Off-site planting will be through the normal channels of approval with Forestry Commission Scotland and follow the UK Forestry Standard (UKFS) guidelines.

Table 16.6: Land use - Forestry

	(ha)
Total woodland area within the site boundary	463.86
Felling required for the proposed development	270.75
Replanting on site (Productive conifer 196.35ha, native broadleaf 3.50ha)	199.85
Designed open ground (UKFS)	30.43
Permanent infrastructure including bat clearance areas not planted	31.73
Compensatory Planting offsite matching the area of woodland loss	31.73

16.5.19 Existing sections of access track used for the existing wind farm will be upgraded, resulting in some land use on either side to increase the running surface width to between 7.7 m and 8.6 m and to

incorporate passing places, for both turbines and 4 x 4 vehicles; further details are provided in Chapter 5 (Description of Development).

16.5.20 There may be temporary disruption to the area along local roads such as the A83 due to construction vehicles accessing the site, refer to Chapter 15 (Access, Transport and Traffic) for a detailed assessment of the effects on access.

16.5.21 The land use requirements during construction and operation are described in Table 5.1, Chapter 5 (Description of Development) It is estimated that the maximum temporary land use requirements during construction would be approximately 82 ha. It is expected that any construction impact, would be short-term and would not materially impact on the existing land use at the site. Most of the impacts will be reversed in the long term with reinstatement, replanting on site and Compensatory Planting being undertaken, and the new/upgraded access tracks will have a positive impact. Therefore, the effect of temporary land use is assessed as **minor and not significant**.

Predicted Ongoing and Operational Effects

16.5.22 It is estimated that the maximum permanent development footprint of the proposed development will be approximately 14 ha. Within the forest area the amount of land to accommodate the permanent infrastructure and the unplanted ground associated with bat clearance buffer zones will be 31.73 ha, however as stated, the forests are currently in the restructuring phase and are considered to be able to tolerate this proposed change.

16.5.23 During decommissioning of the proposed development, the turbines, turbine bases, met masts, substation and operations buildings would be removed, with approximately 3.62ha of land re-instated and restored. It is currently anticipated that the access tracks would be retained post decommissioning resulting in a permanent loss of 6.26 ha (refer to ES Chapter 5: Description of the Development for further details).

16.5.24 The land use change proposed would not materially impact on the existing land use at the site. As such it is expected that the land use change will be **negligible and not significant**.

Summary of Effects on Land Use

16.5.25 A summary of effects on land use is considered in Table 16.7: Summary of Land Use Effects.

Table 16.7: Summary of Land Use Effects

Asset	Type of Effect	Effect	Mitigation	Significance
Land use	Construction	Minor effect given forests are already in restructuring phase. Overall change to land use considered to be not material.	Liaise with stakeholders, restrict plant and personnel, and minimise disruption to road network.	Minor
Land use	Operation	Negligible permanent land use requirement of 14 ha. Forests are already in restructuring phase and will be replanted to a key hole design.	Replanting, peatland restoration and designed open ground. The balance of woodland loss (31.73ha) to be planted off site as Compensatory Planting.	Negligible

Source: BiGGAR Economics Analysis.

Socio-Economic Effects

Construction Effects

16.5.26 As set out in Section 16.3 Methodology, the first step to estimating the potential effect of the proposed development was to estimate the potential cost. The total development and construction cost of the proposed development is estimated by multiplying the expected installed capacity, up 80 MW, by the industry average for the development and construction cost per MW. The average development and construction cost is £1.5 million (RenewableUK, 2015). Therefore, the total capital cost associated with the proposed development was estimated to be £120 million.

16.5.27 Development and construction are split into four main categories:

- development and planning;
- construction/infrastructure;
- turbines; and
- grid connection.

16.5.28 The proposed development is not a standard onshore wind development as the project will include the repowering of the site, which has been included in the construction/infrastructure stage of the development. However, the costs of the repowering are expected to be offset by savings during the balance of plant and grid connection stages of the proposed development. The estimated division of the total capital spend is given in Table 16.8: Development and Construction Expenditure by Contract Type – Construction Phase. This shows that the grid connections and feasibility and planning phases of the development incur a smaller proportion of the capital development and the construction/infrastructure is greater.

Table 16.8: Development and Construction Expenditure by Contract Type – Construction Phase

	RenewableUK %	**Tangy IV %**	**Value (£m)**
Feasibility and Planning	10.2%	5.4%	6.48
Construction/Infrastructure	25.6%	31.8%	38.16
Turbines	57.8%	57.8%	69.36
Grid Connections	6.3%	5.0	6
Total	**100%**	**100%**	**120**

Source: BiGGAR Economics assumption based on previous experience.

16.5.29 The next stage is estimating the geographical distribution of the economic effect is to consider the value of each contract that could be awarded in each study area. These estimates are based on an analysis of the industries and businesses that are located in each area and previous studies undertaken by BiGGAR Economics, including the report for RenewableUK.

16.5.30 The analysis of the Argyll and Bute economy found that it would be in a strong position to take advantage of contracts in mechanical and electrical engineering as part of the construction phase. There would also be opportunities for the manufacturing sector, particularly for the turbine towers, which are expected to be manufactured in Kintyre. The potential proportion of component contracts that could be secured in each of the study is given in Table 16.9: Proportion of Components that could be Secured in Each Study Area - Construction.

Table 16.9: Proportion of Components that could be Secured in Each Study Area - Construction

	Kintyre	**Argyll and Bute**	**Scotland**
Feasibility and Planning	**7%**	**9%**	**90%**
Project development	10%	10%	90%
Legal and financial	0%	5%	90%

Table 16.9: Proportion of Components that could be Secured in Each Study Area - Construction			
	Kintyre	**Argyll and Bute**	**Scotland**
Project management	15%	15%	90%
Construction/Infrastructure	**5%**	**20%**	**95%**
Civil & project management	10%	20%	95%
Roads	0%	20%	95%
Substation buildings	0%	20%	95%
Turbine foundations	0%	20%	95%
Landscaping/Forestry/Fencing	0%	40%	95%
Mechanical & Electrical Installation	0%	20%	95%
Turbines	**12%**	**12%**	**12%**
Tower Manufacture	100%	100%	100%
Other Manufacture	0%	0%	0%
Assembly	5%	10%	10%
Transport	10%	10%	10%
Grid Connections	**0%**	**10%**	**100%**
Engineering Services	0%	10%	100%
Construction	0%	10%	100%
Electrical Components	0%	10%	100%
Industrial equipment & machinery	0%	10%	100%
Total	**9%**	**14%**	**47%**

Source: BiGGAR Economics assumption based on previous experience.

16.5.31 Based on this analysis it was estimated that the local area could secure contracts worth £10.8 million, which is equivalent to 9% of the total value of the capital expenditure, and support 95 job years. The largest opportunity in the local area would be in turbine contracts (including the towers), which could be worth £6.8 million and support 59 job years.

16.5.32 Argyll and Bute could secure contracts worth £16.8 million, which is equivalent to 14% of the total value of the capital expenditure, and support 142 job years. The largest opportunities will be from the turbine related contracts, which could be worth £7.1 million and support 61 job years, and the construction/infrastructure related contracts, which could be worth £6.5 million and support 55 job years.

16.5.33 The largest opportunity in Scotland would be during the construction/infrastructure phase of the development and Scotland could secure contracts worth £30.5 million and support 252 job years. In total, Scotland could secure contracts worth £56.4 million, which is equivalent to 47% of the total capital expenditure, and support 471 job years. This is shown in Table 16.10: Estimated Size of Contract that could be Secured in Each Study Area - Construction.

Table 16.10: Estimated Size of Contract that could be Secured in Each Study Area - Construction						
	Kintyre		**Argyll and Bute**		**Scotland**	
	£m	Job years	£m	Job years	£m	Job years
Feasibility and Planning	0.5	4.9	0.6	5.7	5.8	61.5
Construction/Infrastructure	2.1	21.9	7.5	63.0	36.1	298.2
Turbines	8.3	71.9	8.2	69.9	8.4	72.2
Grid Connections			0.6	3.4	6.0	39.1
Total	**10.8**	**95**	**16.8**	**142**	**56.4**	**471**

Source: BiGGAR Economics assumption based on previous experience.

16.5.34 The people who are directly employed during the development and construction of the proposed development will have an effect on the wider economy through the spending of their wages. The induced effect is a result of the increased turnover in the businesses where these wages are spent. Previous work by BiGGAR Economics (Department of Energy and Climate Change, RenewableUK, 2012) found that the average salary in the onshore wind sector was £34,600. Therefore, the 471 job years in Scotland would result in £17.1 million being paid in salaries to workers during the development and construction phase.

16.5.35 In order to estimate the geographic effect of the staff spending it was necessary to make assumptions regarding where the wages would be spent. It was assumed that the workers in Kintyre would spend 35% of their income in Kintyre, workers in Argyll and Bute would spend 45% of their wages in Argyll and Bute, and those in Scotland would spend 74% of their wages in Scotland, as shown in Table 16.11: Estimated Effects of Wages and Spend in the Local Economy.

Table 16.11: Estimated Effects of Wages and Spend in the Local Economy						
	Kintyre		**Argyll and Bute**		**Scotland**	
	£m	Job years	£m	Job years	£m	Job years
Effect of Wages	0.3	7	0.7	13	3.5	71

Source: BiGGAR Economics analysis.

16.5.36 The total economic effect during the development and construction phase of the proposed development was found by summing the direct contract effects and the induced effect from staff spending, see Table 16.12: Total Benefits of Development and Construction Contracts.

Table 16.12: Total Benefits of Development and Construction Contracts						
	Kintyre		**Argyll and Bute**		**Scotland**	
	£m	Job years	£m	Job years	£m	Job years
Total	11.1	102	17.5	155	59.9	542

Source: BiGGAR Economics analysis.

16.5.37 As outlined in Section 16-7, the total employment in Kintyre is about 3,050, of which 300 jobs are in manufacturing, and it is estimated that over the duration of the development and construction could support 102 job years of employment. On this basis, the potential effects in Kintyre would be **moderate beneficial and significant**.

16.5.38 Total employment in Argyll and Bute is about 39,000, of which about 1,750 jobs are in manufacturing. As the number job years supported is expected to be 155 it is expected that the effect would be **minor beneficial and not significant**.

16.5.39 The significance in the Scottish economy is expected to be **negligible and not significant.**

Predicted Ongoing and Operational Effects

16.5.40 The annual spend on operations and maintenance during the lifespan of the proposed developments is dependent on the total installed capacity. The study undertaken on behalf of RenewableUK has found that the average annual operation and maintenance cost per MW was about £60,000. Therefore, the estimated annual cost of operations and maintenance based on a capacity of up to 80 MW would be is £4.8 million. It has been estimated that Kintyre could secure 20% of the operations and maintenance contracts, which are estimated to be worth £0.96 million every year. Argyll and Bute could secure 35% of the contracts awarded which are estimated to be £1.68 million every year. Scotland could secure 90% of total operations and maintenance, which would amount to £4.32 million every year.

16.5.41 There will also be effects due to wages spent in the study areas. This spend could add an annual £0.2 million to the Scottish economy, and 5 jobs. The total operations and maintenance effect is estimated to be £0.96 million and 8 jobs in Kintyre, £1.78 million and 13 jobs in Argyll and Bute, and £4.52 million and 37 jobs in Scotland, as shown in Table 16.13: Total Benefits of Operational and Maintenance Contracts. These jobs include both on-site operational jobs and those supported by the operational and maintenance contracts (for example, on the maintenance of the site and the servicing of turbines), which will be based off-site, elsewhere in the Kintyre, Argyll and Bute and Scottish economies. These will include employees, contractors and those providing goods and services in the wider supply chain.

Table 16.13: Total Benefits of Operational and Maintenance Contracts

	Kintyre		**Argyll and Bute**		**Scotland**	
	£m	Job years	£m	Job years	£m	Job years
Annual Direct Effect	0.96	7	1.68	12	34.32	32
Annual Induced Effect	<0.1	1	0.1	1	0.2	5
Total Annual Effect	**0.96**	**8**	**1.78**	**13**	**4.52**	**37**

Source: BiGGAR Economics analysis.

16.5.42 Based on the benefits described in Table 16.13, it is expected that the effect will be **minor beneficial and not significant** in Kintyre, and **negligible and not significant** across the other two study areas.

Community Benefit

16.5.43 The applicant's policy on community investment is currently under review. The Scottish Government is set to consult on arrangements for community ownership and community benefit during 2018 and the applicant is engaging positively in this process. As a responsible developer, the applicant aims to maximise the benefit for local communities where possible. It is anticipated that any community benefit funding would have a beneficial effect at a local scale in Kintyre. Community benefit is not a material consideration in EIA, and therefore the significance has not been assessed.

16.5.44

Non-Domestic Rates

16.5.45 The proposed development will be liable for non-domestic rates, the payment of which will contribute directly to public sector finances. Guidance from the Scottish Assessors Association from 2010 recommends a Load Factor of 25% for the area considered and a rateable value of £18,557 (Scottish Assessors Association, 2010).

16.5.46 Given that the proposed development will be up to 80 MW, it is estimated that the total rateable value will be £1.48 million. Given a poundage rate of £0.492 per £1 of rateable value (Argyll and Bute Council, 2018) it is estimated that the proposed development could contribute £0.73 million annually to public finances. However, the actual contribution will depend on variables such as the actual load factor, and the potential for any relief from non-domestic rates.

Table 16.14 Non-Domestic Rates	
	Value
Rateable value per MW (£)	18,557
Poundage rate	£0.492
Annual Contribution (£m)	0.73

Source: BiGGAR Economics analysis.

16.5.47 It is expected that any increase in non-domestic rates will provide a **negligible beneficial effect (not significant).**

Summary of Effects on Socio-Economics

16.5.48 A summary of socio-economic effects is considered in Table 16.15: Summary of Socio-economic Effects.

Table 16.15: Summary of Socio-economic Effects				
Economy/Organisation	**Type of Effect**	**Effect**	**Mitigation**	**Effect**
Kintyre economy	Construction	Construction impact of £11.1 million and 102 job years.	applicant will make efforts to employ and train local people.	Moderate (beneficial) – significant.
Argyll and Bute economy	Construction	Construction impact of £17.5 million and 155 job years.	applicant will make efforts to employ and train local people.	Minor (beneficial) – not significant.
Scotland economy	Construction	Construction impact of £59.9 million and 542 job years.	applicant will make efforts to employ and train local people.	Negligible (beneficial) – not significant.
Kintyre economy	Operational	Annual operational impact of £0.96 million and 8 jobs.	applicant will make efforts to employ and train local people.	Minor (beneficial) – not significant.
Argyll and Bute economy	Operational	Annual operational impact of £1.78 million and 13 jobs.	applicant will make efforts to employ and train local people.	Negligible (beneficial) – not significant.
Scotland economy	Operational	Annual operational impact of £4.52 million and 37 jobs.	applicant will make efforts to employ and train local people.	Negligible (beneficial) – not significant.
Government	Operational	Estimated £0.73 million in non-domestic rates annually.	n/a	Negligible (beneficial) – not significant.

Effects on Tourism/Recreation Assets

Wind Farms and Tourism Evidence

16.5.49 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 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.

16.5.50 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 wind farms on tourism at the national, regional and local level (BiGGAR Economics, 2017). This was an updated study of a report previously published in 2016.

16.5.51 Tourism employment was considered over the period 2009 to 2015, a six-year period over which Scotland and almost all local authorities increased the number of wind farms, 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.

16.5.52 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 wind farms on local employment, while excluding construction impacts, such as wind farm related employees staying in local accommodation.

16.5.53 At the local authority level in these smaller areas, no link was found between the development of a wind farm 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 as a whole.

16.5.54 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 wind farms and tourism employment at the level of the Scottish economy, at the local authority level, nor in the areas immediately surrounding wind farm development. 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.

16.5.55 In 2014, the Mountaineering Council of Scotland, now Mountaineering Scotland (MS) undertook a survey of its members (Mountaineering Scotland, 2014), which found that the presence of windfarms discouraged some members from visiting those areas and suggested that this would reduce the scale of Scottish tourism. However, the survey has drawn criticism, including from its own members as the questions were considered leading and the results biased (as the report on the survey recognises itself) and the survey may not represent the views of all hill walkers or tourists more generally, as it targeted members of MS or the British Mountaineering Council.

16.5.56 In 2016, MS conducted a new survey of its members (Mountaineering Scotland, 2016), which aimed to address some of these issues. It found that for 75% of respondent's windfarms had no effect on their walking and climbing plans. However, 22% responded that they would go as often but avoid areas with windfarms, 1% would go to the mountains less often. However, 2% of respondents said they would go to the mountains more often to see windfarms.

16.5.57 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 when the windfarms have been developed.

16.5.58 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 that could lead to changes in the behaviour of tourists that might result in effects on the tourism economy.

Tourism/Recreation Assets

16.5.59 The tourism/recreation assets identified in the section are split by category/geography on Kintyre. Therefore, although each individual asset is considered individually, they are assessed as a group:

- Festivals;
- Campbeltown attractions;
- West Coast of Kintyre tourism and recreation assets; and
- walking routes.

Construction effects

16.5.60 Construction is expected to have limited effects on the festivals identified, Campbeltown, the West coast tourism assets or the walking routes. Therefore, the effect is assessed as **negligible and not significant**.

Predicted Ongoing and Operational Impacts

16.5.61 The festivals which have been identified as taking place in Kintyre include focus either on the region's cultural and musical heritage, such as the Mull of Kintyre Music Festival, or food and drink, e.g. Gintyre, and neither of these aspects are expected to change following the construction of the proposed development. Therefore, the effect is assessed as **negligible and not significant**.

16.5.62 Campbeltown is one of the main tourism towns in Argyll and Bute, with its main attractions being buildings such as heritage centre, museum and distilleries. There is also the Campbeltown Cross. As these attractions rely on Campbeltown's history, heritage and food and drink offering, rather than landscape or scenery, the effect is assessed as **negligible and not significant**.

16.5.63 The attractions on the west coast of Kintyre are based either on heritage, for example Glenbarr and Anne Stewart Knitwear, or the local environment and landscape, such as the golf clubs or West Port beach. It is not likely that there will be an impact on the heritage tourism assets.

16.5.64 Although the golf clubs are based to an extent on the landscape, they rely more on the proximity of the ocean, and the local environment of the dunes, which makes the courses links courses. Machrihanish Dunes is also 6 km from the proposed development and Machrihanish Golf Club is 7-10 km from the site.

16.5.65 Westport Beach is at its furthest 9 km from the proposed development and 2.3 km at its closest, and it stretches over 9-10 km. VisitScotland describes it as 'one of the most beautiful beaches in the west coast of Scotland', and the 'biggest sand dune area in Argyll' (VisitScotland, 2018). These factors will not be affected by the presence of the proposed development. Therefore, the Therefore, the effect is assessed as **minor and not significant**.

16.5.66 While part of the appeal of the Kintyre Way and the Caledonia Way is the landscape, which may be changed as a result of the proposed development, they span 140 km and 381 km respectively and therefore any landscape impact will be very limited. Additionally, passing through Deucheran Hill Wind Farm is advertised as a positive on the Kintyre Way website (Kintyre Way, 2018). Effects on other walking routes are expected to be minimal. Therefore, the effect is assessed as **minor and not significant**.

Summary of Effects on Tourism/Recreation Assets

16.5.67 A summary of effects on tourism/recreation assets is considered in Table 16.16: Summary of Effects on Tourism/Recreation Assets.

Table 16.16: Summary of Effects on Tourism/Recreation Assets

Assets	Type of Effect	Effect	Mitigation	Effect
Festivals	Construction	No predicted effect	n/a	Negligible
Campbeltown tourism/recreation	Construction	No predicted effect	n/a	Negligible
West coast tourism/recreation	Construction	No predicted effect	n/a	Negligible
Walking routes	Construction	No predicted effect	n/a	Negligible
Festivals	Operation	No predicted effect	n/a	Negligible
Campbeltown tourism/recreation	Operation	No predicted effect	n/a	Negligible
West coast tourism/recreation	Operation	Some landscape impacts	n/a	Minor
Walking routes	Operation	Some landscape impacts	n/a	Minor

Effects on Tourism Accommodation

16.5.68 The tourism accommodation providers in the following locations have been assessed:

- Campbeltown accommodation;
- west coast of Kintyre accommodation; and
- east coast of Kintyre accommodation.

Construction Effects (Beneficial)

16.5.69 It is expected that the construction of the proposed development will have no negative effect on accommodation on the Kintyre peninsula. However, it is likely to have a positive impact on accommodation in Campbeltown, the west coast and the east coast, as the workers stay at local accommodation during the construction of the proposed development. Therefore, it is assessed a **minor (beneficial)** effect in Campbeltown, the west coast and the east coast.

Predicted Ongoing and Operational Impacts

16.5.70 It is considered unlikely that tourism accommodation in Campbeltown, which is generally in built up areas, will have any views of the proposed development, nor that this would affect what attracts visitors to stay in Campbeltown: the atmosphere and the heritage. Therefore, the effect is assessed as **negligible and not significant**.

16.5.71 There are numerous accommodation facilities on the west coast, and several have views of the existing development. These will continue to have views of the proposed development once operational, however given the existing views it is expected that at the effect will be **minor and not significant**.

16.5.72 The majority of accommodation facilities on the east coast, in particular Carradale do not have views of the existing development and this is not expected to change. Therefore, the effect is assessed as **negligible and not significant**.

Summary of Effects on Tourism Accommodation

16.5.73 A summary of effects on tourism accommodation is considered in Table 16.17 Summary of Tourism Accommodation Effects.

Table 16.17 Summary of Tourism Accommodation Effects

Providers	Type of Effect	Effect	Mitigation	Effect
Campbeltown accommodation	Construction	Workers staying at local accommodation	n/a	Minor (beneficial)
West coast accommodation	Construction	Workers staying at local accommodation	n/a	Minor (beneficial)
East coast accommodation	Construction	Workers staying at local accommodation	n/a	Minor (beneficial)
Campbeltown accommodation	Operation	No predicted effect	n/a	Negligible
West coast accommodation	Operation	Some landscape impacts	n/a	Minor
East coast accommodation	Operation	No predicted effect	n/a	Negligible

16.6 Summary

16.6.1 It is expected that there will minor effects associated with land use during construction, moderate, minor and negligible benefits in the economy, and negligible or minor (beneficial) effects on tourism and recreation. Table 16.18 provides a summary of the predicted construction stage effects.

Table 16.18: Summary of Construction Effects			
Asset/Economy/ Organisation/Providers	**Predicted Effect**	**Mitigation**	**Effect**
Productive conifer forests	Felling of 270.75ha of productive conifer forest	Forest Plan details the felling operations in accordance with UKFS	Minor and not significant
Kintyre economy	Construction impact of £11.1 million and 102 job years	applicant will make efforts to employ and train local people	Moderate (beneficial) and significant
Argyll and Bute economy	Construction impact of £17.5 million and 155 job years	applicant will make efforts to employ and train local people	Minor (beneficial) and not significant
Scotland economy	Construction impact of £59.9 million and 542 job years	applicant will make efforts to employ and train local people	Negligible (beneficial) and not significant
Festivals	No predicted effect	n/a	Negligible and not significant
Campbeltown tourism/recreation	No predicted effect	n/a	Negligible and not significant
West coast tourism/recreation	No predicted effect	n/a	Negligible and not significant
Walking routes	No predicted effect	n/a	Negligible and not significant
Campbeltown accommodation	Workers staying at local accommodation	n/a	Minor (beneficial) and not significant
West coast accommodation	Workers staying at local accommodation	n/a	Minor (beneficial) and not significant
East coast accommodation	Workers staying at local accommodation	n/a	Minor (beneficial) and not significant

Source: BiGGAR Economics analysis.

16.6.2 It is expected that there will be negligible effects associated with land use during operation, minor or negligible benefits in the economy, and minor or negligible effects on tourism and recreation. Table 16.19 provides a summary of the operational effects.

Table 16.19: Summary of Operational Effects

Asset/Economy/ Organisation/Providers	Predicted Effect	Mitigation	Effect
Productive conifer forests	Permanent on site woodland loss of 31.73ha.	Compensatory planting offsite matching the woodland loss area.	Negligible and not significant.
Kintyre economy	Annual operational impact of £0.96 million and 8 jobs.	applicant will make efforts to employ and train local people.	Minor (beneficial) and not significant.
Argyll and Bute economy	Annual operational impact of £1.78 million and 13 jobs.	applicant will make efforts to employ and train local people.	Negligible (beneficial) and not significant.
Scotland economy	Annual operational impact of £4.52 million and 37 jobs.	applicant will make efforts to employ and train local people.	Negligible (beneficial) and not significant.
Government	Estimated £0.73 million in non-domestic rates annually.	n/a	Negligible (beneficial) and not significant.
Festivals	No predicted effect.	n/a	Negligible and not significant.
Campbeltown tourism/recreation	No predicted effect.	n/a	Negligible and not significant.
West coast tourism/recreation	Some landscape impacts.	n/a	Minor and not significant.
Walking routes	Some landscape impacts.	n/a	Minor and not significant.
Campbeltown accommodation	No predicted effect.	n/a	Negligible and not significant.
West coast accommodation	Some landscape impacts.	n/a	Minor and not significant.
East coast accommodation	No predicted effect.	n/a	Negligible and not significant.

Source: BiGGAR Economics analysis.

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