13 Socio-economic, Recreation and Tourism

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13 Socio-economic, Recreation and Tourism

13.1 Executive Summary

13.1.1 This chapter considered the socio-economic, recreation and tourism impacts associated with the Proposed Development.

13.1.2 The assessment of the socio-economic impact during the construction and development phase and the operations and maintenance phase was conducted on the basis of the Proposed Development featuring six 4.8 MW turbines and having a total generating capacity of 28.8 MW[1].

13.1.3 The tourism assessment relied on a literature review of the relationship between wind farms and tourism activity in Scotland, as well as on a desk-based study of tourism assets and accommodation providers located in the proximity of the Proposed Development.

13.1.4 It was estimated that during the construction and development phase the Proposed Development could support £2.6 million Gross Value Added (GVA) and 39 jobs in Orkney, and £10.4 million GVA and 161 jobs in Scotland (including in Orkney). Operation and maintenance spend from the Proposed Development could have an annual impact of £0.3 million GVA and four jobs in Orkney and £0.5 million GVA and nine jobs in Scotland (including in Orkney). In addition, it would contribute to public finances around £0.5 million through the payment of non-domestic rates.

13.1.5 The Proposed Development would also contribute towards the achievement of the generating capacity mandated by Ofgem for the construction of an interconnector linking Orkney to the Scottish mainland, which could lead to annual benefits between £55 and £476 per person in Orkney. In addition to potentially generating considerable socio-economic benefits, the presence of the interconnector would enable the further development of the renewable sector in Orkney.

13.1.6 Communities living closest to the Proposed Development are expected to benefit from a location specific community benefit fund, of approximately £144,000 per annum. The impact from the payment of local community benefits was assessed as **minor** (beneficial).

13.1.7 The ownership structure contributes to the distinctiveness of the Proposed Development, since profits would stay in Orkney and be used for the benefit of the people of Orkney, increasing the level of local benefits significantly and also socialising the benefits amongst as many people as possible. A key aim of the Proposed Development is to generate profit to be used for the benefit of the people of Orkney. Benefits will be delivered via a community fund with funding distributed in the interests of Orkney and its inhabitants. The effect associated with the ownership structure was assessed as **minor** (beneficial) in Orkney.

13.1.8 The assessment of the economic impacts found a temporary **minor** (beneficial) impact from the construction and development phase in Orkney and a temporary **negligible** (beneficial) impact in Scotland. Operation and maintenance spend from the Proposed Development was assessed as having a **negligible** (beneficial) impact in the local and national economy.

13.1.9 In addition, the indirect benefits associated with the contribution to the delivery of the interconnector and the additional indirect benefits associated with the ownership structure mean that the total direct and indirect economic benefits of the Proposed Development are expected to be much greater than would generally be expected for a development of this scale. Whilst it is noted that these benefits are indirect, the implications of the interconnector for the future development of the renewable energy in Orkney would represent a material change for the Orkney economy and so were assessed as **moderate** (beneficial) and so significant.

13.1.10 The assessment of tourism assets and accommodation providers found that there were no significant adverse effects expected as a result of the Proposed Development.

[1] 28.8 MW is target capacity. Actual installed capacity may be greater or less dependent on turbine model selection but will not be greater than 50 MW.

13.2 Introduction

13.2.1 This chapter considers the socio-economic, recreation and tourism assessment of the Proposed Development. The assessment was conducted on the basis of the Proposed Development including six turbines with a generating capacity of 4.8 MW each. As a result, the assessment was conducted on an installation with a total capacity of 28.8 MW.

13.2.2 The rest of this chapter is structured as follows:

- Section 13.3 considers the relevant legislation, policy and guidelines setting out how to conduct the assessment;
- Section 13.4 summarises the responses to the scoping opinion and sets out where they were addressed;
- Section 13.5 outlines the assessment criteria followed when considering the socio-economic, tourism and recreation impact of the Proposed Development;
- Section 13.6 provides a baseline of socio-economic and tourism characteristics;
- Section 13.7 assesses the potential effects on socio-economic and tourism;
- Section 13.8 sets out enhancement and mitigation measures;
- Section 13.9 considers any residual effects;
- Section 13.10 carries out a cumulative assessment; and
- Section 13.11 summarises the main findings of the chapter.

13.3 Legislation, Policy and Guidelines

13.3.1 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 wind farm development. The proposed method has however been based on established best practice, including that used in UK Government and industry reports on the sector.

13.3.2 In particular this assessment draws on two studies by BiGGAR Economics on the UK onshore wind energy sector, a report published by RenewableUK and the then Department for Energy and Climate Change (DECC) in 2012 on the direct and wider economic benefits of the onshore wind sector to the UK economy (Department of Energy and Climate Change, RenewableUK, 2012) and a subsequent update to this report published by RenewableUK in 2015 (RenewableUK, 2015).

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

13.4 Consultation

13.4.1 The scoping response (refer to Appendix 4.2) sets out in detail what the socio-economics, tourism and recreation chapter shall cover: economic impacts on individuals, local businesses, local households, local groups and local communities shall be considered. The analysis shall also refer to the economic information related to the project, including potential number of jobs supported and economic activity generated throughout the project's different phases. The analysis of these impacts shall rely on information from similar projects in Orkney.

13.4.2 All the above aspects are covered in this chapter.

13.5 Assessment Methodology and Significance Criteria

Study Area

13.5.1 The study areas considered for the socio-economic assessment were Orkney and Scotland. The assessment of the Proposed Development's impact on tourism and recreation receptors was a radius of 15km from the Proposed Development's site, to which Skara Brae and Skaill House were added due their importance to the Orkney tourism economy.

Desk Study

13.5.2 The assessment was entirely conducted through desk study research and no site visit was necessary. However, the authors are familiar with the local economic conditions.

Assessment of Socio-Economic Benefits

13.5.3 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 wind farm 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 wind farms that have been developed in the UK in recent years.

13.5.4 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 wind farms across the UK, with the results being accepted as robust at several public inquiries.

13.5.5 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 existing wind farms around the UK. This report examined the size and location of contracts for their development, construction, and operation & maintenance phases; and
- assessment of the economies of the relevant study areas undertaken, based on analysis of local, regional and national statistics.

13.5.6 Alongside consideration of the direct GVA and employment supported by the Proposed Development, the assessment considered indirect and induced impacts. Indirect impacts capture the effect of direct spending on the supply chain of the businesses where this spending occurs. Induced impacts refer to the economic activity that is supported by the spending of employees where direct and indirect jobs have been supported.

Stages in Socio-Economic Analysis

13.5.7 To begin estimating the economic activity supported by the Proposed Development, it is first necessary to calculate the expenditure during the construction and development, and operation and 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 Orkney and Scotland.

13.5.8 There are the three sources of economic activity:

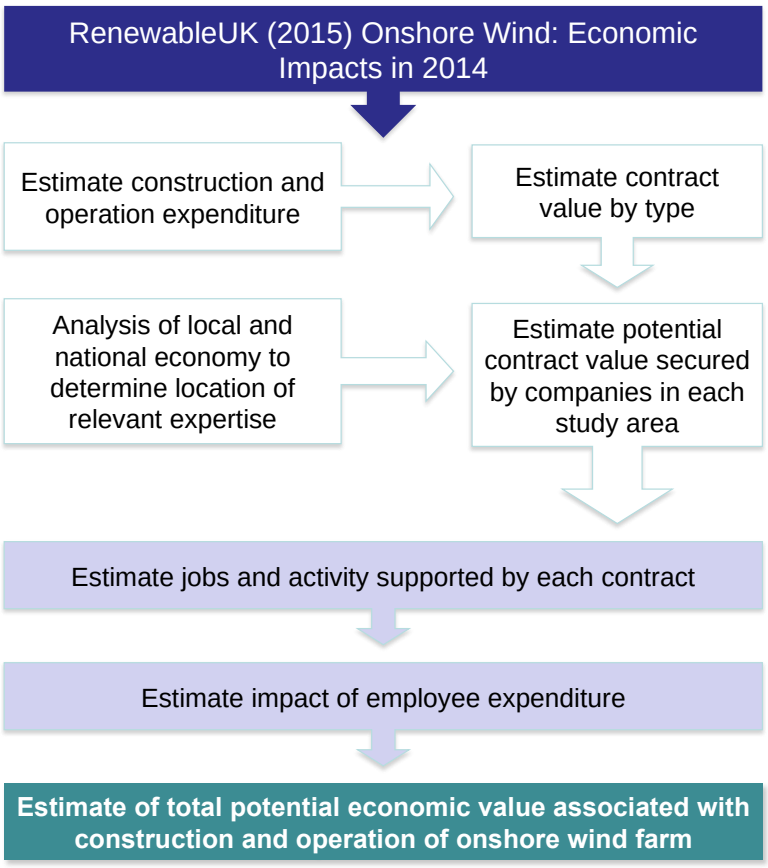
- component contracts and the jobs they support;
- wider spending in the supply chain (indirect effect); and
- spending of people employed in these contracts (induced effect).

13.5.9 There are four key stages of this model, which are illustrated in Chart 13.1:

- 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.

13.5.10 This methodology is considered best practice in the assessment of the socio-economic benefits linked to an onshore wind development.

Chart 13.1 - Approach to Direct and Indirect Economic Impact Assessment



13.5.11 The assessment also considers the socio-economic benefits arising from the contribution of the Proposed Development to the case for an interconnector linking Orkney and mainland Scotland. The ownership structure of the Proposed Development and the potential impacts on the people of Orkney are also considered.

Tourism and Recreation Assessment

13.5.12 The potential effects of wind farm 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).

13.5.13 Tourist attractions and accommodation are identified within 15 km of the Proposed Development, as well as a small number of regionally important tourism attractions located just outside of that area.

Effect Evaluation Methodology

13.5.14 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.

13.5.15 The significance of the effect depends on the magnitude of the impact and on the sensitivity of the receptor.

13.5.16 The impact magnitude is assessed using the economic model and professional judgement, considering socio-economic effects from the Proposed Development in Orkney 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 wind farm developments.

13.5.17 Effects on socio-economic, tourism and recreation assets are also assessed in terms of the sensitivity of tourists to change to the extent that it might lead to changes in tourism behaviour. The cultural heritage and landscape and visual assessments have been reviewed, but this assessment specifically considers potential effects on tourism. A cultural heritage or landscape and visual effect does not necessarily imply a tourism effect; that would only be the case if such effects were likely to lead to changes in tourism behaviour.

13.5.18 The significance of effect on each economic, tourism and recreational asset is determined on the basis of the criteria provided below, in Table 13.1. Major and moderate effects are considered significant in relation to Environmental Impact Assessment Regulations (2017).

Table 13.1 – Effect Significance Criteria

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

13.6 Baseline Conditions

Strategic Economic Context

Scotland's Economic Action Plan 2018-20

13.6.1 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.

13.6.2 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.

Scottish Energy Strategy

13.6.3 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.

13.6.4 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 %.

13.6.5 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.

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

Climate Change (Emissions Reduction Targets) (Scotland) Bill

13.6.7 In September 2019, the Scottish Parliament unanimously passed the Climate Change (Emissions Reduction Targets) (Scotland) Bill (Scottish Parliament, 2019), which sets a legally binding target of achieving "net-zero" carbon emissions by 2045. This is five years earlier than the previous target. Within this legislation, interim targets were set for the reduction of emissions by 75% of the baseline by 2030.

Proposed National Islands Plan

13.6.8 The Proposed National Islands Plan (Scottish Government, 2019) provides a framework to improve outcomes for island communities. The framework followed the Islands (Scotland) Act 2018. The

plan, which is set to last five years, covers 13 strategic objectives, including climate change and energy.

13.6.9 Reference is made to the need to encourage the development of renewable energy projects. These could lead to additional benefits through community funds and ownership models that see the participation of local communities, as in the case of the Proposed Development. The plan recognises the need for island economies to upgrade existing connections with the Scottish mainland.

Scottish Government Networks Vision Statement (2019)

13.6.10 'A Vision for Scotland's Electricity and Gas Networks' (Scottish Government, 2019) proposes an approach to energy systems that provides a transition to decarbonised energy system, considers a whole system approach and focuses on smarter local energy models.

13.6.11 In the context of energy transmission, the document focuses on the need for infrastructures that could support Scotland's ambitions in the development of the renewable energy sector, including new links to Scotland's Islands.

Orkney Sustainable Energy Strategy

13.6.12 As highlighted in the Orkney Sustainable Energy Strategy (Orkney Renewable Energy Forum, 2017) renewable energy currently plays an important part in the Orkney economy, with 60 MW of installed capacity and 300 jobs related to sustainable energy in 2017. Orkney also generated 120 % of its electricity demand from renewable sources, while also reducing its energy consumption through initiatives in areas such as transport and grid management.

13.6.13 For instance, there is a higher level of penetration of electric vehicles (EVs) in Orkney than elsewhere in Scotland with over 200 EVs registered in 2019 (BBC, 2019). There is also a commitment to increase the number of EVs to 1,000 by 2022 and to install additional public chargers, as highlighted in the 2018 - 2022 Electric Vehicle Strategy (Orkney Renewable Energy Forum, 2018).

13.6.14 Orkney has ambitious plans to increase their total installed capacity to 600 MW, and the number of jobs supported to 600 by 2030. It also aims to increase the renewable generation of electricity to 300 % of domestic demand, a significant increase in energy exports.

Orkney Council Plan 2018-2023

13.6.15 The Orkney Council Plan 2018-2023 (Orkney Islands Council, 2018) sets out the priorities for Orkney Islands Council. The plan considers the context within which Orkney Islands Council operates and will operate, which includes challenges, including budgetary pressures and the uncertainties related to Brexit, as well as opportunities such as the Islands Deal.

13.6.16 The result of consultations with local residents, the plan is built around five priority themes:

- connected communities – to give access to affordable well-integrated public services as well as to digital connectivity;
- caring communities – to provide care and support to those who need it and encourage a healthy population;
- thriving communities – to have access to a modern infrastructure that can support leisure, work and learning;
- enterprising communities – to have a carbon neutral economy supporting local businesses and promoting investment in Orkney; and
- quality of life – to have a good quality of life, with people choosing to stay in Orkney and returning there.

13.6.17 Since the Proposed Development will be publicly owned, the benefits from the Proposed Development's operations will be reinvested in the provision of local public services and local

ambitions as set out in the Orkney Council Plan 2018-2023. This will be in line with the objective that renewable energy projects benefit local communities.

13.6.18 The Proposed Development will also contribute to fill the need for generating capacity to ensure the construction of the interconnector between Orkney and the Scottish mainland. This will have the potential to increase the level of investment in renewable energy in Orkney and lead to future benefits for Orkney and its inhabitants.

13.6.19 The Proposed Development would contribute towards the achievement of a local carbon neutral economy, as set out in the plan.

Orkney Islands Council Revenue Budget 2019-20

13.6.20 Over the last decade Orkney Islands Council has confronted a series of budgetary pressures. This led the Council to save a total of £13.15 million since 2011/2012, including £1.69 million planned for 2018/19 (Orkney Islands Council, 2019).

13.6.21 In addition to savings, in its budget Orkney Islands Council has drawn on reserves in order to balance the books, amounting to £44.8 million over the last ten years. Reliance on reserves to fill gaps in the budget would be unsustainable in the long term. As a result, Orkney Islands Council has been investigating how it can take an innovative approach to reducing costs and generating new revenue.

13.6.22 The Proposed Development is a key element of that approach, given its potential to generate substantial income to help relieve pressure on local service provision

Ofgem - Conditional Decision on Orkney Final Needs Case

13.6.23 In September 2019 Ofgem (Ofgem, 2019) published its final decision on the Needs Case for a new grid connection for Orkney in which it agreed with SSENs proposals to build a 220MW connection - provided that 135MW of new generation can demonstrate that it has been awarded a Contract for Difference (CfD) or is 'likely to be developed' by December 2021.

13.6.24 'Likely to be developed' is defined by Ofgem as being projects which have been granted planning permission, have signed a relevant grid connection agreement and are financially viable.

13.6.25 At present 36MW of new wind generation is consented in Orkney and could contribute to this and whilst there are other private projects under development in Orkney it is apparent that without the Proposed Development, the 135MW threshold will not be reached by the deadline.

Baseline Economic Context

13.6.26 As shown in Table 13.2, in 2018 the population living in Orkney was 22,190 (National Records of Scotland, 2019). Overall, the population in Orkney was relatively older than that in Scotland. This was reflected in Orkney having a larger share of its population (24 %) aged 65 and over and a relatively smaller (60 %) working age population – population between 16 and 64 years old - compared to Scottish averages of 19 % and 64 % respectively.

Table 13.2 - Population and Demography, 2018

	Orkney	Scotland
Total	22,190	5,438,100
0-15	16%	17%
16-64	60%	64%
65 and over	24%	19%

Source: National Records of Scotland (2019), Mid-2018 Population Estimates

13.6.27 Existing differences in the population structure of Orkney and Scotland are expected to last. By 2041, the population of Orkney is expected to fall slightly to 21,372, whereas the population of Scotland will increase to almost 5.7 million (National Records of Scotland, 2017). While both Orkney and Scotland will have relatively older populations, the trend towards an ageing population is expected to be more marked in Orkney, with 32.8 % of the population being over 65 and 14.3 % being under 16 by 2041, as shown in Table 13.3.

Table 13.3 - Population Change (2016-2041)

	Orkney		**Scotland**	
	2016	2041	2016	2041
Total	21,850	21,372	5,404,700	5,693,201
0-15	16.1%	14.3%	16.9%	15.8%
16-64	61.2%	52.9%	64.6%	58.9%
65 and over	22.7%	32.8%	18.5%	25.3%

Source: National Records of Scotland (2017), Sub-National Population Projections 2016-2041

13.6.28 As shown in Table 13.4, in 2018 the rate of economic activity in Orkney was 87.5 %, around 10 percentage points higher than in Scotland (Office for National Statistics, 2019). Data on the unemployment rate present a similar pattern, with Orkney having a lower unemployment rate (1.8 %) than Scotland (4.3 %) (Office for National Statistics, 2019). Median annual gross pay was also slightly higher in Orkney (£30,650) than in Scotland (£30,000). However, people living in Orkney are likely to face higher living costs than communities elsewhere in Scotland. A report by Highlands and Islands Enterprise (Highland and Islands Enterprise, 2013) found that residents of remote Scottish islands such as Orkney can often have living costs 20 – 40 % higher than residents in urban Britain.

Table 13.4 - Economic Indicators, 2018

	Orkney	**Scotland**
Economic Activity Rate (16-64)	87.5%	77.4%
Unemployment Rate (all economically active)	1.8%	4.3%
Median Annual Gross Pay (£)	30,650	30,000

*Source: ONS (2019) Annual Survey of Hours and Earnings- resident analysis; *ONS (2019), Annual Population Survey.*

13.6.29 Around 18.0 % of those in employment in Orkney work within the agriculture, forestry and fishing sector, as opposed to 3.2 % in Scotland as a whole, with fishing accounting for around 3.0 % of total employment in Orkney (Office for National Statistics, 2019). Orkney has a relatively lower share of people employed in manufacturing, professional, scientific and technical activities and in administrative and support services activities. The share of people employed in accommodation and food services (7.7 %), sectors related to tourism activity, suggests that tourism has a similar importance to the economy of Orkney as it has on average in Scotland.

Table 13.5 - Industrial Structure 2018

	Orkney	Scotland
Agriculture, forestry and fishing	18.0%	3.2%
Mining and quarrying	0.7%	1.1%
Manufacturing	3.2%	6.9%
Electricity, gas, steam, air conditioning	0.5%	0.7%
Water supply, sewerage, etc.	0.4%	0.8%
Construction	6.8%	5.5%
Wholesale and retail trade	11.4%	13.6%
Transportation and storage	7.2%	4.2%
Accommodation and food services	7.6%	7.9%
Information and communication	1.3%	3.1%
Financial and insurance activities	0.5%	3.4%
Real estate activities	0.6%	1.5%
Professional, scientific and technical activities	3.8%	7.0%
Administrative and support service activities	3.8%	7.9%
Public administration and defence	8.5%	6.0%
Education	6.8%	7.4%
Human health and social work activities	14.2%	15.1%
Arts, entertainment and recreation	3.6%	2.7%
Other service activities	1.3%	2.1%
Total Number of People Employed	13,000	2,611,500

Source: ONS (2019), Business Register and Employment Survey 2018.

Fuel Poverty

13.6.30 Fuel poverty is defined as spending over 10 % of household income on fuel, and extreme fuel poverty is defined as spending over 20 % of income.

13.6.31 The main causes of fuel poverty are low incomes, high fuel costs, and poor energy efficiency. Whereas median annual gross pay in Orkney is marginally higher than in Scotland as a whole, remote communities face different expenditure profiles than urban communities as data from the ONS' 'Family spending in the UK' data by Output Area Classification (Office for National Statistics, 2019). Communities living in rural and island settings spend more on electricity, due, for instance, to higher user system charges and more in other areas such as transportation. These problems can

compound, as money spent on fuel reduces the amount that low income households can invest in energy saving measures, with the housing stock being relatively older. Fuel poverty can also be linked to serious health complications, and it is estimated that every £1 invested in property improvements can reduce health spending by £0.42 (THAW Orkney, 2017).

13.6.32 Despite significant income from the energy sector, Orkney has the highest fuel poverty rate in Scotland, with data from the Scottish House Condition Survey (SHCS) (Scottish Government, 2019) from 2015-17 finding that:

- 57 % of the 10,000 households in Orkney are in fuel poverty (about 5,700), rising to 79 % among pension-aged households;
- 23 % of all households are in extreme fuel poverty, rising to 38 % among all pension-aged households;
- 55 % of Orkney dwellings failed to meet the Scottish Housing Quality Standard (SHQS); and
- 62 % of dwellings are in a state of disrepair, with 32 % in urgent disrepair and 13 % in extensive disrepair.

13.6.33 While there have been improvements from the 2014-2016 findings on most of these dimensions, Orkney's performance lags behind Scotland's on most of these metrics (the exception is the share of dwellings in disrepair).

13.6.34 In 2017, THAW Orkney, a charity established in 2014 to assist fuel poor households in Orkney, prepared a report outlining how fuel poverty might be addressed by deploying community benefit funds from renewable energy projects.

13.6.35 THAW's work confirms that fuel poverty is a serious issue, which often requires significant investment. Of its 404 clients, 83 % are in fuel poverty, with 45 % in extreme fuel poverty, and 22 % spending over 40 % of their income on fuel, as of 2017 (THAW Orkney, 2017).

13.6.36 By 2017, THAW had undertaken 179 installations, with an estimated cost of £603,000, with about 42 % of funding coming from grants. Given that there are an estimated 5,700 fuel poor households in Orkney, and that the Orkney Islands Council aims to reduce the proportion of households in fuel poverty to below 20 % by 2030, (OREF, 2017) the potential costs could be quite high.

Summary Socio-Economic Baseline

13.6.37 The population in Orkney is relatively older than in the rest of Scotland and is set to decline in the future, as well as ageing relatively more than in the rest of Scotland. While labour market outcomes in Orkney compare positively with Scotland as a whole, living costs are higher than elsewhere in Scotland, due to higher energy and fuel costs and transport costs. This contributes to Orkney having the highest fuel poverty rate in Scotland.

Strategic Tourism Context

Tourism Scotland 2020

13.6.38 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.

13.6.39 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.

Destination Orkney – Orkney Tourism Strategy Summary

13.6.40 The Orkney Tourism Strategy (Orkney Islands Council, 2017) sets out the ambitions for the tourism sector up until 2025. It aims to increase tourism spending in Orkney to £40 million by 2025.

13.6.41 The strategy builds on four areas that will affect the marketing efforts to present Orkney as offering a unique visitor experience. These include:

- culture and heritage;
- nature and activities;
- marine tourism; and
- events and festivals.

13.6.42 Alongside areas of marketing focus, the strategy points to the improvement of the overall visitor experience (visitor management) through:

- visitor information;
- transport;
- accommodation;
- food and drink; and
- digital tourism.

Sustainable Tourism Sector

13.6.43 Sustainable Tourism is one of the six growth sectors identified in the Scottish Government's Economic Strategy and for which detailed data are collected. In 2017, there were 1,250 people employed in sustainable tourism in Orkney, or 9.6 % of total employment. The value added by this sector to the Orkney economy was £21.5 million GVA (Scottish Government, 2019).

Table 13.6 - Sustainable Tourism Employment and Gross Value Added, 2017

	Orkney	Scotland
Employment (people)	1,250	206,000
GVA (£m)	21.5	4,127.1

Source: Scottish Government (2018), Scotland's Economic strategy – Growth Sector Statistics

Visitors

13.6.44 In 2018, Orkney Islands Council and VisitScotland released the Orkney Islands Visitor Survey 2017, which found that in 2017, there were around 174,000 visitors to the Orkney Islands, with a total spend of £50 million. The number of visitors increased by 22 % in comparison to 2013, when there were 143,000 visitors to Orkney and by 44 % since 2005.

Table 13.7 Visitors to Orkney (not including cruise passengers), 2013-2017

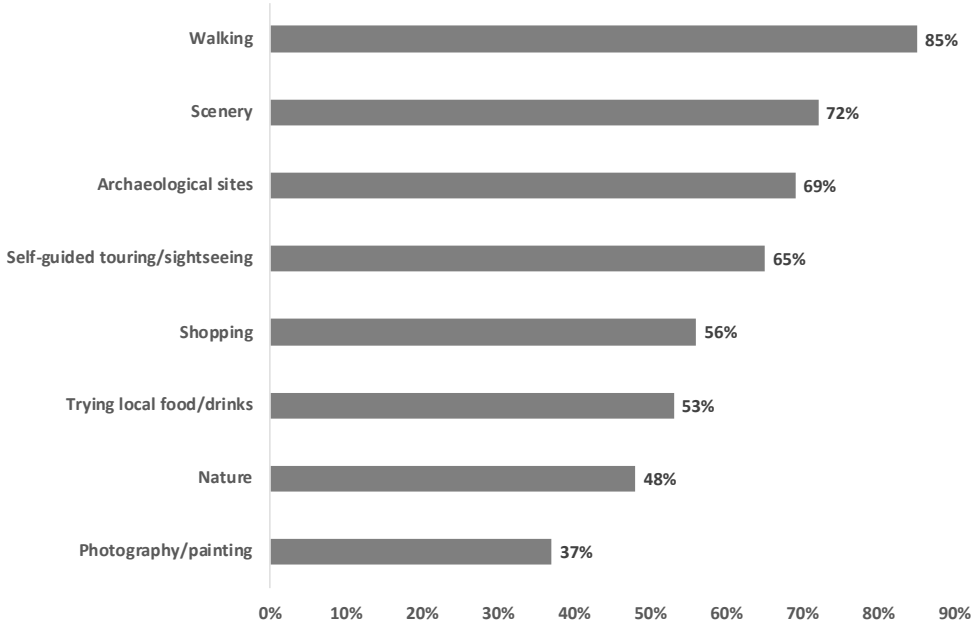
	2005	2009	2013	2017
Visitors to Orkney	121,000	142,000	143,000	174,000

13.6.45 The majority of visitors were from Scotland (43 %) or the elsewhere in the UK (29 %), with remainder from Europe (14 %), North America (8 %) or other overseas (6 %) (Orkney Islands Council/VisitScotland, 2018).

13.6.46 This does not include cruise passengers, of which there were 113,100 visitors in 2017 (Orkney Islands Council, 2017), increasing to 160,000 in 2018 with Kirkwall named Top Cruise Destination for Western Europe and the United Kingdom by Cruise Critic (Orkney Islands Council, 2019).

13.6.47 The most frequent activities of visitors to Orkney is walking (85 %), followed by enjoying the scenery (72 %), and archaeological sites (69 %).

Chart 13.2 - Top Activities in Orkney – Leisure Visitors



Source: Orkney Islands Council and VisitScotland (2018), Orkney Islands Visitor Survey 2017

Visitor Attractions

13.6.48 There are a number of visitor attractions in Orkney within 15 km of the Proposed Development, which are discussed in Table 13.8.

Table 13.8 - Visitor Attractions

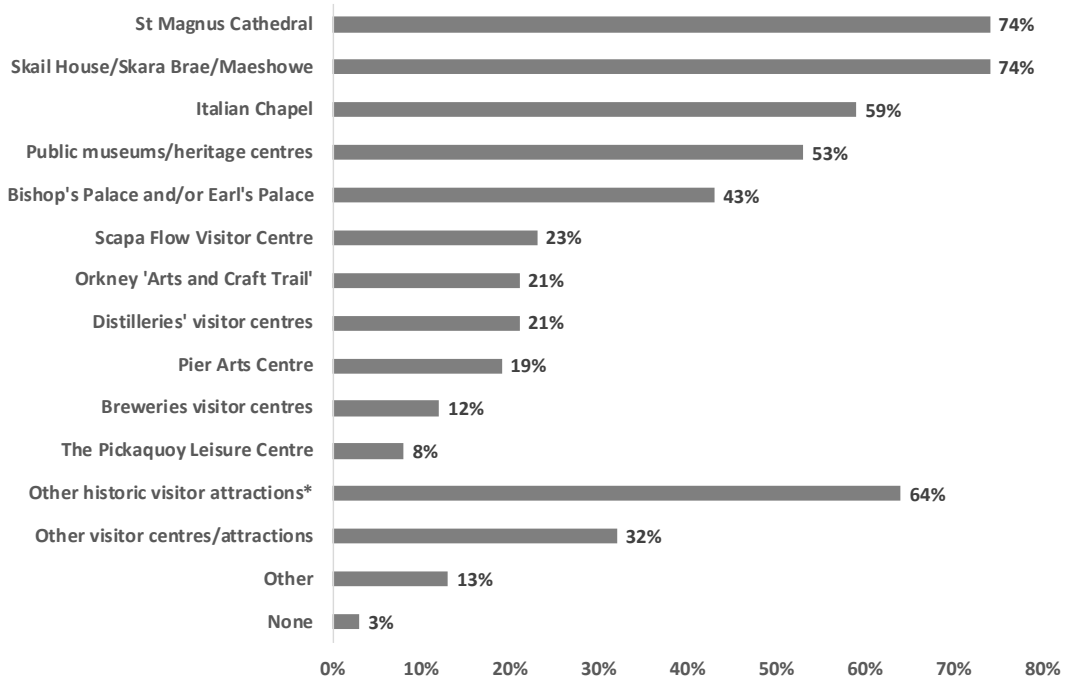
Visitor Attraction	Distance to site (km)	Description
Wideford Hill Cairn	0-1 km	A cairn with visible exterior stonework a few miles from Kirkwall
Orkney Golf Club	2-3 km	An 18 hole golf course on the outskirts of Kirkwall, with views towards the North Isles and the town itself

Visitor Attraction	Distance to site (km)	Description
St Magnus Cathedral	3-4 km	A cathedral in Kirkwall, which was built over a period of 300 years beginning in the 12th Century
Bishop's and Earl's Palaces	3-4 km	Two cathedrals in Kirkwall that were built in the 13th century and 17th century respectively
Orkney Museum	3-4 km	A museum in Kirkwall, which tells the story of Orkney from the Stone Age to the present day
Orkney Wireless Museum	3-4 km	A museum in Kirkwall that displays wireless electronic devices, such as radios and radar equipment from the Second World War
Kirkjuvagr Distillery	3-4 km	A gin distillery in Kirkwall which offers tours
Pickaquoy Centre	3-4 km	Sport, arts, conferences and social facility
Cuween Hill Chambered Cairn	4-5 km	A chambered cairn over 5,000 years old
Highland Park Whisky Distillery	5 km	A whisky distillery on the outskirts of Kirkwall which offers tours
Scapa Distillery	5 km	A whisky distillery on Scapa Beach which offers tours
Standing Stones of Stenness	10 km	A small circle of standing stones which is over 5,000 years old, which is part of Orkney's UNESCO World Heritage Site
Maeshowe Chambered Cairn	10 km	A chambered cairn near Stenness, which has a visitor centre, which is part of Orkney's UNESCO World Heritage Site
Italian Chapel	15 km	A chapel built by Italian prisoners of war (POWs) during the Second World War. Had 135,000 visitors in 2015
Ring of Brodgar	11 km	A stone ring dating back to 2500-2000BC which is part of Orkney's UNESCO World Heritage Site
Skara Brae	17 km	A well-preserved 5,000 year old settlement on the western half of Mainland, which is part of Orkney's UNESCO World Heritage Site
Skaill House	17 km	A 17th century mansion, with a collection of items relating to Skara Brae, which it borders, and other items of interest

Source: BiGGAR Economics Analysis

13.6.49 The visitor attractions most frequently visited by leisure visitors were St Magnus Cathedral (74 %), and Skaill House/Skara Brae/Meashowe (74 %), though this does not include the Ring of Brodgar, which is considered under 'Other historic visitor attractions' (64 %). The Italian Chapel (59 %), public museums/heritage centres (53 %) and Bishop's Palace/Earl's Palace (43 %) were also popular attractions (Chart 13.3Chart 13.3).

Chart 13.3 - Visitor Attractions in Orkney Visited – Leisure Visitors



*Source: Orkney Islands Council and VisitScotland (2018), Orkney Islands Visitor Survey 2017. *The category 'Other historic visitor attractions' includes the Ring of Brodgar*

Recreational Trails and Core Paths

13.6.50 A number of recreational trails were identified using the website Walkhighlands.com, which has information about walking routes throughout Scotland. These are discussed in

Table 13.9 - Recreational Trails

Name of Walk	Description	Distance to site (km)
Kirkwall Explorer and Peedie Sea	A 3.25 km walk around the heart of Kirkwall and the Peedie Sea, a small harbour	3
Wideford Hill and Chambered Cairn	A 9.75 km walk from Kirkwall to Wideford Hill and the Chambered Cairn on its far side, and back to Kirkwall	1
Rerwick Head	A short 1.25 km coastal walk around the northernmost point of Tankerness to the east of Kirkwall	11
Wideford and Inganess	A 5.5 km circular walk from Inganess Bay to the south-east of Kirkwall and along the Wideford Burn	5

Scapa Flow and Loch of Ayre	A 3.25 km circular walk along the shores of Scapa Flow and the Loch of Ayre, near St Mary's to the south-east of Kirkwall	13
Orphir Bay, near Houton	A 3.25 km walk around Orphir Bay to the south-west of the Proposed Development	10
Ring of Brodgar to Maeshowe	A 4.5 km circular walk connecting the Ring od Brodgar, the Stones of Stenness and Maeshowe	10
Binscarth Wood	A 4 km linear walk from Finstown to the west through Binscarth wood and Moorland, and by Loch of Wasdale	5

13.6.51 .

13.6.52 Within 15km from the Proposed Development, there are also a number of core paths. The analysis below has brought forward for assessment only recreational trails as they would be the ones most likely used by visitors to Orkney. Some of the core paths, however, are part of the recreational trails listed above.

13.6.53 The closest core path from the Proposed Development is core path K4- Muddisdale and Wideford Hill. This path is considered in the assessment, since it is included as part of the recreational path of Wideford Hill and Chambered Cairn.

13.6.54 St Magnus Way is a long-distance pilgrimage route that follows the story of St Magnus across Orkney. St Magnus Way gets closest to the Proposed Development on its Orphir to Kirkwall route, where it passes at around 3-4 km from the Proposed Development.

Table 13.9 - Recreational Trails

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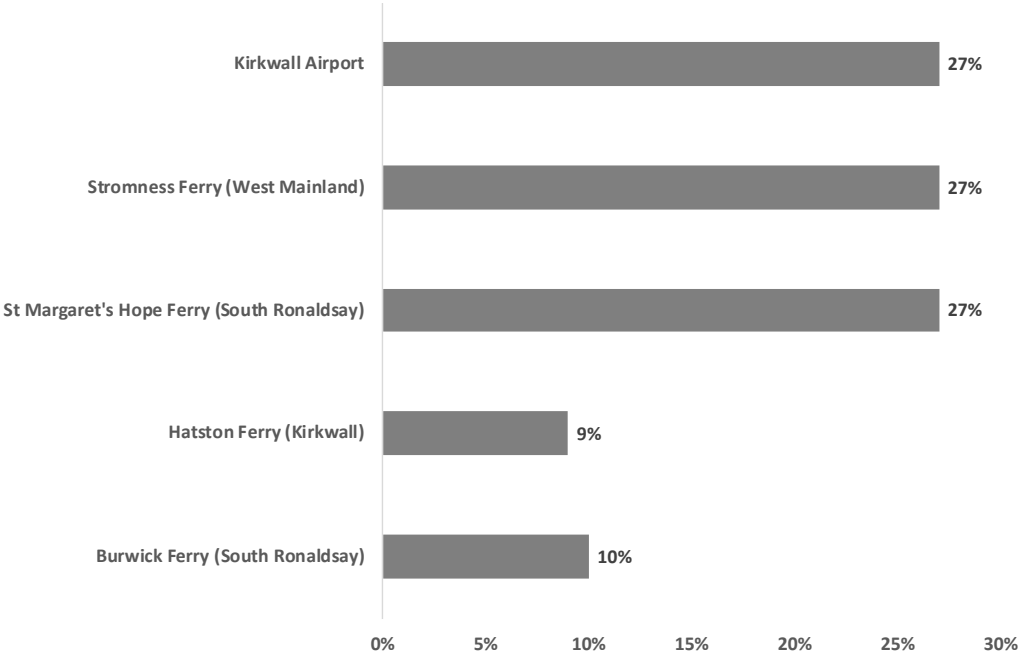
Source: https://www.walkhighlands.co.uk/orkney/mainland.shtml

Tourism Routes

13.6.55 The majority of visitors to Orkney arrive via either Kirkwall Airport (27 %), the Stromness Ferry (27 %) or the St Margaret's Hope Ferry (27 %). Around 9 % arrive via the Hatston Ferry in Kirkwall, although it should be noted that this excludes cruise ship visitors.

Chart 13.4 - Visitor Arrivals by Point of Entry



Source: Orkney Islands Council and VisitScotland (2018), Orkney Islands Visitor Survey 2017

13.6.56 In addition, approximately 113,000 cruise ship passengers arrived in 2017, increasing to 160,000 in 2018, with the majority arriving at Hatston Ferry in Kirkwall. They are predominantly attracted to the area by the visitor attractions such as the UNESCO World Heritage Site and St Magnus Cathedral, and many also enjoy the scenery and wildlife.

13.6.57 One of the major tourist routes on Mainland is the route from Kirkwall to Skara Brae, which goes along the A965 from Kirkwall to Stenness adjacent to the Proposed Development and then follows the B9055 from Stenness to Skara Brae.

Accommodation Providers

13.6.58 The baseline considered accommodation providers that could be considered to be in proximity of the Proposed Development. This was defined as including Kirkwall and the East Mainland, and to the west shore of the Bay of Ireland and the Loch of Harray. This area falls within a radius of 15 km from the Proposed Development. The analysis of accommodation providers operating within 15 km of the Proposed Development was carried out, relying on information available on Visit Scotland and Google Maps. As can be seen in Table 13.10, it found that there are:

- 13 hotels within 15km from the Proposed Development with ten of these in Kirkwall, two around the Harray Loch and one at Stenness;
- six hostel or caravan sites, with four in Kirkwall, one on the west coast of the Bay of Firth and one in the north West Mainland at Evie; and
- 117 bed and breakfasts and guest houses, with 40 in Kirkwall, 12 on the Bay of Weyland north-west of Kirkwall, and 15 around Loch of Harray. Other clusters of accommodation include three providers at Inganess Bay, six providers at St Mary's, three providers at West Scapa Bay, eight providers at Kirbister/Orphir/Houton, nine providers on the west coast of the Bay of Ireland and Stenness, eight providers in north-west Mainland, seven providers to the west of the Bay of Firth, and six providers at Finstown.

13.6.59 The areas included in the table below are defined in terms of the closest settlement or geographic element to them.

Table 13.10 - Local Accommodation Providers (within 15km of Proposed Development)

Location	Hotels	Caravan sites/ Youth Hostels	Bed & Breakfasts/ Guest Houses	Distance to site (km)
Kirkwall	10	4	40	2-5 km
Bay of Weyland	0	0	12	3-4 km
Inganess Bay	0	0	3	4-9 km
St Mary's	0	0	6	9-14 km
West Scapa Bay	0	0	3	3-6 km
Kirbister/Orphir/Houton	0	0	8	7-13 km
Bay of Ireland and Stenness	1	0	9	10-15 km
Loch of Harray	2	0	15	7-13 km
North-west Mainland	0	1	8	9-14 km
West Bay of Firth	0	1	7	3-6 km
Finstown	0	0	6	3-5 km
Total	**13**	**6**	**117**	**-**

Summary of Tourism and Recreation Baseline

13.6.60 The analysis suggests that tourism is an important sector in Orkney, with increasing visitor numbers since 2005. The main reasons for visiting Orkney as identified by tourists were walking, the scenery and archaeological heritage.

13.7 Potential Effects

13.7.1 This section considers the potential effects of the Proposed Development on socio-economics, tourism and recreation. Effects will be assessed with reference to the assets' sensitivity, as identified in the baseline.

Economic Effects

Construction

13.7.2 This application is for six turbines with a capacity of around 4.8 MW each, giving a combined generating capacity of approximately 28.8 MW. Using research undertaken by BiGGAR Economics on behalf of RenewableUK in 2015 (RenewableUK, 2015), the average expenditure on the construction and development of wind farms can be estimated based on the average spend per MW, the average spending per turbine, or a combination of the two, as appropriate. On the basis of this methodology the total construction and development cost for the Proposed Development was estimated to be £35.6 million.

13.7.3 This expenditure was split into four main categories of contract:

- development and planning;
- balance of plant;

- turbines; and
- grid connection.

13.7.4 The proportion of construction and development spending that is spent on each of the main categories was also informed by BiGGAR Economics' research into wind farms that are currently in operation in the UK. This found that the largest proportion of capital expenditure (Capex) was on turbine related contracts (68.7 %), followed by balance of plant (20.9 %), grid connection (5.3 %) and development and planning (5.1 %).

13.7.5 When figures in this section refer to Scotland, they are to be intended as being inclusive of the impact taking place in Orkney.

Table 13.11 – Development and Construction Expenditure by Contract Type

	% Capex	Value for the Proposed Development (£m)
Development and Planning	5.1 %	1.8
Turbines	68.7 %	24.5
Balance of Plant	20.9 %	7.4
Grid Connection	5.3 %	1.9
Total	100%	35.6*

Source: BiGGAR Economics Analysis of RenewableUK (2015), Onshore Wind: Economic Impacts 2014. *Totals may not add up due to rounding.

13.7.6 The economic impact of the construction and development phase was estimated for Orkney 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 undertaking such analysis for other wind energy projects in Orkney.

13.7.7 Orkney is expected to benefit from contracts relatively more, than would be the case in other local authority areas, given that its geographical position makes it less likely that spending will spill over to neighbouring local authority areas. To estimate the expenditure for each contract in each of the study area these percentages were applied to the estimated size of each component contract.

13.7.8 On this basis, it was estimated that Orkney could secure contracts worth up to £3.9 million, equivalent to 11 % of the total capital expenditure. The largest opportunity for Orkney would be with the balance of plant contracts as companies in the area could secure 25 % of contracts, worth up to £1.8 million.

13.7.9 Scotland (including Orkney) was estimated to be able to receive contracts worth £12.7 million, equivalent to 36 % of the total capital expenditure. The largest opportunities would be the contracts related to the balance of plant, worth around £5.0 million and elements of the turbine contract (the supply of towers) worth £4.7 million.

Table 13.12 - Development and Construction Expenditure by Study Area and Contract Type

	Orkney		Scotland (including Orkney)	
	%	£m	%	£m
Development and Planning	13 %	0.2	63 %	1.1

	Orkney		Scotland (including Orkney)	
	%	£m	%	£m
Turbine	5 %	1.1	19 %	4.7
Balance of Plant	25 %	1.8	68 %	5.0
Grid Connection	38 %	0.7	100 %	1.9
Total	11 %	3.9	36 %	12.7

13.7.10 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.

13.7.11 On this basis, it was estimated that the development and construction contracts would generate £1.9 million GVA in Orkney and £6.1 million GVA in Scotland.

Table 13-13 - GVA by Study Area and Contract Type

	Orkney (£ m)	Scotland (£ m) (including Orkney)
Development and Planning	0.2	0.8
Turbine	0.5	2.1
Balance of Plant	0.9	2.4
Grid Connection	0.3	0.8
Total	1.9	6.1

13.7.12 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.

13.7.13 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.

13.7.14 In this way, the construction and development impacts were estimated to support 29 job years in Orkney, with 14 job years being related to the balance of plant contracts. In Scotland, 96 job years are estimated to be supported, of which 38 job years are related to the turbine contracts.

Table 13-14 – Development and Construction Employment in Job Years

	Orkney	Scotland (including Orkney)
Development and Planning	2	11
Turbine	9	38
Balance of Plant	14	36
Grid Connection	4	11
Total	29	96

**Totals may not add up due to rounding*

13.7.15 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.

13.7.16 In order to adjust these multipliers, which consider the national economy, for the economy of Orkney 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. The indirect impact multiplier is consistent with the impact from the supply chain of EMEC in 2014 (EMEC, 2019), whereas the share of induced impacts taking place locally, was based on an analysis of data from the Office for National Statistics' 'Family Expenditure Survey in the UK – April 2017 to March 2018' (ONS, 2019).

13.7.17 In this way it was estimated the indirect impact in Orkney would be £0.3 million GVA and four job years in Orkney and £2.4 million GVA and 39 job years in Scotland.

Table 13-15 - Development and Construction Indirect Impact

	Orkney	Scotland (including Orkney)
Indirect Impact (£m)	0.3	2.4
Indirect Impact (job years)	4	39

13.7.18 It was estimated that the induced impact during the development and construction phase would be £0.4 million GVA and five job years in Orkney, and £1.9 million GVA and 25 job years in Scotland.

Table 13-16 - Development and Construction Induced Impact

	Orkney	Scotland (including Orkney)
Induced Impact (£m)	0.4	1.9
Induced Impact (job years)	5	25

13.7.19 The total impact during the construction and development phase is the sum of the direct impacts, the indirect impacts and the induced impacts. The total combined impact was estimated to be £2.6 million GVA and 39 job years in Orkney, and £10.4 million GVA and 161 job years in Scotland.

Table 13-17 - Economic Impact During Development and Construction

	Orkney	Scotland (including Orkney)
Economic Impact (£m)	2.6	10.4
Employment impact (job years)	39	161

13.7.20 It is expected that during the construction and development phase, the effect of the Proposed Development would be **minor (**beneficial) in Orkney and **negligible** (beneficial) in Scotland.

Operation

13.7.21 The operation and maintenance impact of the Proposed Development was estimated as the impact that would persist throughout the lifespan of the Proposed Development.

13.7.22 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 £0.8 million (which excludes community benefit payments and non-domestic rates).

13.7.23 In order to estimate the economic impact of the operation and maintenance expenditure in Orkney and Scotland, 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, the analysis of the industries present in each of the study areas, as well as previous experience BiGGAR Economics had on onshore renewable wind farms in Orkney.

13.7.24 On this basis it was estimated that Orkney could secure 50 % of operation and maintenance contracts, worth £0.4 million, and that Scotland could secure 86 % of contracts, worth £0.7 million.

Table 13-18 - Annual Operation and Maintenance Expenditure by Study Area

	Orkney		Scotland (including Orkney)	
	%	£m	%	£m
Operation and Maintenance	50 %	0.4	87 %	0.7

13.7.25 As with the construction phase, the contract values awarded in each of the study areas represent an increase in turnover in those areas. The economic impact of the increase in turnover on GVA and employment was estimated in the same way as the construction expenditure, using the Annual Business Survey (Office for National Statistics, 2018).

13.7.26 In this way, it was estimated that turnover generated by the operation and maintenance of the Proposed Development could support £0.2 million GVA and three jobs in Orkney, and £0.3 million GVA and five jobs in Scotland.

Table 13-19 - Annual Operation and Maintenance Direct Impact

	Orkney	Scotland (including Orkney)
GVA (£m)	0.2	0.3
Employment (job)	3	5

13.7.27 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.

13.7.28 Adding together the direct, indirect and induced impacts, it was estimated that the total annual economic impact would be £0.3 million GVA and four jobs in Orkney, and £0.5 million and nine jobs in Scotland.

Table 13-20 - Annual Economic impact During Operation and Maintenance

	Orkney	Scotland (including Orkney)
Economic Impact (£m)	0.3	0.5
Employment (jobs)	4	9

13.7.29 It is expected that the effect on the economy of Orkney of direct and indirect spend related to operational and maintenance expenditure 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).

Cumulative Benefits from an Interconnector

13.7.30 In addition to the benefits linked to its construction, development and operations, the Proposed Development will contribute towards reaching the threshold set by Ofgem for investment in an interconnector between Orkney and the Scottish mainland to take place.

13.7.31 At present, Orkney is not served by a transmission grid connection and the distribution network is at capacity such that there has been a moratorium on new grid connections since 2012 and many operational wind energy projects are experiencing substantial constraint through an Active Network Management system. The lack of grid capacity has driven some innovation locally but the overall impact has been to heavily impede development of the energy industry.

13.7.32 The investment in an interconnector can take place only if 135MW of new generation have been awarded a Contract for Difference (CfD) or are likely to be developed by December 2021. Without public intervention it may be difficult to attract investment in new onshore wind developments to reach the threshold, given the risks involved with not having the new interconnector.

13.7.33 The presence of the interconnector could lead to considerable economic benefits. A 2019 study (GHD, 2019) found that a 220 kV connection could enable generation between £46 and £417 million, which could lead to annual benefits between £55 and £476 per person in Orkney. The benefits included both direct economic and indirect community benefits from both private sector and community developments.

13.7.34 These benefits cannot be directly attributed to the construction of the Proposed Development. However, the existence of sufficient capacity in Orkney is a pre-condition for the interconnector to be built and for these wider benefits to be realised and is therefore an indirect effect of the Proposed Development.

13.7.35 There are wider economic benefits from securing the cable including from development, construction and operation of all relevant wind farms and enabling infrastructure, as well as the potential for knock on benefits to other parts of the local energy industry, potentially including marine renewable energy technologies.

13.7.36 Whilst it is noted that these benefits are indirect and cannot be solely attributed to the Proposed Development as they will be delivered in combination with other developments, the implications for the future development of the renewable energy in Orkney represent a material change for the Orkney economy and so were assessed as **moderate** (beneficial) for Orkney (and so significant in EIA terms) and **negligible** (beneficial) for Scotland.

Wider Economic Benefits

13.7.37 The Proposed Development is expected to have wider economic benefits through:

- a location specific community benefit fund;

- profits from ownership; and
- non-domestic rates.

13.7.38 Each source of broader economic impact is considered and quantified in turn.

Location Specific Community Benefit Fund

13.7.39 The Proposed Development is expected to support communities in Orkney through a location specific community benefit fund, as set out in 'Orkney's Community Wind Farm Project, Community Benefit Guiding Principles' (Orkney Islands Council, 2019).

13.7.40 The following principles have been identified as guiding decisions over the scale and beneficiaries of the location specific community benefit fund:

- the beneficiaries of the fund will be identified as comprising those communities located closest to the Proposed Development, since they will be impacted most by its construction and operation;
- in determining the level and geographic extent of any location-specific community benefit payment, the principles outlined by the Scottish Government in Community benefits from onshore renewable energy developments: Guidance on good practice principles for communities, businesses, local authorities and others (2019) will be used;
- receipt of a location-specific community benefit payment by any area will not impact on the likelihood of an area receiving further community benefits from ownership of the Proposed Development.

13.7.41 The Scottish Government's guidance on community benefits (Scottish Government, 2019) sets out four types of ownership structure for allocation of location specific community benefit funds:

- funding being delivered to existing local organisations such as community councils or development trusts;
- funding being distributed to a specifically-created organisation tasked with managing and allocating funds;
- the wind farm owner paying for the services of a third-party organisation in charge with the governance of the funding; and
- the wind farm owner being directly in charge of the community benefits.

13.7.42 The choice of the community benefit structure will follow a further round of consultations with local communities and build on the general consensus reached.

13.7.43 The Scottish Government (Scottish Government, 2019) recommends that for similar projects the revenue going to the location specific community benefit fund shall be £5,000/MW each year.

13.7.44 On the basis of a capacity of 28.8 MW, it was estimated that local communities could benefit from up to £144,000 each year in location specific community benefits. These would support local projects and the aspirations of the local communities affected the most during the construction and operation of the Proposed Development.

13.7.45 The impact from the payment of location specific community benefits was assessed as **minor (beneficial).**

Ownership

13.7.46 The Applicant agreed and committed to implement general principles of community benefit from the Proposed Development (Orkney Islands Council, 2019), should it be developed to operation. These include:

- the key purpose of the Proposed Development is to generate profit to be used for the benefit of the people of Orkney;
- community benefit from the project will be delivered via a Community Fund with funding distributed in the interests of Orkney and its inhabitants;
- financing of the project will be structured to achieve a profit which can be used for community benefit as soon as reasonably practicable in the project lifecycle, noting that any wind farm constructed must pay-off its own construction costs and provide a return on capital invested;
- profit may be retained for the purpose of extending the life of the Community Fund, such as through developing new projects, or repowering existing projects; and
- the Proposed Development is for the benefit of the whole community with benefit delivered through the distribution of funds. It will not be possible for private individuals to take a shareholding in any project.

13.7.47 These general principles contribute to the distinctiveness of the Proposed Development, since profits would stay in Orkney and be used for the benefit of the people of Orkney, increasing the level of local benefits significantly and also socialising the benefits amongst as many people as possible.

13.7.48 Based on its financial modelling, and recognising that numerous uncertainties exist in the electricity market, the Applicant expects that throughout its operation the Proposed Development could generate around £0.1 million in annual profits per MW of capacity installed. On this basis, the Proposed Development could generate £2.88 million in profits annually.

13.7.49 As an illustration of the potential impact that the profits could generate, it was assumed that spending made possible by the profits generated would support employment and generate additional benefits to suppliers. The extent of expenditure on staff and supply was based on their relative shares in the gross annual expenditure of Orkney Islands Council (Orkney Islands Council, 2019).

13.7.50 This would generate a direct impact equivalent to £2.2 million GVA in staff costs and support 57 jobs.

13.7.51 The impact from households spending was then estimated assuming that 70% of expenditure, as done for the induced impacts of above, would occur in Orkney. Similarly, it was assumed that 30% of supply spending would benefit local businesses.

13.7.52 Adding all these sources of impact, it was estimated that profits could generate £2.6 million GVA and support 66 jobs in Orkney. These economic benefits would be additional to the GVA and jobs directly associated with the development, construction, operation and maintenance of the Proposed Development itself.

13.7.53 The effects associated with ownership structure are assessed as **minor** (beneficial) in Orkney and as **negligible** (beneficial) across the Scottish economy.

Non-Domestic Rates

13.7.54 The Proposed Development would be liable for non-domestic rates, the payment of which would contribute directly to public sector finances. Whilst non-domestic rates are set at the national level, they are redistributed to local authorities and so considered to be local taxation. Analysis of the rateable values of nearby wind farms suggests that the average rateable value per MW is £30,834, and that the total rateable value would be £0.9 million.

13.7.55 Given a poundage rate of £0.516 per £1 of rateable value it is estimated that the Proposed Development could contribute up to £0.5 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.

13.7.56 These non-domestic rates, by providing an additional revenue stream, would support the delivery of local government services.

13.7.57 The effect on the economy of Orkney from the annual contribution from the Proposed Development to non-domestic rates was assessed as **minor** (beneficial).

Tourism and Recreation Effects

Wind Farms and Tourism Evidence

13.7.58 The most comprehensive study of the potential effects of wind farms 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, however a Scottish Government report confirmed the findings (ClimateXchange, 2012), and in the intervening time wind farms 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.

13.7.59 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).

13.7.60 Tourism employment was considered over the period 2009 to 2015, a six-year period over which Scotland and almost all local authority areas 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.

13.7.61 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.

13.7.62 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 area as a whole.

13.7.63 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.

13.7.64 The findings of this research are in accordance with those of the Scottish Parliament's Economy, Energy and Tourism Committee 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 wind farm development and tourism.

13.7.65 Overall, there is no research evidence that shows that fears of negative effects on the tourism economy in Scotland as a result of wind farms have been realised.

13.7.66 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 lead to effects on the tourism economy.

Basis of Assessment

13.7.67 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.

Tourism/Recreation Assets

13.7.68 This section considered whether the proposed Development would have any effect on tourism assets, including local visitor attractions, trails, tourism routes and accommodation providers, as identified in Section 13.6.

Visitor Attractions

13.7.69 There are a number of popular visitor attractions based within Kirkwall, such as the Magnus Cathedral, the Bishop's Palace and Earl's Palace, the Orkney Museum, and the Orkney Wireless Museum. These attractions are popular in part due to their historical significance and their explanation of Orkney's history, which would not be affected by the Proposed Development. Although the setting of palaces and the cathedral are likely to be important to their appeal, these are not expected to be affected and the effect has been assessed as **negligible**.

13.7.70 Wideford Hill Cairn is located less than a km from the Proposed Development. The Cultural Heritage assessment (Chapter 10) found a moderate significant residual effect on its setting whilst finding that the overall integrity of its setting will not be adversely affected. From a tourism perspective, Wideford Hill Cairn will still be accessible and given the findings on the overall integrity of its setting, it was considered unlikely that tourists would be discouraged from visiting by the Proposed Development. As a result, the effect was considered as **negligible** for tourism.

13.7.71 Orkney Golf Club, near Kirkwall, is relatively close to the site, which is 2-3 km away. Though the course is open to visitors, it is mainly for local use rather than as a tourism asset, and therefore the effect is expected to be **negligible**.

13.7.72 Pickaquoy Centre in Kirkwall, is located 3-4 km from the Proposed Development. The Centre has a wide offer of activities ranging from sport through cultural to social events. These features are unlikely to be affected by the Proposed Development and, as a result, the effect has been assessed as **negligible**.

13.7.73 Cuween Hill is located between 4-5 km to the west of the Proposed Development. The Cultural Heritage assessment (Chapter 10) found a moderate significant residual effect on its setting whilst finding that the overall integrity of its setting will not be adversely affected. Visitors go to this site in order to see the old archaeological remains. The main feature of this asset, from a tourism perspective, is not expected to be affected by the Proposed Development. As a result, the effect is assessed as **negligible** for tourism.

13.7.74 One of the most significant elements of Orkney's tourism offering is its archaeological heritage, which includes several sites that are thousands of years old, such as Skara Brae (and the adjacent, more modern Skaill House), the Ring of Brodgar, Maeshowe and the Standing Stones at Stenness. Each of these attractions is at least 10 km to the west of the Proposed Development and the main attractions (Skara Brae and Skaill House) are over 17 km to the west. Chapter 10 (Cultural Heritage) identified no setting effects from the Proposed Development and the Proposed Development will not change the popularity of the sites, since it will not impair on the main features of these assets, their heritage and historical character. As a result, it is expected that the effect on tourism would be **negligible.**

13.7.75 There are also three distilleries at varying distances from the Proposed Development, with one based in Kirkwall and two based near Scapa Beach. The attractiveness of these distilleries is the industrial processing of creating and distilling the spirit, the history of the companies and the spirits themselves. These aspects would not be affected and therefore the effect has been assessed as **negligible**.

13.7.76 The Italian Chapel on Lamb Holm, near the Churchill Barriers, is 15 km from the Proposed Development. Given the distance, and that people are attracted by the building's architecture and story, it is expected that the effect would be **negligible**.

Recreational Trails

13.7.77 The Kirkwall Explorer and Peedie Sea begins in Kirkwall, passing through the narrow streets and then past the Peedie Sea and around a lake for model yachts. What makes the walk attractive is the streets of Kirkwall and the water attractions.

13.7.78 The Wideford Hill and Chambered Cairn walk begins in Kirkwall and then goes west to Wideford Hill and a cairn on its slope, and incorporates a view from the top of the hill, which is likely to include a view of the Proposed Development.

13.7.79 The short Rerwick Head walk is at the northernmost point of Tankerness and passes the remains of a historic Second World War battery. The Wideford and Inganess walk incorporates the sandy beach of Inganess Bay and views towards the Bay and an abandoned ship, as well as the Wideford Burn and areas of farmland and native forest.

13.7.80 The Scapa Flow and Loch of Ayre walk near St Mary's passes along coastal cliffs, with views towards Lamb Holm, Glims Holm and Burray, as well as Second World War artefacts. The Orphir Bay walk passes along low coastal cliffs with views towards Scapa Flow and incorporates locations from Orkney's past.

13.7.81 The Ring of Brodgar to Maeshowe walk incorporates archaeological sites, which are not expected to be directly affected by the Proposed Development. The Binscarth Wood walk near Finstown passes through a rare patch of wood, boggy land and around the Loch of Wasdale.

13.7.82 St. Magnus Way is expected to be closest to the Proposed Development, when it reaches Kirkwall. It is expected that the Proposed Development will not affect the route's peacefulness and its being an ideal space for reflection. In addition, its religious and spiritual significance will likely be undiminished.

13.7.83 Overall, the Proposed Development would not affect the availability of any recreational trails, nor the features that make them attractive. The effect has been assessed as **negligible** for tourism.

Accommodation Providers

13.7.84 The major centre for hotels, youth hostels and other accommodation providers in Orkney is Kirkwall, which has over 50 providers that are 2-5 km from the Proposed Development. The attraction of these providers is that Kirkwall is the main town in Orkney, with many of its attractions and acts a base from which other parts of The Mainland of Orkney can be explored.

13.7.85 At the Bay of Weyland to the north-east of Kirkwall are 12 bed and breakfasts/guest houses. The main attraction is that these accommodation facilities are in a relatively quiet area and are close to Kirkwall and its attractions. Similarly, the bed and breakfasts/guest houses at Inganess Bay are relatively close to Kirkwall, while still being rural, with views towards Inganess Bay.

13.7.86 The accommodation neat St Mary's is close to attractions such as the Italian Chapel, as well as having views towards the South Isles, which would be unaffected.

13.7.87 There are a small number of accommodation providers to the west of Scapa Bay, over which they have views, and they act as a base to visit attractions, see birds and go fishing.

13.7.88 The bed and breakfasts/guest houses at Kirkbister, Orphir and Houton are situated between Stromness and Kirkwall, with quiet surroundings and views towards Scapa Flow.

13.7.89 The accommodation at Stenness and on the west coast of the Bay of Ireland, as well as accommodation around the Loch of Harray advertise based on their proximity to Orkney attractions such as the Standing Stones at Stenness and the Ring of Brodgar as well as their views towards Loch of Harray and Loch of Stenness.

13.7.90 There are a number of bed and breakfasts/guest houses in the north-west of The Mainland, which are within a quiet, rural setting and have views towards Rousay.

13.7.91 There are also a small number of accommodation providers on the west side of the Bay of Firth. These providers are advertised based on the quiet, rural setting and views over the water, including towards the Bay of Firth and the islands of Shapinsay and Gairsay.

13.7.92 There are six self-catered accommodation providers in Finstown, which are located between Stromness and Kirkwall. A number of them are on the waterfront and have views towards the Bay of Firth, including towards the islands of Holm of Grimbister and Damsay.

13.7.93 Overall, the effect on the accommodation sector within 15 km of the Proposed Development has been assessed as **negligible** since the motivation for tourist visits to Orkney is unlikely to be affected by the Proposed Development and in most cases the features used for marketing individual providers are unlikely to be affected.

Tourism Routes

13.7.94 The majority of cruise ship passengers and a number of visitors to Orkney arrive at Hatston Ferry in Kirkwall, which is within 2 km of the Proposed Development. It is not expected that this will affect the main motivation for cruise passengers coming to Orkney, which is visiting the attractions, and the effect has been assessed as **negligible**.

13.7.95 Similarly, one of the main tourism routes, between Kirkwall and the eastern Mainland, where attractions such as the Ring of Brodgar and Skara Brae as well as the town of Stromness are located, would pass by the Proposed Development. This is not expected to affect the main motivation for using the road of reaching the attractions and the effect has been assessed as **negligible**.

13.8 Additional Mitigation and Enhancement

Socio-Economics Mitigation (Enhancement)

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

13.8.2 Since the analysis in section 13.7 did not find any significant adverse effects, no need for mitigation measures was envisaged.

Best Practice in Supply Chain Development

13.8.3 Best practice is set out in a 2014 report by RenewableUK (RenewableUK, 2014), which considered how developers can increase economic impacts in the local area. There are six main recommendations, which the Applicant has indicated a commitment to, subject to procurement processes and procedures:

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

13.9 Residual Effects

Construction

13.9.1 Construction is expected to result in a temporary, **minor** beneficial socio-economic effect in Orkney and **negligible** (beneficial) socio-economic effect in Scotland.

Operation

13.9.2 Direct and indirect spend related to operational and maintenance expenditure is expected to result in a permanent, **negligible** (beneficial) effect on the Orkney and Scottish economies.

13.9.3 Whilst the benefits associated with the interconnector are indirect and cannot be solely attributed to the Proposed Development, they represent a material change for the Orkney economy and so were assessed as **moderate** (beneficial) for Orkney (and so significant) and **negligible** (beneficial) for Scotland.

13.9.4 The impact from the payment of location specific community benefits was assessed as **minor (beneficial),** the effect on the economy of Orkney from the annual contribution from the Proposed Development to non-domestic rates was assessed as **minor** (beneficial), and the effects associated with ownership were assessed as **minor** (beneficial) in Orkney.

13.9.5 The assessment of tourism assets and accommodation providers found that there were no significant adverse effects expected as a result of the Proposed Development.

13.10 Cumulative Assessment

Local Supply Chain and Tourism

13.10.1 The construction of the existing wind farms in Orkney has 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 and such cumulative effects can also be expected from consented projects such as Hesta Head and Costa Head Wind Farms. Overall, the effect on the local economy is assessed as **negligible**.

13.10.2 A review of existing evidence on the relationship between wind farms and tourism has found little evidence of an adverse 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 is unlikely that there would be cumulative effects on the local tourism economy. Therefore, the cumulative effect on the tourism and recreation economy was assessed as **negligible**.

13.11 Summary

13.11.1 The socio-economic and tourism baseline suggests that Orkney has a declining and ageing population in comparison to other areas of Scotland. While the labour market performs well, the area features higher costs of living in comparison to the rest of Scotland, which are partly associated to the higher share of income that needs be spent on fuel. Tourism plays an important part in the local economy and accounts for 9.6% of employment.

13.11.2 Based on an installed capacity of 28.8 MW, it was estimated that the Proposed Development during the construction and development phase could generate up to:

- £2.6 million GVA and 39 job years in Orkney; and
- £10.4 million GVA and 161 job years in Scotland.

13.11.3 It was estimated that annual direct and indirect spend related to operational and maintenance expenditure for the Proposed Development would generate:

- £0.3 million GVA and four jobs in Orkney; and
- £0.5 million GVA and nine jobs in Scotland.

13.11.4 The Proposed Development would have an important strategic role for Orkney towards the achievement of the threshold set by Ofgem, in order for the construction of a new interconnector to be approved. This would in turn lead to additional socio-economic benefits and will support investment and innovation in the renewable sector in Orkney.

13.11.5 While the exact details and structure of the locational community benefit fund are yet to be decided, local communities in Orkney and, in particular, those living in proximity to the Proposed Development will be able to benefit from community benefit funding.

13.11.6 Throughout its operation, the Proposed Development would also contribute to local public finances via payment of non-domestic rates and in this way support the provision of public services locally. It was estimated that the Proposed Development could contribute £0.5 million each year in non-domestic rates.

13.11.7 The Proposed Development would have a wider impact than that associated with local community benefits, given that the Applicant is Orkney Islands Council, which is committed to spread the benefits from its investment. Based on an annual profit of £0.1 million/MW, it was estimated that the Proposed Development could generate £2.88 million annually. This could support 66 jobs and £2.6 million GVA in Orkney, in addition to the GVA and jobs directly associated with the development, construction, operation and maintenance of the Proposed Development itself.

13.11.8 A review of existing evidence on the relationship between wind farm developments and tourism has found little evidence of a negative effect on the tourism economy. An assessment of tourism attractions, popular routes and accommodation providers was also undertaken, which found no significant adverse effects.

13.11.9 Overall, there were no significant adverse effects associated with the Proposed Development, while there would some beneficial effects linked to construction and operational expenditure, though they would also not be significant. Whilst it is noted that the benefits are indirect and cannot be solely attributed to the Proposed Development, the contribution made to the threshold for the interconnector and the implications for the future development of the renewable energy in Orkney represent a material economic opportunity for Orkney, and is considered a moderate beneficial effect.

Table 13-21 – Summary of Effects

Description of Effect	Significance of Potential Effect		Mitigation Measure	Significance of Residual Effect	
	Significance	Beneficial/ Adverse		Significance	Beneficial/ Adverse
Construction					
Economic Impact of up to £2.6 million GVA and 39 job years in Orkney	Minor	Beneficial	n/a	Minor	Beneficial
Economic impact of up to £10.4 million GVA and 161 job years in Scotland	Negligible	Beneficial	n/a	Negligible	Beneficial
Operation					
Annual O&M economic impact of up to £0.3 million GVA and four jobs in Orkney	Negligible	Beneficial	n/a	Negligible	Beneficial
Annual O&M economic impact of up to £0.5 million GVA and nine jobs in Scotland	Negligible	Beneficial	n/a	Negligible	Beneficial
Contribution to the case for the interconnector	Moderate	Beneficial	n/a	Moderate	Beneficial
Annual payment of an estimated up to £0.5 million in non-domestic rates	Minor	Beneficial	n/a	Minor	Beneficial
Annual payment of £144,000 in a location specific community benefit fund	Minor	Beneficial	n/a	Minor	Beneficial
Annual profit of £2.88 million from ownership	Minor	Beneficial	n/a	Minor	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 core paths and recreational access	Negligible	n/a	n/a	Negligible	n/a

Table 13-22 – Cumulative Effects

Description of Effect	Significance of Potential Effect		Mitigation Measure	Significance of Residual Effect	
	Significance	Beneficial/ Adverse		Significance	Beneficial/ Adverse
Local Supply Chain Cumulative Effects	Negligible	Beneficial	n/a	Negligible	Beneficial
Cumulative Tourism Effects	Negligible	Beneficial	n/a	Negligible	Beneficial

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