Offshore Wind Power Limited

West of Orkney Windfarm Offshore EIA Report

Volume 1, Chapter 19 - Socio-economics

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West of Orkney Windfarm

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CONTENTS

19 SOCIO-ECONOMICS

Chapter summary

This chapter of this EIA Report assesses the potential effects from the Project on socio-economic receptors, including tourism. This includes direct, indirect, whole Project assessment, cumulative, inter-related effects, inter-relationships, and transboundary effects. The chapter provides a whole Project assessment, considering both offshore and onshore aspects of socio-economics.

The assessment focuses on the following spatial areas: UK; Scotland; Highland; Caithness; Sutherland and Orkney.

The baseline desktop study supplemented with data received through stakeholder and extensive community consultation including novel techniques such as a questionnaire survey, and input from The Socio-Economic Working Group, established specifically for the Project. The baseline identified evidence of local economic vulnerability, especially in Caithness where there is a depopulation trend. Labour market activity metrics indicate long term structural weakness to the Caithness economy, but there is also evidence of increasing vulnerability for the Orkney economy. Tourism is identified as an important industry in Caithness and Sutherland, and in Orkney, with visitor numbers rebounding following the difficulties caused by the Covid-19 pandemic. The baseline assessment indicates that there are business sub-sectors that have the potential to contribute to the supply chain for the Project, including the provision of civil engineering, transport services, and professional services. There are existing concentrations of deprivation in Caithness, particularly in Wick, but not in areas that are likely to be epicentres for the Project.

The following impacts were identified as requiring assessment during construction, operation and maintenance, and decommissioning:

- Effects on employment and economic output (Gross Value Added (GVA)) receptors;
- Effects on the demand for housing and local services receptors;
- Effects on tourism industry receptors;
- Effects on onshore businesses associated with the processing of commercial fish and/or the commercial fishing industry supply chain receptors;
- Effects on socio-cultural receptors; and
- Effects on distributional receptors.

The assessment has taken account of embedded mitigation measures for the assessment of potential effects, including measures that are committed to as part of the Supply Chain Development Statement for the Project agreed with Crown Estate Scotland with the objective of enhancing the level of participation of UK, Scottish and local suppliers within the supply chain for the Project.

No significant adverse effect on socio-economic receptors was identified in the assessment. Therefore, no secondary mitigation is proposed with respect to socio-economics receptors. Significant beneficial effects are identified during both the construction and operation and maintenance stage with respect to local employment and GVA.

No significant inter-related effects or transboundary effects are predicted for socio-economics receptors.

Monitoring arrangements covering key performance indicators across all socio-economics receptors will be designed and implemented as a core part of the Project implementation activities. Crown Estate Scotland will review SCDSs to gauge the extent to which applicants have delivered the commitments they set out in them.

19.1 Introduction

This chapter of the Offshore EIA Report presents the socio-economics receptors (including tourism) of relevance to the Project and assesses the potential impacts from the construction, operation and maintenance, and the decommissioning of the Project on these receptors. Where required, mitigation is proposed, and the residual impacts and their significance are assessed. Potential cumulative and transboundary impacts are also considered.

The socio-economics topic-specific chapter includes consideration of effects that occur from both the offshore Project and onshore Project. This is for two principal reasons:

- Separating important aspects of expected Project expenditures (such as Project design, development, management, and various aspects of Project construction and installation) into onshore and offshore categories is not meaningful for socio-economics receptors as these aspects are intrinsically linked. Therefore, the assessment in this chapter has been undertaken on a 'whole Project' basis; and
- The receptors that have the potential to experience effects relevant to the socio-economics topic – such as businesses, workers, and other members of the workforce, households, and visitors – are either largely or wholly based onshore. Consideration of the scale and duration of potential effects, therefore, needs to account for, *inter alia*, the onshore spatial location of these receptors in connection to the Offshore Site and the onshore places where business and socio-economic activities relating to the Project are likely to occur. This approach also justifies the use of a hierarchy of spatial areas in the assessment.

Although the Project does not require an Island Community Impact Assessment (ICIA) as specified by Section 8 of the Islands (Scotland) Act of 2018[1], the assessment of the potential socio-economic effects of the Project has been undertaken in line with the broad principles of an ICIA, including extensive consultation with communities and stakeholders and wide-ranging data collection.

Table 19-1 below provides a list of all the supporting studies which relate to and should be read in conjunction with the socio-economics impact assessment. All supporting studies are appended to the EIA Report and issued on an accompanying Universal Serial Bus (USB).

Table 19-1 Supporting studies

DETAILS OF STUDY	LOCATIONS OF SUPPORTING STUDY
Expected investment, employment, and output effects: quantification methodology	Offshore EIA Report, Supporting Study (SS) 20: Socio-economics Assessment (Quantification) Methodology.

[1] *The Islands (Scotland) Act which was passed by the Scottish Government in 2018 sets out the purpose for the National Islands Plan. The main objectives and strategy being in relation to improving outcomes for islands communities. 45% of the OAA is located within the Scottish Island Marine Area.*

The impact assessment presented herein draws upon information presented within other impact assessments within the Offshore EIA Report. Equally, the socio-economics impact assessment also informs other impact assessments. This interaction between the impacts assessed within different topic-specific chapters on a receptor is defined as an 'inter-relationship'. The chapters and impacts related to the assessment of potential effects on socio-economics are provided in Table 19-2.

The socio-economics impact draws upon information presented within:

- Onshore EIA Report, chapter 12: Land use and other users – which assesses the potential impacts of the Project on commercial forestry, agriculture, and a number of uses that are relevant to recreation and tourism, including angling, deer stalking, cultural heritage, Core Paths and walking, local accommodation, and the North Coast 500 tourist route;
- Offshore EIA Report, chapter 11: Fish and shellfish ecology – which assesses the potential impacts of the Project on commercially important fish and shellfish species which has the potential to indirectly affect commercial fishing activity, which is relevant to socio-economics because of the importance of these activities to the economy of the socio-economics study area;
- Offshore EIA Report, chapter 14: Commercial fisheries – which assesses the potential impacts of the Project on commercial fishing activity in the socio-economics study area, and which is relevant to socio-economics because of the importance of these activities to the economy of the socio-economics study area;
- Offshore EIA Report, chapter 15: Shipping and navigation– which assesses the potential impacts of the Project on recreational boating;
- Offshore EIA Report, chapter 16: Marine archaeology and cultural heritage – which assesses the potential impacts of the Project on setting of historic assets. This is of relevance to the socio-economics topic because of the current importance of tourists and other visitors to the economy of the socio-economics study area, coupled with the potential of the Project to affect the perception of the area as a visitor destination;
- Offshore EIA Report, chapter 18: Seascape, landscape, and visual assessment – which assesses the potential impacts of the Project on landscape and seascapes. This is of relevance to the socio-economics topic because of the current importance of tourists and other visitors to the economy of the socio-economics study area, coupled with the potential of the Project to affect the perception of the area as a visitor destination; and
- Offshore EIA Report, chapter 20: Other sea users– which assesses the potential impacts of the Project on various other types of marine activity, including marine recreation (e.g. yachting, seas kayaking) and commercial activities such as those carried out by marine wildlife tour operators.

Where information is used to inform the impact assessment for the socio-economics topic, reference to the relevant Offshore EIA Report chapter is given. See Table 19-2 for a description on how other topics interrelate with socioeconomics.

Table 19-2 Socio-economics inter-relationships

CHAPTER	IMPACT	DESCRIPTION
Land use and other users (chapter 12, Onshore EIA Report)	Impact on tourism and recreational resources, including Core Paths and	Impacts of the Project on natural heritage assets and/or the ability of visitors to access

CHAPTER	IMPACT	DESCRIPTION
	other walking, angling and deer stalking, and the North Coast 500 route.	or enjoy these assets could have a detrimental effect on visitor numbers and visitor expenditure, in which case there could be adverse consequences for local businesses.
Fish and shellfish ecology (chapter 11, Offshore EIA Report)	Impacts on offshore commercial fishing activity.	The fish and shellfish ecology chapter assesses the effects of the offshore Project on species of commercial importance. Effects on these species could indirectly affect levels of business activity in onshore businesses located in the fishing industry supply chain and/or businesses involved in processing or adding value to locally landed fish.
Commercial fisheries (chapter 14, Offshore EIA Report)	Impacts on offshore commercial fishing activity.	Impacts of the Project on the volume and value of commercial fishing activity could affect levels of business activity in onshore businesses located in the fishing industry supply chain and/or businesses involved in processing or adding value to locally landed fish.
Shipping and navigation (chapter 15, Offshore EIA Report)	Impacts on marine recreational boating	Effects on recreational boating are assessed within chapter 15: Shipping and navigation. This could result in the displacement of recreation and tourism industry activities. Furthermore, socio-economic impacts (either positive or negative) have the potential to impact shipping and navigation receptors.
Marine archaeology and cultural heritage (chapter 16, Offshore EIA Report)	Impact on the experience of tourist visitors to the area in respect of the quality of experience of recreational activity associated with cultural heritage assets.	Indirect impacts from the development on the setting of historic environment assets that affects their heritage value could affect the recreation and tourism experience.
Seascape, landscape and visual assessment (chapter 18, Offshore EIA Report)	Impact on the experience of tourist visitors to the area in respect of the quality of experience of outdoor recreational activity.	Adverse effects on the experiences of visitors could result in the displacement of outdoor recreation and tourism industry activity.
Other sea users (chapter 20, Offshore EIA Report)	Impacts on marine recreational activity, such as yachting and sea kayaking, as well as potential impacts on the activities of marine wildlife	Adverse effects on the experiences of those participating in marine recreational activity and/or the customers of commercial operators (e.g. those offering wildlife tours

CHAPTER	IMPACT	DESCRIPTION
	tour and/or marine fishing tour operators.	or marine fishing opportunities) could result in the displacement of recreation and tourism industry activities.

The following specialists have contributed to the assessment:

- Development Economics Ltd – quantification of investment impacts, including estimates of employment and Gross Value Added (GVA) effects; social and cultural effects; preparation of the Offshore EIA Report chapter;
- Offshore Wind Power Limited (OWPL) – details of expected levels of Project expenditure during each Project stage (development, construction, and installation; operation, decommissioning); and
- Facilitating Change – Information generated by the community consultation programme.

19.2 Legislation, policy, and guidance

Over and above the legislation presented in chapter 3: Planning policy and legislative context, the following legislation, policy and guidance are relevant to the assessment of impacts from the offshore Project on socio-economics. The section introduces, in turn, relevant legislation, policy, and/or guidance from:

- The UK Government;
- The Scottish Government; and
- Local government (THC and OIC).

The preparation of this section has taken into account evidence identified and collated by the ScotMER Socio-economic Receptor Group.[2]

19.2.1 United Kingdom Government policy

Support for the offshore renewables sector was a component of the original Industrial Strategy published by the United Kingdom (UK) Government in 2017, and it is also prominent in the successor strategy Build Back Better: The Plan for Growth published in 2021 identifies opportunities for up to 60,000 jobs across the UK in the offshore renewables sector, thereby building upon the targets set out in the Government's Ten Point Plan for a Green Industrial Revolution announced in 2020.

Also in 2020, the UK Government launched the Offshore Wind Sector Deal, which included several initiatives and targets that sought to support and stimulate additional investment in the offshore renewable energy sector, such as:

- Providing developers and investors with greater certainty over the scale and timing of future Contracts for Difference allocation rounds;

[2] Socioeconomic ScotMER Receptor Group - gov.scot (www.gov.scot).

- Measures to support additional investment in expanding and strengthening the UK supply chain for renewables;
- Support for additional R&D and other sources of innovation in offshore renewable energy technologies;
- Measures to increase the supply of an appropriately skilled workforce;
- Targets for increased representation of women and other under-represented groups in the offshore renewable industry workforce; and
- A target of total lifetime UK content of 60% for developments commissioning from 2030 onwards.

19.2.2 Scottish Government policy

19.2.2.1 National Planning Framework 4 (NPF4)

The offshore renewables sector is prominent in 'Scotland 2045: The Fourth National Planning Framework (NPF4)' (Scottish Government, 2022a), the national spatial strategy for Scotland. A consultation draft of NPF4 was published in November 2021, and subsequently a revised draft of NPF4 was laid before the Scottish Parliament on 8th November 2022 and was adopted in February 2023. In particular, NPF4 highlights:

- The opportunity that the development of offshore renewables presents for coastal and island communities to strengthen local economies, successfully regenerate, and secure long-term sustainability;
- That greener energy choices such as offshore renewables have a natural home in coastal Scotland and will be at the heart of the future well-being of the economy;
- That offshore renewables are an important part of Scotland's energy transition, and there will be a need to align terrestrial and marine development to maximise the potential of this sector;
- Affirms that a key policy objective is '*To encourage, promote and facilitate all forms of renewable energy development onshore and offshore*'; and
- Affirms that new infrastructure and repurposing of land will be needed to help to shift industrial activity towards supporting the offshore renewables sector. Potential locations for such investment identified by the Revised Draft NPF4 that are potentially relevant to the West of Orkney wind farm includes: Scapa Flow; Scrabster; Nigg; Wick; and Hatston; and Kirkwall.

NPF4 replaces National Planning Framework 3 (NPF3) (Scottish Government, 2014) and the Scottish Planning Policy (SPP).

19.2.2.2 Scotland's National Marine Plan (NMP)

Scotland's National Marine Plan (NMP) (Scottish Government, 2015) recognises that sustainable development and use of the marine environment can provide multiple economic benefits, including growth opportunities, employment, skills development, investment, and trade. Social benefits associated with sustainable development of the marine environment include opportunities for wealth generation and prosperity and improved quality of life.

The current (2015) NMP identifies that Scotland's offshore waters provide an opportunity for the further development of an internationally important renewable energy industry. However, the NMP also recognises that the growth of the sector will require consideration of potential interactions with other industries, including Commercial Fisheries, Shipping, and Oil and Gas extraction. There is also recognition of potential interactions with Recreation and Tourism,

although the NMP does state that the majority of these activities occur within 5 kilometres (km) (3 nautical miles) of the coastline.

In October 2022 the Scottish Government announced the commencement of a process that will update and replace the 2015 NMP with a new Marine Plan for Scotland.

19.2.2.3 Regional Marine Planning

In 2016 Marine Scotland[3], The Highland Council (THC) and Orkney Islands Council (OIC) jointly published the collaborative Pilot Pentland Firth and Orkney Waters Marine Spatial Plan. This Plan is intended to assist in integrating and co-ordinating marine development and management decisions and activities. The Plan includes a section of sectoral policies, one of which is renewable energy. This section highlights the very large potential of renewable energy in the Pentland Firth and Orkney Waters area, which is identified in the Plan as being significant on a national (UK) level. The Plan states that proposals for renewable energy generation will be supported where due regard is paid to potential adverse effects on other marine industries and where any adverse impacts are satisfactorily mitigated.

The Pilot Pentland Firth and Orkney Waters Marine Spatial Plan has informed the development of the draft Orkney Islands Regional Marine Plan. The most recent planning update for this draft states that the 'Orkney Islands Regional Marine Plan: Consultation Draft' went to the OIC committee process for endorsement in November 2022 and sent onto Marine Scotland in December 2022 for approval by Scottish Ministers for public consultation. It is proposed that, once approved, the Orkney Islands Regional Marine Plan will be published over a 12-week public consultation period in summer of 2023 (OIC, 2022). The draft Orkney Islands Regional Marine Plan acknowledges the potential benefits of renewable energy for the Orkney Islands but also acknowledges the potential impacts on the marine environment. Sector Policy 5a of the plan states that decisions makers must pay due regard to the net economic impact of offshore wind energy developments.

19.2.2.4 National Islands Plan

In December 2019, the Scottish Government published the National Islands Plan, setting out its objectives for improving the quality of life for Scotland's island communities. Priorities for action in the Plan included: increasing population levels, promoting sustainable economic development, environmental wellbeing, community health and wellbeing, enhancing community empowerment, improving transport services and digital connectivity, reducing fuel poverty, and improving biosecurity. The development of offshore renewables in waters adjacent to island communities such as Orkney creates the potential to further the objectives of the National Islands Plan, especially with respect to population stabilisation, sustainable economic development, environmental wellbeing, and community empowerment.

[3] *Marine Scotland have since been renamed Marine Directorate.*

19.2.2.5 Other Scottish Government economic development strategies, policies and statements

Current economic development strategies, policies and statements produced by the Scottish Government that are most relevant to the development of the renewable energy sector in Scotland include the following:

- Energy Strategy (Scottish Government, 2017): Emphasizes the development of the renewable energy sector to generate socio-economic benefits for Scotland. The Strategy includes a specific commitment to growing and supporting the further development of the offshore wind sector in Scotland, emphasising both the development of a stronger industrial supply chain and a highly skilled and competitive workforce;
- Climate Change Plan Update (Scottish Government, 2020a): Further emphasises the important role that Ministers place on offshore renewable energy as a source of high-quality green jobs, with additional emphasis on the role that the sector can play in harnessing the industrial and workforce skills already available in the declining offshore oil and gas sector;
- Climate Emergency Skills Action Plan (Skills Development Scotland, 2020): Identifies renewable energy as being key to the future creation of additional high quality, green jobs for Scotland and sets out priorities for public policy actions and investment to assist people to access these employment opportunities;
- Sectoral Marine Plan for Offshore Wind Energy in Scotland (Scottish Government, 2020b) and the Scotland Offshore Wind Policy Statement. These two documents, published simultaneously in October 2020, provide a strategic spatial framework for the development of the offshore renewables sector in Scotland. They also set out indicative targets and ambitions for the development of the sector;
- The Scotland Offshore Wind Policy Statement (Scottish Government, 2020c): Provided an update and reinforcement of the objectives set out in the 2017 Energy Strategy. The Statement indicates that there is frustration amongst the Scottish Government and key stakeholders that the renewable energy supply chain in Scotland has been missing out on offshore wind manufacturing contracts and identifies several actions being taken by the Scottish Government and industry to help address this issue; and
- Scotland's National Strategy for Economic Transformation (Scottish Government, 2022b): Emphasises the role that the offshore renewables sector is expected to play in helping drive future prosperity and sustainability for the Scottish economy. The strategy highlights in particular the potential for substantial supply chain benefits and opportunities for new high-value jobs, as well as replacing jobs expected to be lost in the fossil fuels sector. The strategy also highlights the role that the offshore renewables sector is expected to play in supporting the objectives of the Regional Economic Partnership operating in the Highland and Islands region.

In addition, statements published by the Scottish Government in its response to the Just Transition Commission report (Scottish Government, 2021), further emphasise that the growth of the offshore renewable energy supply chain and workforce is seen as an important part of the strategy to replace thousands of jobs that have already been lost (and are expected to continue to be lost) due to the decline of the offshore oil and gas sector in Scotland. The Scottish Government has also recently published the 'Draft Energy Strategy and Just Transition Plan - delivering a fair and secure zero carbon energy system for Scotland' in January 2023 (Scottish Government, 2023). The themes of the draft in relation to new energy infrastructure required for Scotland are apparent. The draft emphasises the role that renewable energy in Scotland can play in realising climate change ambitions and maximising benefits to the communities and the economy.

19.2.3 Local policy

19.2.3.1 Highland-wide Local Development Plan

The Highland-wide Local Development Plan (HwLDP) (2012) offers in-principle support for the development of marine renewables. The HwLDP states that the development of marine renewables poses a policy challenge as it offers scope for significant inward investment but they have uncertain locational requirements. However, Policy 41 in the Plan identifies a number of locations where the development of business and industrial land for marine renewables will be supported in principle, including Scrabster, Thurso, and Wick.

19.2.3.2 Caithness and Sutherland

The Adopted Caithness and Sutherland Local Development Plan (Highland-wide Local Development Plan (HwLDP) (2012)) identifies the positive employment and economic growth potential offered by the expansion of the offshore renewables sector. In particular, CaSPlan seeks to maximise these opportunities by supporting the development of ports and harbours and other infrastructure. It is also stated that CaSPlan seeks to support and enable the Energy Hub Area for Co-ordinated Action as identified in NPF3 (Scottish Government, 2014) for Pentland Firth and Orkney Waters.

Furthermore, CaSPlan seeks to maximise opportunities from the offshore renewables sector by promoting an Area for Energy Business Expansion in the north-east. According to CaSPlan:

> *'This includes employment-generating uses to service the sector, through support for harbours, allocation of business and industrial land and a flexible approach to considering the needs of emergent sectors and strategic infrastructure proposals.' (CaSPlan, Page 8).*

19.2.3.3 Orkney

The adopted Orkney Local Development Plan (OIC, April 2017) confirms that OIC supports appropriate renewable energy developments and associated infrastructure. In particular, Policy 7 (Energy), confirms that:

> *'The development of renewable and low carbon energy schemes, including the onshore infrastructure and/or buildings required for offshore marine renewable energy developments, and related transmission infrastructure, will be supported where it has been demonstrated that the proposal will not result in significant adverse effects on known constraints, either individually or cumulatively.' (OLDP, Page 27).*

In addition, Policy 5 of the OLDP also confirms that the Council recognises that it is important that enough strategic land is allocated to enable growth within settlements to ensure there is housing provision to support potential demand from emerging industries such as renewables (OLDP, Page 19). It is worth noting that the current edition of the Orkney Local Housing Strategy (2017-2022, page 38) identifies an ambition for a continuing increase in the residential population of the islands, driven by employment-led in-migration. OIC acknowledge that this strategy will require a significant increase in local housing supply, and the Local Housing Strategy has identified measures that the Council expects will deliver the required increase in housing supply.

19.2.4 Guidance

Detailed guidance on socio-economic impact assessment for marine and offshore developments has not yet been published by Marine Directorate but is understood to be currently in preparation. In June 2022, the Marine Analytical Unit (MAU) of Marine Scotland published a research report entitled *Defining 'local area' for assessing impact of offshore renewables and other marine developments* (MAU, June 2022). This report is intended to identify principles to inform an appropriate approach for defining the local impact area on land for large industrial developments (such as offshore windfarms) at sea. The report does not represent guidance for socio-economic impact assessments of such developments as such; rather, it is intended to be part of the evidence base to inform the development of such guidance.

The report identified six principles to inform the selection of local areas for the assessment of large offshore developments such as windfarms, as follows:

1. Dual geographies: the area used to assess investment and supply chain impacts should be separate from the area for the assessment of wider socio-economic impacts;
2. Appropriate impacts: the indicators (receptors) for assessment should be identified prior to the definition of the spatial areas to be used in the assessment;
3. Epicentres: the local areas chosen should include all the epicentres of the appropriate impacts;
4. Accountability: the areas used in the assessment should comprise pre-existing economic or political geographies (such as community councils or local authorities);
5. Understandability: the local areas should be defined in a way that is understandable to local communities; and
6. Connectedness: the local area used for the assessment of investment and supply chain impacts should consist of connected (including coastal) pre-existing economic or political geographies.

The publication of the report by MAU has influenced the selection of the local socio-economics study areas used in this assessment. Further details on socio-economics study area definition is provided in section 19.4.

19.3 Scoping and consultation

Stakeholder consultation has been ongoing throughout the EIA and has played an important part in ensuring the scope of the baseline characterisation and impact assessment are appropriate with respect to the Project and the requirements of the regulators and their advisors.

The Scoping Report was submitted to Scottish Ministers (via Marine Scotland - Licensing Operations Team (MS-LOT))[4] and THC on 1st March 2022, who then circulated the report to relevant consultees[5]. Scoping Opinions were received from MS-LOT on 29th June 2022 and from THC on 9th May 2022. Relevant comments from the Scoping

[4] *MS-LOT have since been renamed Marine Directorate - Licensing Operations Team (MD-LOT).*

[5] *The Scoping Report was also submitted to OIC, as the scoping exercise included consideration of power export to the Flotta Hydrogen Hub, however, this scope is not covered in this Offshore EIA Report and will be subject to separate Marine Licence and onshore planning applications. Some Scoping responses from OIC were still relevant to the wider socioeconomic assessment and have been considered within this chapter.*

Opinions and other consultation specific to socio-economics are provided in Table 19-3 below, which provides a high-level response on how these comments have been addressed within the assessment for socio-economics within the Offshore EIA Report.

Further consultation has been undertaken throughout the pre-application stage. The list below summarises the consultation activities carried out relevant to the socio-economics assessment topic.

- Socio-Economic Working Group (SEWG) – the SEWG was set up to provide a forum for local authorities and other key stakeholders to provide views on the Project as it developed and to share relevant information. The SEWG has been meeting quarterly since June 2022, with membership from the following organisations:
  - Caithness Chamber of Commerce;
  - Dounreay Site Restoration Limited;
  - Focus North;
  - THC;
  - Highlands and Islands Enterprise;
  - OIC;
  - Visit Scotland; and
  - The Project team.
- More details of the meetings of the SEWG are provided later in this section.
- Local stakeholder consultations – Meetings, interviews and other consultation activity have taken place with a range of local authority departments and other organisations. For example, meetings have been held with organisations such as Public Health Scotland, NHS Highland, and NHS Orkney in order to identify available datasets to complete the baseline characterisation for healthcare. Similar meetings have been held with the Education and Learning departments of both THC and OIC to obtain up-to-date baseline data for education provision and expected future demand for school places in Caithness and Sutherland, and in Orkney;
- Community consultations – Extensive community consultation activity including interviews with stakeholders has taken place for the Project, which is summarised in chapter 6: Stakeholder engagement. The community consultation process is relevant to the assessment of the socio-economics topic because the questionnaires used in consultation events provided local residents with an opportunity to provide feedback on a number of aspects that are considered in this chapter, including the potential for job opportunities, interactions with other industries, effects on local services, and the potential for socio-cultural effects. Consultation events held in the summer and autumn of 2022 also provided an opportunity to generate feedback (via questionnaires) of the views of visitors to the area, which is relevant to consideration of the potential interactions between the Project and the tourism industry. It is worth highlighting that there have been three distinct episodes of consultation, each of which was widely publicised via local print and broadcast media and other methods (such as posters and mailshots).
  - Three Community Panels events held in Caithness, Sutherland, and Orkney in June 2022 and January 2023;
  - Attendance at four Highland Games, Gatherings and Shows held in Caithness, Sutherland, and Orkney in July and August 2022; and
  - Pre-Application Consultation events in seven locations in Caithness, Sutherland, and Orkney in November 2022 with a further nine events occurring in May and June 2023.
- A representative of the team that undertook the assessment for the socio-economics topic participated (as an observer) in the third Commercial Fisheries Working Group meeting that took place in January 2023.

It was noted at the start of section 19.3 that a Socio-Economic Working Group had been established to facilitate consultation with local stakeholders. The Terms of Reference established for SEWG cover the following:

- To inform the socio-economic assessment of the West of Orkney Wind Farm;
- To ensure that all socio-economic activities occurring within the region are represented;
- To provide a forum for open and meaningful discussion to promote communication and understanding;
- To work collaboratively to share knowledge and exchange relevant sources of data;
- To critically evaluate available data sources relevant to socio-economics and to identify how any gaps can be filled; and
- To discuss potential mitigation options.

The quarterly meetings of SEWG are organised around the following topics:

- Updates on the Project;
- Relevant policy and guidance;
- Local community consultation;
- Baseline characterisation;
- Interactions with other assessment topics; and
- Other (ad hoc) topics and general discussion.

The main discussion points in each of the SEWG meetings held during the EIA are summarised in Table 19-2 below:

Table 19-2 Consultation activities for Socio-economics

TYPE OF CONSULTATION	DATE	SUMMARY
SEWG 1	23rd June 2022	The meeting started with a discussion of the proposed Terms of Reference for the Working Group. There was also discussion concerning Working Group representatives and nominations for additional membership. There was a detailed introduction to the Project and its intended design and characteristics. The intended approach to the socio-economic assessment was introduced. The discussion included the responses to the Scoping Report, with various participants highlighting aspects that were important to their respective organisations. There was discussion regarding the progress made so far on the baseline characterisation assessment, where there were gaps and how these might be filled. Representatives from the local authorities and enterprise agencies undertook to assist in providing additional data and/or providing signposting for where additional data could be found.
SEWG 2	4th October 2022	Project update, including ongoing refinement of design. The meeting also discussed the results of EIA offshore and onshore surveys.

TYPE OF CONSULTATION	DATE	SUMMARY
		Update on the consultation strategy. The meeting including a presentation and discussion covering the approach to community engagement, the Pre-Application Consultation (PAC) events, and the community questionnaire survey. Update on assessment guidance, including reports released by Marine Scotland (including *Defining 'Local Area' for Assessing Offshore Renewables and other Marine Developments*). There was a presentation and discussion on the proposed approach to the quantification of socio-economic impacts at a variety of spatial levels (including estimation of jobs and GVA). There was a presentation and discussion covering the approach to the Community Benefits Fund.
SEWG 3	23rd January 2023	Update on Project design. Progress on community consultation activities and responses from the community questionnaire survey. Further details with respect to the socio-economic impact assessment methodology and the early results from the quantification of potential employment and GVA results for alternative scenarios were presented. Discussion of sensitivity values to be used in the assessment for each of the receptors. The issue of displacement affecting tourism activity was discussed. There was consensus among the group that potential effects of the Project on demand for housing and local services should be treated as beneficial. Progress with supply chain development and skills and training initiatives.
SEWG 4	24th March 2023	Update on Project design. Discussion of draft impact assessment results, including details of expected numbers of jobs and value of GVA to be generated under both low and high case scenarios for local areas and Scotland. Discussion of the results of the socio-cultural and distributional impact assessments. Brainstorm session on how the potential positive effects of the Project can be realised, and how any potential adverse effects could be mitigated.

Table 19-3 Comments from Scoping Opinion relevant to socio-economics

CONSULTEE	COMMENT	RESPONSE
Scottish Ministers (via MD-LOT)	The Scottish Ministers are broadly content with the study area identified within the Scoping Report. With regards to baseline data, The Scottish Ministers, in line with the MAU advice, advise that the baseline data outlined in Table 2-83 of the Scoping Report is appropriate for desk based economic impacts, but is not appropriate to fully consider the social impacts.	Community consultation has informed the assessment of socio-cultural and distributional effects, presented in section 19.6. The approach to community consultation including concerns about potential socio-cultural and distributional effects – is detailed in section 19.2.
Scottish Ministers (via MD-LOT)	In line with the representation from the MAU, and OIC the Scottish Ministers advise that a full Socio-Economic Impact Assessment ("SEIA") must be included with the application. It is recommended that the SEIA includes detailed descriptions of the baseline and assumptions and includes details of primary data to fully assess the social impacts, in addition to the economic impacts, for all phases of the Proposed Development. This is a view supported by the MAU, OIC and THC.	Community consultation has informed the assessment of socio-cultural and distributional effects, as detailed in section 19.2. The socio-economic impact assessment is presented in section 19.6. This assessment considers social effects, in addition to economic impacts for all stages of the Project.
Scottish Ministers (via MD-LOT)	In line with the representation from the MAU, the Scottish Minsters disagree with the Developer's proposal to scope out socio-cultural effects and distributional effects within Table 2-88 of the Scoping Report and advise that this must be scoped in for all phases of the Proposed Development. The Scottish Ministers broadly agree with the remaining impacts scoped in and direct the Developer to the representations from the MAU and THC regarding the content of the SEIA and advises that this should be fully addressed.	The approach to community consultation – including concerns about potential socio-cultural and distributional effects – is detailed in section 19.2. Section 19.6 provides an assessment of potential of socio-cultural effects and distribution effects during all Project stages.
Scottish Ministers (via MD-LOT)	The Scottish Ministers advise that a tourism impact assessment must be included within the SEIA, this is .in line with advice from the MAU and OIC. However, the Developer must consider within the SEIA, the visual, environmental and economic impacts on tourism as detailed in the Visit Scotland representation. In line with the OIC representation, the SEIA must include impacts on recreational and historical assets within the study area.	The chapter also assesses interactions with tourism and recreation activities, including both land-based and marine recreational activities. This assessment considers the assessment and conclusions of chapter 12: Land use and other users; chapter 20: Other sea users; and chapter 18: Seascape, landscape and visual assessment.

CONSULTEE	COMMENT	RESPONSE
		Consideration of historical assets is included in the Onshore EIA Report, chapter 13: Terrestrial archaeology.
Scottish Ministers (via MD-LOT)	The Scottish Ministers advise that the Developer must consider socio-economic impacts to the Orkney economy within the SEIA as detailed in the representation of OIC. The Developer should establish a baseline of the Orkney economy through consultation with OIC.	The assessment of potential effects in section 19.6 considers potential social and economic effects on Orkney. It is worth highlighting that the local stakeholders had a role in the assessment by participation in the SEWG. This included playing a role in final decisions concerning the sensitivity of receptors, and in providing feedback on the initial results of assessment (with feedback from stakeholders taken on board in the finalisation of assessment results). OIC were represented on the SEWG.
Scottish Ministers (via MD-LOT)	The Developer has summarised potential cumulative effects in section 2.14.7 of the Scoping Report. The Scottish Ministers broadly agree with the projects and activities for consideration however advise that the Developer must consider the cumulative impacts within the SEIA as advised in the representation from the MAU. In line with the representation from the MAU, the Scottish Ministers agree that transboundary effects are not required to be assessed.	An assessment of cumulative effects is provided in section 19.7. The importance of assessing the additionality of the Project is recognised. The assessment utilises standard UK guidance to assess and quantify aspects such as leakage and displacement in the modelling of effects. The agreement on the scoping out of transboundary effects is noted.
Scottish Ministers (via MD-LOT)	With regards to the location of the Development, the Scottish Ministers direct the Developer to the representations from the OFA and MAU regarding the potential loss of fishing grounds, potential reduction in catch sizes due to noise and EMFs, and the subsequent impacts on local companies reliant on commercial species caught within the Proposed Development area. The Scottish Ministers agree that these impacts must be fully assessed and included within the SEIA.	Chapter 14: Commercial fisheries assesses the potential effects on commercial fishing operation. The socio-economics chapter assesses the potential for associated effects on onshore business activities linked to commercial fishing, such as potential supply chain effects and potential effects on fish processing. Chapter 11: Fish and shellfish ecology assesses the potential impacts on commercially important fish stocks from noise and EMF.

CONSULTEE	COMMENT	RESPONSE
MS – Marine Analytical Unit (MAU)	Overall the scoping report is quite good. We welcome the offshore and onshore components being considered and feel that the economic impacts are covered adequately.	This response is noted and welcomed. The assessment undertaken in this chapter with respect to economic impacts has been carried out using the approach described in the scoping report, so is appropriate to the requirements of the MAU.
MS – Marine Analytical Unit (MAU)	However, the social impacts are considered much more superficially, if at all. A project of this scale has the potential to generate social impacts, especially as it is taking place in a remote, rural area. Examples include: • Changes in demographics due to people moving in for work • Changes in employment structure and sector composition affecting the culture of the area • Pressure on services due to demographic changes.	Compared to the approach suggested in the Scoping Report, the approach to the assessment has been amended to consider potential social, cultural, and distributional effects for each stage of the Project. The approach to the assessment of social impacts is explained in section 19.5, with the assessment presented in section 19.6.
MS – Marine Analytical Unit (MAU)	The potential for these changes, and the knock on effects for impacted communities should be explored. See Annex 1 for a list of potential socio-economic impacts. Annex 2 provides an overview of what we would expect in a socio-economic impact assessment.	Noted. The information provided in annexes has been reviewed and has helped to inform the assessment undertaken in this chapter.
MS – Marine Analytical Unit (MAU)	We feel socio-cultural effects should be scoped in for all phases. Socio-cultural effects could be generated in a number of ways e.g. by a change in local industry composition, a change in demographics if, for example, it is mostly young, single men who move in for work.	As noted above, socio-cultural effects have been assessed for all stages, including construction. The scale of potential in-migration of workers during construction is assessed in section 19.6 for a worst case scenario, together with the potential implications for demand for local services such as healthcare and housing.

CONSULTEE	COMMENT	RESPONSE
MS – Marine Analytical Unit (MAU)	The report also states that the construction and decommissioning phases are too short to generate impacts. The report states that the construction phase will last at least 4 years. Socio-cultural effects could certainly be generated in 4 years. If there is likely to be an influx of workers for that 4 years period, the impact assessment should consider where they will stay, the impact on services, how they will integrate with the host population and also whether impacts will be generated when they leave, as well as when they arrive.	Noted. These points have been taken on board in the assessment in section 19.6.
MS – Marine Analytical Unit (MAU)	The report also states that the construction and decommissioning phases are too short to generate impacts. The report states that the construction phase will last at least 4 years. Socio-cultural effects could certainly be generated in 4 years. If there is likely to be an influx of workers for that 4 years period, the impact assessment should consider where they will stay, the impact on services, how they will integrate with the host population and also whether impacts will be generated when they leave, as well as when they arrive.	Noted. These points have been taken on board in the assessment in section 19.6.
MS – Marine Analytical Unit (MAU)	Socio-cultural effects have also been scoped out of the operation and maintenance phase, despite this being a long-term phase. The reason given is that the project is offshore. We would have thought changes in employment etc. and the socio-cultural effects these generate would continue through the O&M phase.	As noted above, socio-cultural effects have been assessed for all stages, including the operation and maintenance stage.
MS – Marine Analytical Unit (MAU)	Socio-cultural effects have not been explored at all in the report, and there has been no data collection, engagement or primary research with communities to determine the potential for these impacts. We, therefore, feel it is presumptuous to scope them out.	Noted. These points have been taken on board in the assessment in section 19.6. Primary research with communities has been undertaken in order to determine potential impacts, including extensive community questionnaire survey, attendance at public events in Caithness, Sutherland and Orkney and establishment of Community Panels.

CONSULTEE	COMMENT	RESPONSE
MS – Marine Analytical Unit (MAU)	We feel that distributional effects should be scoped in for all phases. There is potential for distributional effects to be generated by this sort of project. For example, those with lower income jobs may be priced out of local housing due to higher demand from higher paid workers moving into the area and raising local house prices. it is also possible that an increase in economic growth leads to a reduction in poverty overall, but unequally.	Distributional effects have been included in the assessment. The approach to the assessment of distributional effects is explained in section 19.5, with the assessment presented in section 19.6.
MS – Marine Analytical Unit (MAU)	As above, distributional effects have not been explored at all in the report, and there has been no data collection or engagement with communities to determine the potential for these impacts. We, therefore, feel it is presumptuous to scope them out.	As noted above, distributional effects have been included in the assessment.
MS – Marine Analytical Unit (MAU)	The data sources presented seem good for a desk-based study. We think that primary data should also be collected, particularly for assessing social impacts. It is important to understand the historical and cultural context of an area to assess social impacts. It is also crucial to ask people in the area about their values and priorities in order to understand which changes could generate the biggest impacts. This has not been done for the scoping report, with the result that there is not sufficient evidence to scope out particular impacts, and is not planned for the EIA. We feel that it will not be possible to assess social impacts adequately without collecting primary data.	These comments have been taken factored into the analysis undertaken in this chapter, including section 19.6 and 19.7. The approach to primary data collection – including community and stakeholder consultation – is detailed in section 19.3. Primary research with communities has been undertaken in order to determine potential impacts, including extensive community questionnaire survey, attendance at public events in Caithness, Sutherland and Orkney and establishment of Community Panels.
MS – Marine Analytical Unit (MAU)	Impacts on the other receptors have the potential to generate socio-economic impacts. For example, impacts on commercial fisheries may have social and cultural effects, impacts on culture and heritage could have an effect on tourism (wreck diving is an important attraction in the area), and impacts on seabirds could affect tourism as well.	Chapter 14: Commercial fisheries assesses the potential effects on commercial fishing operation. The socio-economics chapter assesses the potential for associated effects on onshore business activities linked to commercial fishing, such as potential supply chain effects and potential effects on fish processing. The socio-economics chapter also assesses the potential for social and cultural effects, utilising evidence obtained through community consultation and surveys, and interviews with stakeholders, including

CONSULTEE	COMMENT	RESPONSE
		local representatives of communities and industries such as commercial fishing, fish processing, and tourism. The chapter also assesses interactions with tourism and recreation activities, including both land-based and marine recreational activities, including sea diving. This assessment also considers the assessment and conclusions of chapter 12: Land use and other users and chapter 20: Other sea users. Assessment of potential interactions with other local industries such as tourism and commercial fisheries receptors is covered in various places in the assessment, such as in section 19.6 (single Project), section 19.7 (cumulative effects), and section 19.9 (Inter-relationships).
MS – Marine Analytical Unit (MAU)	At the bottom of page 404 the report states "The assessment will also consider the potential implications of the Project for existing local industries, including tourism." We welcome this, and would like to ensure that all existing local industries are considered, including commercial fisheries.	The assessment of potential interactions with other industries has been taken into account, as noted above.
MS – Marine Analytical Unit (MAU)	Although the report states, numerous times, that stakeholder engagement will continue throughout the lifetime of the project, the strategy focuses on the consultation required for the consenting process. It is, therefore, unclear how and when the other groups mentioned will be engaged with.	A Socio-Economic Working Group has been established to facilitate consultation with local stakeholder. Over the EIA process, four quarterly consultation meetings were held. Following successful consent award, the Socio-Economic Working Group (or equivalent) will continue. OWPL will work with the Working Group (or equivalent) to support wider development initiatives such as implementation of the Supply Chain Development Statement (SCDS) and development of a community benefit fund.

CONSULTEE	COMMENT	RESPONSE
MS – Marine Analytical Unit (MAU)	Engagement with community councils, as part of community panels, is welcome, but this section also does not describe how and when these groups will be included in the process. We recommend a participatory approach to socio-economic impact assessments. This has a number of benefits such as producing a more accurate assessment of impacts, and increasing the likelihood of community buy-in to the project. See Annex 2 for further details.	The overarching approach to ongoing community and stakeholder engagement is summarised below in section 19.4.3. Consultation throughout the EIA process has been captured in chapter 6: Stakeholder engagement and the PAC Report (OWPL, 2023). It is worth highlighting that the local stakeholders had a role in the assessment by participation in the SEWG. This included playing a role in final decisions concerning the sensitivity of receptors, and in providing feedback on the initial results of assessment (with feedback from stakeholders taken on board in the finalisation of assessment results).
MS – Marine Analytical Unit (MAU)	Do you agree with the study areas defined? • The approach, assessing impacts over local, regional and national study areas, seems appropriate.	Noted.
MS – Marine Analytical Unit (MAU)	Are the identified data sources appropriate for the baseline characterisation of the local study area? • See paragraph on data and evidence. The data sources are appropriate for desk-based economic assessment. We would recommend collecting primary data, in order to fully assess the social impacts. • Additionally, we would welcome a detailed description of the baseline and the assumptions within it. Is the baseline/counterfactual assumed to be 'as is' position or does it assume some changes that might happen during the appraisal period in the absence of the intervention?. See https://assets.publishing.service.gov.uk/government/uploads/system/uploads/atta	Noted. The socioeconomic baseline is detailed in section 19.4.4.

CONSULTEE	COMMENT	RESPONSE
	chment_data/file/922150/RPC_case_histories_-_counterfactuals_Sep_20.pdf for further details	
MS – Marine Analytical Unit (MAU)	Are there any additional data sources or guidance documents that should be considered? • John Glasson: best-practice-guidance---final-oct-2020.pdf (vattenfall.com) • Frank Vanclay SIA_Guidance_Document_IAIA.pdf	Noted.
MS – Marine Analytical Unit (MAU)	Do you agree that all receptors and impacts have been identified for socio-economics? • See paragraphs above, as well as Annex 1 and 2 for more details on socio-economic impacts that should be considered in an SEIA.	Noted.
MS – Marine Analytical Unit (MAU)	Do you agree that the impacts suggested can be scoped out of the EIA section? • No. We feel that socio-cultural effects and distributional effects should be scoped in for all phases.	Noted. Both of these aspects have been included in the assessment in this chapter.
MS – Marine Analytical Unit (MAU)	Which major energy or other infrastructure projects should be included as part of the cumulative impact assessment? • All major energy and other infrastructure projects should be included as part of the cumulative impact assessment.	Noted. Thes types of developments have been included in the cumulative assessment presented in section 19.7.
MS – Marine Analytical Unit (MAU)	Do you agree with scoping out transboundary impacts? • Yes	Noted.

CONSULTEE	COMMENT	RESPONSE
MS – Marine Analytical Unit (MAU)	Do you agree with the proposed approach assessment? • The approach set out seems appropriate for an economic assessment. A working group for socio-economic and tourism is a good idea. Social impacts are not considered adequately (see paragraphs above). We would recommend involving a social scientist to work alongside an economist on the socio-economic impact assessment. For each economic impact and other relevant effects of the project, the social implications need to be considered.	Noted. The assessment of economic effects has been undertaken fully in line with the approach set out in the scoping report. Social and community impacts have also been fully taken account, based on baseline assessment and extensive community and stakeholder consultation. The social implications have been considered for each economic impact.
MS – Marine Analytical Unit (MAU)	This is the starting point for the economic assessment and the benchmark against which to measure impacts. It is important to gain a good understanding of the communities and stakeholders likely to be affected by the project (i.e., profiling) including their needs and aspirations and any key social issues that may arise as a result of the project. • Develop social and economic profile of the area including: - History, culture and context - Industrial structure i.e., existing businesses in the area - Socio-economic conditions i.e., levels of employment, income etc. - Related industries i.e., fishing, tourism - Local planning policies, where relevant • Select a range of indicators, e.g.: - Employment and unemployment levels - Structure of working age population/skills/qualifications - GVA - Wellbeing	The importance of a comprehensive baseline is recognised. The approach taken to gathering socio-economic data and evidence relies on official and local data sources, supplemented through a process of engagement with local stakeholders and communities to identify and assess additional local information and insight relevant to all aspects of the assessment, including for socio-cultural effects and distributional effects.

CONSULTEE	COMMENT	RESPONSE
	- Community cohesion • Engage with communities to learn of any other important features/indicators to include in baseline. There may be useful local datasets. • Analysis may draw on a combination of existing datasets and primary data.	
MS – Marine Analytical Unit (MAU)	Forecasting the social and economic changes that may result from the project and the impacts these are likely to have on different groups of people. A list of potential socioeconomic impacts can be seen in Table 1. Many of these impacts can be considered from a social and economic perspective. In the following sections we describe in more detail how this could be done. • Identify potential/anticipated socio-economic impacts including: - Impacts related to GVA - Impacts related to employment, skills, and training - Impacts on related industries – tourism, fishing, etc. - Impacts relating to wellbeing - Impacts relating to culture • Identify suitable method for predicting impacts • Collect necessary evidence to conduct analysis • Engage with communities to check predictions and assign significance to predicted impacts • Impact prediction should include - Assessment of different phases of the project (development, construction, operation & maintenance, decommissioning) and phases within phases (early construction, peak construction)	These comments have been taken into account in undertaking the assessment.

CONSULTEE	COMMENT	RESPONSE
	- Consideration of transition between phases • Impacts may be direct, indirect, and induced • It is important to look at the distribution of impacts at the national, regional, and local level, and across different groups (e.g., businesses, individuals, income levels, organisation, women, youth, elderly, disadvantaged etc.).	
MS – Marine Analytical Unit (MAU)	Other economic considerations may include: • Displacement - an assessment of the effect of the intervention on the structure of local factor and final goods markets • Substitution - where the intervention causes an employed factor to be replaced by a currently unemployed factor • Deadweight - This is the net impact, after taking into account what would have happened in the absence of the intervention • Cumulative effects - effects from multiple pressures and/or activities	The importance of assessing the additionality of the Project is recognised. The assessment utilises standard UK guidance to assess and quantify aspects such as leakage and displacement in the modelling of effects.
MS – Marine Analytical Unit (MAU)	Identifying ways of mitigating potential negative impacts and maximising positive opportunities. • Engage with communities to develop strategy for enhancing benefits and mitigating against impacts • This may involve Community Benefit Agreement (CBA) • Care should be taken to ensure that CBA and any associated funds should have accessible application procedures so that allocated funds can be used	Methods to both realise the potential for beneficial effects and mitigate the potential for adverse effects have been discussed with stakeholders, including in the SEWG forum. The Project are establishing a Community Benefit Fund (CBF) to be shared across communities in Caithness, Sutherland and Orkney. Short and long-term priorities have been identified, that will continue to evolve as the Project progresses. Further details are provided in section 19.5.4.

CONSULTEE	COMMENT	RESPONSE
MS – Marine Analytical Unit (MAU)	Developing a monitoring and management plan to track and manage implementation, success of mitigation actions, and any unanticipated social changes, especially negative impacts. • Develop management plan and monitoring strategy • Engage with communities – especially with regard to both: - Communities may have concerns that they particularly want to be monitored - There may be local considerations regarding timing of monitoring and methods used e.g., access to internet for particular groups • Link management plant to governance structures so that communities can continue to engage with the project.	The proposed approach to monitoring arrangements for the Project are outlines in section 19.11.
Highlands and Islands Enterprise	Many thanks for sharing the Offshore Wind Power Ltd scoping report for our consideration and comment. HIE don't propose to respond to this on the basis that we expect our information requirements will consistently be met by even the minimum socio economic work scopes as is the case with this one. Other partners may desire detail in other areas of socio economic impact (such as those which have been scoped out by OWPL) and we'll encourage those partners to review and respond accordingly. HIE will adopt this approach to future requests for views on EIA scoping i.e. "nil return" but will encourage local partners to highlight where they anticipate information gaps with the scoping reports as they're submitted by successful offshore wind developers.	HIE have been engaged with the Project throughout the EIA, via the Socio Economic Working Group, which has focused on socio economic impacts associated with the proposed Project including the consideration of data gaps as highlighted by HIE partners. OWPL has also engaged with HIE on other topics such as supply chain.
Orkney Islands Council	The joint consideration of onshore and offshore socio-economic impacts is supported. The completion of the socio-economic baseline on a regional basis should not mean a high-level assessment that does not provide an in depth understanding of the local context. The socio-economic assessment should provide a detailed baseline of the Orkney economy, including engagement with local stakeholders, businesses, and communities to inform the baseline and impact assessment.	A detailed baseline of the Orkney economy, including engagement with local stakeholders, businesses, including engagement through the SEWG, and communities to inform the baseline and impact assessment has been included in this chapter.

CONSULTEE		COMMENT	RESPONSE
Orkney Council	Islands	Table 2-83 Summary of Key Datasets and Reports should include: • Orkney Economic Review 2017, https://www.orkney.gov.uk/Files/Business-and-Trade/Economic_Review/Economic_Review_2017.pdf • Orkney Economic Review 2018, https://www.orkney.gov.uk/Files/Business-and-Trade/Economic_Review/Economic_Review_2018.pdf • Highlands and Islands Area profile 2020, Orkney, https://www.hie.co.uk/media/10595/orkney-area-profile-2020.pdf • Orkney Islands Economic Review 2020, https://fraserofallanderinstitute.wpcomstaging.com/wp-content/uploads/2020/09/Orkney-Islands-Economic-Review_.pdf • Orkney Islands Council Area Profile, https://www.nrscotland.gov.uk/files/statistics/council-area-data-sheets/orkney-islands-council-profile.html	Noted. These data sources have been reviewed and relevant data has informed the baseline assessment in section 19.4.
Orkney Council	Islands	OIC Economic Development should be consulted to inform the baseline and assessment of socio-economic impacts.	The OIC Economic Development team is a participant in the SEWG established to help facilitate the assessment for socio-economics.
		The key features of the regional study area economy which are likely to require consideration within the EIA should include an in-depth appraisal of the local supply chain in Orkney, including engagement with local businesses.	A Supply Chain Development Statement (SCDS) was prepared for the Project and submitted to Crown Estates Scotland (CES) in July 2021 as part of the ScotWind leasing process.[6] The SCDS sets out the commitment by OWPL to a £105 million investment in developing supply chain capacity within the UK. This includes over £9 million

[6] *The SCDS can be found at: Supply Chain for the West of Orkney Windfarm.*

CONSULTEE		COMMENT	RESPONSE
			expected to be invested in upgrading ports and harbours in Caithness and Orkney. OWPL has set a target of 40% Project content sourced from Scotland, with a further 20% elsewhere in the UK. A programme of events is being delivered to raise awareness of opportunities available to potential participants in the Project supply chain. The socio-economics assessment in this chapter takes on board information contained in the SCDS, as well as responses of local stakeholders via the SEWG.
Orkney Council	**Islands**	The key features of the regional study area economy which are likely to require consideration within the EIA should include an in-depth appraisal of the local supply chain in Orkney, including engagement with local businesses.	Noted. Local supply chain engagement has already commenced as noted above.
Orkney Council	**Islands**	The tourism expenditure figures overly skew the importance of tourism in THC area compared to Orkney. These figures have been compiled using different methodologies	Noted. Additional tourism information has been supplied by OIC for use in the baseline characterisation in section 19.4.
Orkney Council	**Islands**	In advance of a more detailed assessment of the local workforce and supply chain, it is considered premature to reach the interim conclusion that a higher than usual proportion of the temporary construction phase workforce may need to be brought into the local area to work on the Project. There is a need for a skills audit and training provision assessment to upskill the local workforce, where appropriate, and maximise local economic benefits. The project could also support capacity building within the local supply chain to meet targets for local supply chain utilisation.	OWPL have earmarked investment to develop the skills of the workforce. OWPL have also entered into a partnership with Scottish Government, UHI, and other windfarm developers to promote STEM careers to school children in THC and OIC areas as well as other parts of Scotland.[7] These initiatives are taken into account in the assessment of socio-economic effects as measures of embedded mitigation.

[7] *STEM careers are jobs that require qualifications in STEM subjects, which are those that fall under the heading of science, technology, engineering and/or mathematics.*

CONSULTEE		COMMENT	RESPONSE
Orkney Council	Islands	Table 2-87, states that tourism is confirmed to be an important industry locally, especially in the THC area. It should be acknowledged that tourism is an important sector in Orkney.	The importance of tourism to Orkney is acknowledged and factored into the assessment in this chapter.
Orkney Council	Islands	This section states that 'It is expected that the most significant impacts on socio-economics receptors – such as direct jobs and GVA created directly by the Project, and indirectly through supply chain stimulus – would be positive in their nature. These impacts would therefore not require mitigation'. The indirect effects of job creation on local housing, services, infrastructure etc in Orkney may require mitigation. Workforce displacement effects on existing sectors may require mitigation. Training and upskilling to reach targets for local economic benefit could be key mitigation	The potential for the Project to generate adverse effects on housing, local services and infrastructure is taken into account in the assessment for all areas including Orkney. Displacement effects on industries including commercial fisheries and tourism is also taken into account. The developer is committed to investment in skills and training in order to assist in the securing of the economic benefits that stand to be delivered by the Project.
Orkney Council	Islands	The Project has already stated publicly that they are committed to achieving 40% of content within Scotland, and 60% within the UK. The socio-economic assessment should be informed by targets for local economic benefits to host communities including Orkney. Mitigation should be put in place to meet these local economic benefit targets.	The developer has committed substantial resources to ensure that Scottish businesses (including those in Highland and Orkney) have opportunities to participate in the supply chain for the Project. Details of investment and collaborations with partners to help secure local content are set out in Table 19-31.
Orkney Council	Islands	Identified impacts should include: • Direct employment impacts • Displacement effects on the local workforce and supply chain e.g. workers from other sectors moving to offshore wind related employment or local suppliers (e.g. freight) not being able to service existing sectors/customers.	Quantification of direct employment impacts and taking into account displacement effects is an integral part of the assessment, with results set out in section 19.6 of this chapter.
Orkney Council	Islands	Impact on demand for housing and local services could also occur from the project operational phase in addition to the construction and decommissioning phases.	This is an integral part of the assessment with results set out in section 19.6.

CONSULTEE		COMMENT	RESPONSE
Orkney Council	Islands	The assessment should quantity benefits such as local employment opportunities, but also account for the potential for displacement EFFECTS ON EXISTING LOCAL BUSINESSES.	As noted above, displacement effects on local labour markets and industries has been factored into the assessment.
Orkney Council	Islands	Consultation should be undertaken with: • HIE • Orkney College UHI • Heriot Watt Orkney Campus, • Aspire Orkney.	Consultations have been undertaken with HIE and representatives of Aspire Orkney. Specific consultations were not undertaken with UHI and Heriot Watt Orkney Campus, but the assessment has taken into account the collaborative agreement developed between OWPL and other offshore developers and local higher education providers, including UHI. Other consultations undertaken with Orkney stakeholders include those undertaken with: • OIC; • North Ronaldsay Development Trust; • Orkney Fishermen's Society; • Visit Scotland – Orkney manager; • HIE – Enterprise Area Manager (Orkney); and • Graemsay, Hoy and Walls Community Council. Additionally, OWPL are sponsoring a PhD and Heriot-Watt's International Centre for Island Technology based in Orkney.
Orkney Council	Islands	The economic impact model proposed to enable an assessment of local, regional, Scotland, UK, outside of UK economic effects should include the consideration of displacement effects. The model should also consider capital investment in wider infrastructure directly related to the project e.g. harbours.	As noted above, displacement effects on local labour markets and industries has been factored into the assessment.

CONSULTEE	COMMENT	RESPONSE
Orkney Islands Council	The Hoy RSPB Nature Reserve needs to be considered and assessed as a tourism resource.	Assessment of potential interactions with local tourism receptors is covered by the assessment, such as in section 19.6.
Orkney Islands Council	Wea Fea, Scad Head and Rinnigal have world war historic assets that should be considered and assessed as part of the world war heritage tourism resource.	Assessment of potential interactions with local tourism receptors is covered by the assessment, such as in section 19.6. Wea Fea, Scad Head and Rinnigal are located outwith the Zone of Theoretical Visibility (ZTV) for the Project. Additionally, the current consent application does not include the connection to the Flotta Hydrogen Hub, therefore, there has been no need to assess these locations as world war heritage tourism resources.
Orkney Islands Council	Crockness Martello Tower should be considered and assessed as part of Hoy's tourism heritage resource.	Assessment of potential interactions with local tourism receptors is covered by the assessment, such as in section 19.6. Crockness Martello Tower is located outwith the ZTV for the Project. Additionally, the current consent application does not include the connection to the Flotta Hydrogen Hub, therefore, there has been no need to assess this location as part of Hoy's heritage tourism resources.
Orkney Fisheries Association	Do you agree that all receptors and impacts have been identified for socio-economics? This section does not adequately address the socio-economic impact on vessels from a potential loss of fishing grounds, or the potential decreased catches due to impacts such as noise and EMF on catches. The impact of the development on commercial species such as crab, as well as the potential for the loss of fishing grounds may have an impact on the local crab processors who rely heavily on the vessels fishing within the development area.	An assessment of the direct socio-economic impacts of the offshore Project is provided in chapter 14: Commercial fisheries. Indirect socio-economic impacts associated with any impacts on commercial fisheries receptors, such as downstream effects on onshore processing facilities are assessed in this chapter. The assessment of effects on fish and shellfish ecology, including commercial species is provided in chapter 11: Fish and shellfish ecology, Offshore EIA Report. This addresses potential impacts from noise and

CONSULTEE	COMMENT	RESPONSE
		EMF. The indirect socio-economic impacts on commercial fisheries receptors is summarised in chapter 14: Commercial fisheries.
The Highland Council – Scoping Opinion	The EIAR should estimate who may be affected by the development, in all or in part, which may require individual households to be identified, local communities or a wider socio economic groupings such as tourists and tourist related businesses, recreational groups, economically active, etc. The application should include relevant economic information connected with the project, including the potential number of jobs, and economic activity associated with the procurement, construction, operation, and decommissioning of the development.	The assessment includes consideration of the potential impact of the Project on a range of sectors, recreation users, and spatial areas. Assessment of individuals or households who might be affected is likely to be constrained by Data Protection legislation so is not included in the assessment. The assessment covers a wide range of recreational activities, including marine and coastal activities such as SCUBA diving, surfing, canoeing, kayaking, coastal climbing and coasteering, and wildlife watching.
The Highland Council – Scoping Opinion	Estimations of who may be affected by the development, in all or in part, which may require individual households to be identified, local communities or a wider socio-economic groupings such as tourists and tourist related businesses, recreational groups, economically active, etc should be included. The application should include relevant economic information connected with the project, including the potential number of jobs, and economic activity associated with the procurement, construction, operation, and decommissioning of the development. In this regard wind farm and transmission network development experience in this location should be used to help set the basis of likely impact. This should set out the impact on the regional and local economy, not just the national economy. Any mitigation proposed should also address impacts on the regional and local economy.	The approach taken to identifying the groups that could be affected by the Project are as described above. The assessment provides a quantification of employment and economic output (GVA) effects expected for different spatial areas for the construction and operation and maintenance stage of the Project.
The Highland Council – Scoping Opinion	The developer should also consider the potential for use of alternative fuels to be used in the construction of the proposed development. The Council also encourage the inclusion of electric car charging facilities within all new developments. A strategy for the provision of charging points within the development should be submitted with the application, albeit these would be located onshore.	The nature of the Project infrastructure to be constructed onshore does not lend itself to the provision of public electric vehicle charging points. However, the Project will work with both THC and OIC in the development of visitor information stops from which the offshore Project will be visible. These stops will include provision of Project

CONSULTEE	COMMENT	RESPONSE
		information boards and electric vehicle charging points amongst other amenities.
Visit Scotland	The importance of this element to tourism in Scotland cannot be underestimated. The character and visual amenity value of Scotland's landscapes is a key driver of our tourism product: a large majority of visitors to Scotland come because of the landscape, scenery and the wider environment, which supports important visitor activities such as walking, cycling, wildlife watching and visiting historic sites.	Noted. No specific response is required.
Visit Scotland	Scenery and the natural environment have become the two most important factors for visitors in recent years when choosing a holiday location.	Noted. No specific response is required.
Visit Scotland	The importance of this element to tourism in Scotland cannot be underestimated. The character and visual amenity value of Scotland's landscapes is a key driver of our tourism product: a large majority of visitors to Scotland come because of the landscape, scenery, and the wider environment, which supports important visitor activities such as walking, cycling, wildlife watching and visiting historic sites.	Noted. No specific response is required.
Visit Scotland	The VisitScotland Visitor Experience Survey (2015/16) confirms the basis of this argument with its ranking of the key factors influencing visitors when choosing Scotland as a holiday location. In this study, over half of visitors rated scenery and the natural environment as the main reason for visiting Scotland. Full details of the Visitor Experience Survey can be found on the organisation's corporate website, here: https://www.visitscotland.org/binaries/content/assets/dot-org/pdf/research-papers/scotland-visitor-survey-2015-16-full.pdf	Noted. This evidence has been reviewed has informed the baseline characterisation and the approach to the assessment of potential effects on tourism receptors in this chapter.

CONSULTEE	COMMENT	RESPONSE
Visit Scotland	We would suggest that full consideration is also given to the Scottish Government's 2008 research on the impact of wind farms on tourism. In its report, you can find recommendations for planning authorities which could help to minimise any negative effects of wind farms on the tourism industry. The report also highlights a request, as part of the planning process, to provide a tourism impact statement as part of the Environmental Impact Analysis. Planning authorities should also consider the following factors to ensure that any adverse local impacts on tourism are minimised: • The number of tourists travelling past en route elsewhere; • The views from accommodation in the area; • The relative scale of tourism impact i.e. local and national; • The potential positives associated with the development; and • The views of tourist organisations, i.e. local tourist businesses. The full study can be found at www.scotland.gov.uk/Publications/2008/03/07113507/1.	Noted. This evidence has been reviewed has informed the baseline characterisation and the approach to the assessment of potential effects on tourism receptors in this chapter.
Visit Scotland	Given the aforementioned importance of Scottish tourism to the economy, and of Scotland's landscape in attracting visitors to Scotland, VisitScotland would strongly recommend any potential detrimental impact of the proposed development on tourism - whether visually, environmentally, and economically - be identified and considered in full. This includes when taking decisions over turbine height and number.	Noted. The assessment undertaken here takes into account both the potential for positive effects on tourism from the Project (such as additional demand for accommodation and food & drink services outside of the main tourism season) as well as the potential adverse effects (such as displacement effects on tourism attractions and deterrence of visitors). The assessment has also factored in the results of other chapters, including chapter 18: Seascape, landscape and visual assessment and Onshore EIA Report chapter 12: Land use and other users.
Visit Scotland	VisitScotland strongly agrees with the advice of the Scottish Government –the importance of tourism impact statements should not be diminished, and that, for each site considered, an	The assessment of potential interactions with tourism has considered relevant baseline data from sources such as the Office for National

CONSULTEE	COMMENT	RESPONSE
	independent tourism impact assessment should be carried out. This assessment should be geographically sensitive and should consider the potential impact on any tourism offerings in the vicinity	Statistics (ONS) as well as various Scarborough Tourism Economic Activity Monitor (STEAM) reports commissioned by the local authorities. The views of a sample of local tourism industry businesses and other industry representatives has been obtained via structured interviews. The opinions of visitors to the area have been obtained via structured interviews (using questionnaires) undertaken at events that attract visitors, such as the Halkirk Highland Games and the Durness Highland Gathering and through the community questionnaire. Visit Scotland were also provided input to the scope and results of the tourism impact assessment via their involvement in the Socioeconomic working group.
Visit Scotland	VisitScotland would also urge consideration of the specific concerns raised above relating to the impact any perceived proliferation of developments may have on the local tourism industry, and therefore the local economy.	Consideration of the potential cumulative impacts of the Project in combination with other plans and projects (developments) (including other offshore renewable energy developments) is considered in section 19.7.

19.4 Baseline characterisation

This section outlines the current baseline for socio-economics. The baseline characterisation focuses on data and evidence relevant to the following indicators and themes:

- Demographic characteristics – size and structure of the population of the socio-economics study area (as defined in section 19.4.1);
- Labour supply potential within the socio-economics study area;
- Size and structure of the business base within the socio-economics study area;
- The relative importance of industries that have the potential for either positive or negative interactions with the Project, such as construction, tourism, and commercial fisheries;
- Economic output performance, as measured by GVA;
- Measures of community vitality (such as demand for housing and public services);
- The volume and value of tourism activity in the socio-economics study area;
- Availability and use of recreation activities within the socio-economics study area;
- Socio-cultural matters – the potential for the Project to generate effects relating to social problems, community stress and cohesion, community character, lifestyle, and quality of life, and so on; and
- Distributional effects – the potential for the Project to generate effects on specific groups in society (e.g., groups defined by age, gender, ethnicity, language, etc.).

The approach to the baseline characterisation is a mix of desk-based research, consultations, and primary data collection:

- Desk-based research was undertaken to obtain current and trend data across a range of relevant indicators, such as demographic data and projections, labour market data, business demographic data, and local data on aspects such as demand for housing and education, provision for healthcare, data on onshore activities linked to commercial fisheries, and data on the volume and value of tourism, etc.;
- Approaches were made by telephone, email, and other methods with organisations such as the local authorities, NHS Orkney and NHS Highland, and local colleges to supplement data available from on-line sources and to gain additional insights on expected future demand for services; and
- Information on opinions concerning the Project held by (1) visitors and (2) the local community were obtained via a structured survey process. Further details of the method and approach used to gather responses are provided in section 19.4.3.

19.4.1 Study area

The selection of a study area for the impact assessment for socio-economics takes account of the spatial scale at which impacts on different receptors are likely to occur. This is likely to vary across different receptors and therefore requires a spatial hierarchy.

Firstly, given the importance of the offshore renewables sector to the UK and Scottish Government economic policies (as summarised in chapter 2: Need for the Project and also in section 19.2 of this chapter) it is relevant to consider the potential effects of the Project at the spatial level of both the UK and Scotland. Therefore, for certain indicators,

it is relevant to present baseline information for the UK and Scotland. These national data also provide a benchmark against which local baseline data can be compared.

Apart from the UK and Scotland, more localised areas are required for baselining purposes and for presenting estimates of the potential impact of the Project. The principal local socio-economics study areas for the assessment of the socio-economics topic are the Highland and Orkney local authority areas. These areas are directly relevant to the potential selection of ports and harbours for use during the construction, operation and maintenance, and decommissioning stages of the offshore Project, and also for the potential supply of other types of content and services required for the Project. The THC area is also the intended location for the onshore electricity sub-station for the Project. It is therefore an area appropriate for consideration of potential socio-economic impacts – such as jobs and GVA – associated with the various stages of the Project.

As the spatial area covered by THC is very extensive, for some socio-economic indicators – such as labour market indicators, and also for tourism activity – it is also useful to consider socio-economic baseline data for smaller, more localised spatial areas.

Wherever possible, Caithness and Sutherland has been used in the baseline as the preferred spatial area for more localised data within the wider THC area. However, different sources of information are used in the baseline assessment to provide a wider set of local indicators relevant to socio-economics. These different sources use slightly different definitions of the local area: for example, some sources provide data for the Caithness area only, whilst others provide data for an area that includes both Caithness and Sutherland. The assessment utilises the most relevant and current local baseline data, even if the geographical area covered for any specific indicator is not identical to other indicators.

It is also the case that for some economic indicators – such as average earnings and business start-ups – there are no data available for areas that are below local authority areas. Hence, for such datasets, there are no available data that can be reported for Caithness (or Caithness and Sutherland combined).

As noted in section 19.1, the MAU have recently published a report entitled *Defining 'local area' for assessing impact of offshore renewables and other marine developments* (MAU, June 2022). The report provides guidance on the selection of areas for assessment of social, cultural, and distributional impacts, in particular the recommendation that such effects be assessed in very localised areas where such effects might be concentrated. For projects such as the West of Orkney Windfarm, such epicentres are considered likely to comprise of the following types of locations:

- Construction or operational bases and ports;
- Export cable landfall sites; and
- Onshore substation site(s).

For example, the following proposed sites have been identified as being potentially relevant to the assessment of localised effects:

- Two offshore export cable landfall options (Greeny Geo and/or Crosskirk);
- The proposed Scapa Deep Water Quay (which is a candidate for the use as the construction for the Project);
- The Port of Scrabster (which is a candidate for use as the operational port for the Project); and
- The proposed Spittal substation.

Three spatial areas have been used to assess the potential socio-cultural and distributional effects of the Project. These are:

- Caithness;
- North Sutherland; and
- Orkney.

For clarity, the hierarchy of areas is shown in Figure 19-1.

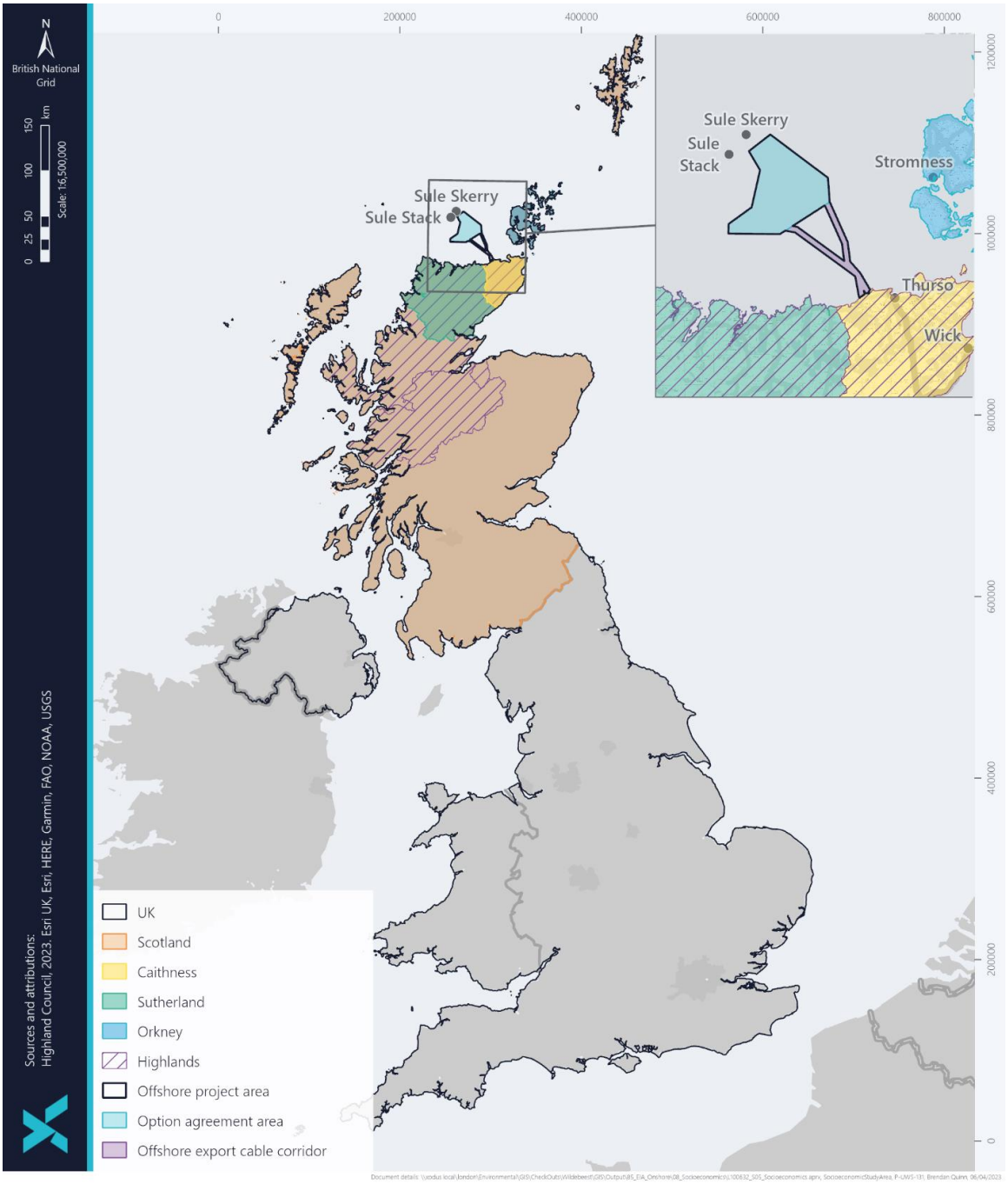

Figure 19-1 Study areas for socio-economics assessment

19.4.2 Data sources

The data sets and reports used to inform the baseline characterisation for socio-economics are summarised in Table 19-4 below.

Table 19-4 Summary of key datasets and reports

INDICATOR	SOURCE	YEAR	AUTHOR
Population size and structure	Nomis - Official Census and Labour Market Statistics - Nomis - Official Census and Labour Market Statistics (nomisweb.co.uk)	2020	ONS
Population projections	Sub-National Population Projections | National Records of Scotland (nrscotland.gov.uk)	2020	NRS
Employment and economic activity	Labour Market Profile - Nomis - Official Census and Labour Market Statistics (nomisweb.co.uk)	2019	ONS
Economic output (GVA)	Regional Gross Value Added (balanced) by industry: local authorities by NUTS1 region - Office for National Statistics (ons.gov.uk)	2019	ONS
Business demography	Nomis - Official Census and Labour Market Statistics - Nomis - Official Census and Labour Market Statistics (nomisweb.co.uk)	2019	ONS
Employee jobs by industry	Nomis - Official Census and Labour Market Statistics - Nomis - Official Census and Labour Market Statistics (nomisweb.co.uk)	2019	ONS
Qualifications of resident population	Labour Market Profile - Nomis - Official Census and Labour Market Statistics (nomisweb.co.uk)	2020/21	ONS
Earnings	Annual Survey of Hours and Earnings (ASHE) - Office for National Statistics (ons.gov.uk)	2019	ONS
Housing	Highland Housing Need and Demand Assessment (draft, 2021) Housing land information | Housing land information | The Highland Council	2021	THC

INDICATOR	SOURCE	YEAR	AUTHOR
Housing	Orkney Local Housing Strategy 2017-2022 (drawing from 2016/17 HDNA) Local Housing Strategy 2017-2022 (orkney.gov.uk)	2017	OIC
Education	Various sources used from local authority websites and other data supplied on request from the local authorities.	2021/22 2020/21	THC OIC
Healthcare	The majority of data was supplied on request from Public Health Scotland and NHS Boards.	2021	Public Health Scotland; NHS Highland; NHS Orkney, GP websites
Tourism	STEAM reports for Caithness, Sutherland, and Highland areas supplied on request by THC[8] Orkney STEAM reports and other Orkney tourism data supplied on request by OIC.	2019 2019-2021	THC OIC
Commercial fisheries (onshore activities)	Business Register and Employment survey Nomis - Official Census and Labour Market Statistics - Nomis - Official Census and Labour Market Statistics (nomisweb.co.uk) Value of fishing landed in local harbours UK sea fisheries annual statistics report 2021 - GOV.UK (www.gov.uk)	2019 2015-2019	ONS MMO
Socio-cultural	Scottish Index of Multiple Deprivation Scottish Index of Multiple Deprivation 2020 - gov.scot (www.gov.scot) My Life in the Highlands & Islands survey My life survey | Highlands and Islands Enterprise | HIE Evidence from the bespoke community survey questionnaires gathered as part of the community engagement process.	2020d 2022 2022	Scottish Government HIE OWPL
Distributional	Evidence from local housing strategies – Orkney	2017	OIC

[8] STEAM is an acronym for the Scarborough Tourism Economic Activity Monitor. STEAM is a tourism impact monitoring and evaluation tool used by many local authorities across the UK, including THC and OIC.

INDICATOR	SOURCE	YEAR	AUTHOR
	Evidence from local housing strategies – Highland	2021	THC
	Data on average earnings (ASHE)	2021	ONS
	Labour Market Profile - Nomis - Official Census and Labour Market Statistics (nomisweb.co.uk)		
	Evidence from the bespoke community questionnaire survey gathered as part of the community engagement process.	2022	OWPL

In addition to the indicators listed in the previous sub-section, additional insights on local receptors have been obtained from engagement with stakeholders, both via the SEWG forum, and also through consultations with specific organisations.

Consultation with stakeholders has occurred with respect to the Project as described in chapter 6: Stakeholder engagement. Engagement with local stakeholder organisations yielded useful information on current and likely future levels of demand for and provision for local services, such as schooling, childcare, healthcare, and housing.

19.4.3 Project site-specific surveys and other tools

Over and above published data, additional insights on local receptors have been obtained from individuals and groups in the community.

The Community Engagement Plan (CEP) (OWPL, 2022) established for the Project has been designed to consult with a range of specific community groups, including:

- Community Councils;
- People who have formed themselves into any groups or groups for the purpose of objecting to or supporting the Project;
- People identified as 'hard to reach' or 'seldom heard'; and
- People with a particular perspective (e.g., young people).

Methods used to generate community feedback on the Project have included the following:

- Formal consultations events. Use of formal public exhibitions at appropriate stages, such as following the award of exclusivity agreements through the ScotWind Leasing Round, and at the Pre-Application Consultation stage;
- Informal events. Use of less formal community events, designed to reach a broader demographic than those who might be expected to attend formal events. This included a Project presence at a calendar of widely attended community events (such as Highland Games and agricultural shows) held in the local areas of Caithness, Sutherland, and Orkney. These events involved provision of Project information using a range of media, such as leaflets and other literature, exhibitions, and videos. The events also provided an opportunity for people from the community to ask questions and provide feedback on the proposals. Members of the Project team were also invited to attend the Orkney Climate Festival Community Café;

- Community Panels. Three community panels were established covering Orkney, Caithness, and Sutherland. The Panels provide a forum for Community Councils and other community-based organisations to discuss and provide feedback on the Project proposals. The community panels also had an important role in the development of the CEP;
- Virtual exhibition. A dedicated Project website provides a portal for anyone to find out more information about the Project[9], with access to the Virtual Exhibition which provides information about the Project for people who may have been unable to attend a consultation event in person[10]. The Virtual Exhibition remained live throughout the Pre-Application Consultation period and was regularly updated with new content, as appropriate; and
- Communications. Channels for communication about the Project – including details of forthcoming events include newsletters, Royal Mail leaflet drop informing residents of upcoming consultation events, leaflets left in public places such as libraries, post offices, and community halls etc., posters, exhibition materials, press releases and articles in local newspapers, and updates via the engagement portal. A dedicated contact point for the West of Orkney Windfarm was established prior to the first round of consultation in March 2022, enabling stakeholders to easily contact our team via the general query email mailbox, telephone, and by post.

In order to gather views and feedback on the Project in a systematic way, a questionnaire survey was designed. Attendees at all events have been encouraged to complete the community questionnaire. Results of the questionnaire survey are presented in section 19.4.4.10.3. Further questionnaires were launched during the first PAC event in May 2023: one focusing on the onshore infrastructure associated with the Project and a second seeking ideas around the proposed West of Orkney Windfarm community benefit fund.

19.4.4 Existing baseline

A review of available data sources and relevant literature, augmented by consultations with stakeholders and the community questionnaire survey has been undertaken to describe the current baseline environment for socio-economics.

19.4.4.1 Population

Based on Scottish Government mid-year population estimates data series, the estimated population of the Highland area (i.e. the area covered by THC local authority area) at the midpoint of 2020 was just over 235,400. Of these, around 38,700 resided in Caithness and Sutherland (with just under 26,500 residing in Caithness). The population of Orkney in 2020 was estimated to be 22,400. Table 19-5 below provides data on population trends.

The population of Caithness and Sutherland has declined by an estimated 200 (0.6%) since 2005, but it is worth noting that since 2010 the rate of population decline is steeper (1,100 persons, 11.3%).

[9] *West of Orkney Windfarm.*

[10] *Virtual Exhibition - West of Orkney Windfarm.*

Across the Highland area as a whole, since 2005 the population has grown by 17,400 (8.0%), but most of this increase occurred between 2005 and 2010.

The population of the Orkney has grown over the 2005-2020 period, by a total of about 2,300 persons (11.6%). This is a greater rate of change than experienced by either Scotland (7.0%) or the UK (11.0%) over the 2005-2020 period.

Compared to the population of Scotland as a whole, the population of both Orkney, the Highland region, and the Caithness and Sutherland sub-area is, on average, older: for example, data for 2020 reveals that 24.2% of the Caithness population is aged 65 years or older, compared to 19.3% for Scotland. The equivalent proportion for the Highland region is 22.9%, whilst for Orkney it is 24.3%.

Table 19-5 Population trends, 2005-2020 ('000s)

AREA	2005 ('000)	2010 ('000)	2015 ('000)	2020 ('000)	2005-2020 CHANGE ('000)	2005-2020 CHANGE (%)
Caithness and Sutherland	38.9	39.8	39.2	38.7	-0.2	-0.6%
Highland	218.1	230.7	234.1	235.4	17.4	8.0%
Orkney	20.1	21.2	21.7	22.4	2.3	11.6%
Scotland	5,110	5,262	5,373	5,466	356	7.0%
UK	60,413	62,759	65,110	67,081	6,668	11.0%

Sources: Scottish and UK Government Mid-Year Population Estimates

Moreover, the proportion of the population that is defined by the Office of National Statistics (ONS) as being of working age (16 to 64 years) is also lower in both Caithness and Sutherland (59.8%), the Highland area (60.7%), and Orkney (also 59.8%) compared to Scotland (63.9%).

19.4.4.2 Labour market activity indicators

19.4.4.2.1 Employment and economic activity rates

Labour market indicators are used to provide a measure of the potential spare capacity of labour markets at a national and local level.

Table 19-6 below provides estimates of local labour market activity for January-December 2019 (i.e., the pre-Covid period), compared to benchmarks for Scotland and the UK using two widely used indicators:[11]

- Employment rate: The proportion of the working age population (16 to 64 years) that is in employment; and
- Economic activity rate: The proportion of the working-age population that is either in employment or is not employed but is actively seeking and available for work.

Table 19-6 Key labour market indicators: employment rate and economic activity rate

AREA	IN EMPLOYMENT ('000)	EMPLOYMENT RATE (%)	ECONOMICALLY ACTIVE ('000)	ECONOMIC ACTIVITY RATE (%)
Caithness	9.8	73.7	10.0	75.2
Highland	110.1	78.7	113.6	81.2
Orkney	12.1	87.1	12.3	89.1
Scotland	2,574.8	74.8	2,669.4	77.5
UK	31,266.4	75.6	32,556.7	78.8

Source: ONS (Jan 2019- Dec 2019) Annual Population Survey

Over the full calendar year prior to the advent of the Covid-19 pandemic, the employment rate in the Highland area (78.7%) is higher than for Scotland (74.8%), but this is not the case more locally in Caithness, where the employment rate is slightly lower (73.7%). A local employment rate that is significantly below the national average may be indicative of a deficit of employment opportunities in that local labour market.

The employment rate in Orkney for the pre-Covid period was 87.1%, which was one of the highest rates in any local authority of Scotland for the year 2019. However, it should be noted that the employment rate in Orkney appears to have deteriorated more recently, with the average rate falling from 84.0% (12 months up to March 2021) to 81.7% (12 months up to September 2022).

[11] *The Annual Population Survey from the ONS is the most reliable source of insight into labour market characteristics at a local authority level. Data for 2019 is used here as it is the most recent full calendar year for which data is available that is not affected by the effects of Covid-19 and associated Government responses.*

19.4.4.2.2 Workforce qualifications

The ONS Annual Population Survey provides information on the workplace qualifications held by working age populations. The data in Table 19-7 below indicate that the proportion of the workforce with qualifications equivalent to National Vocational Qualification (NVQ) Level 4/4+ (i.e., NVQ 4 or higher, which equates to degree level or higher) is just under 32% in Caithness, nearly 44% across the Highland area, and 44.6% in Orkney. The corresponding rate for Scotland is 45.3%. Compared to benchmark areas, the qualifications base in Caithness is weighted heavily towards trades qualifications (such as advanced apprenticeships, which tend to be represented by NVQ3) rather than professional skills (which tend to be represented by NVQ 4/4+).

Table 19-7 Workforce qualification levels, 2019

AREA	NVQ4/4+	NVQ 3	NVQ 2	NVQ1	OTHER QUALIFICATIONS	NO QUALIFICATIONS
Caithness and Sutherland	31.6%	25.3%	10.7%	6.6%	10.6%	15.1%
Highland	43.7%	17.1%	18.1%	7.4%	6.8%	6.9%
Orkney	44.6%	15.3%	17.3%	10.9%	No data available	No data available
Scotland	45.3%	15.5%	14.8%	7.9%	6.7%	9.8%
UK	40.2%	18.2%	17.2%	9.9%	6.6%	7.9%

Source: ONS (Jan 2019- Dec 2019) Annual Population Survey

19.4.4.3 Employment by industry

The structure of employment by industry is a source of insight into the potential ability of businesses and workforces in an area to supply goods, business services, and labour supply services to a development or project.

The ONS Business Register and Employment Survey (BRES, 2019) found that there were around 114,400 employee jobs located in the Highland area. The same source identified around 11,200 employee jobs in Orkney.

Table 19-8 below provides information on the principal sectoral sources of employee jobs in each area in 2019. The data presented here is the proportionate contribution of each sector, rather than the absolute number of jobs. Note that the BRES survey data from ONS does not cover Northern Ireland, so the benchmark area used in this table is

Great Britain (GB).[12] Local hotspots (areas with at least twice the GB rate of representation of employment) and cold spots (areas with less than half the GB rate of representation of employment) are represented by amber and pale blue colours in the table.

Table 19-8 Employees in employment by sector (%)

SECTOR	CAITHNESS AND SUTHERLAND	HIGHLAND	ORKNEY	SCOTLAND	GB
Agriculture, forestry & fishing	1.0	4.4	8.9	1.7	0.7
Mining & quarrying	0.7	0.4	0.9	1.1	0.2
Manufacturing	4.3	5.2	3.1	6.7	8.0
Electricity & gas	0.3	0.8	0.4	0.7	0.4
Water supply, waste	14.4	1.7	0.4	0.8	0.7
Construction	5.4	6.1	7.1	5.4	4.9
Wholesale & retail trade	13.5	14.0	11.1	13.3	15.0
Transport & storage	3.4	4.4	7.1	4.2	4.9
Accommodation & food/drink services	10.8	14.0	8.9	8.2	7.6
Information & communications	2.7	2.0	2.0	3.5	4.3
Financial services	1.0	0.9	0.7	3.3	3.5
Property services	0.7	1.3	0.9	1.5	1.7
Professional & scientific services	8.6	5.2	4.5	7.0	8.7
Business support services	2.5	5.2	3.6	8.1	8.8
Public administration	4.5	5.2	8.9	6.2	4.4
Education	8.1	7.9	8.0	8.2	8.6
Health & social care	14.4	16.6	17.8	15.7	13.0
Arts, recreation & entertainment	2.5	3.5	4.5	2.8	2.5
Other services	1.3	1.1	1.1	1.6	2.0
Total	100.0	100.0	100.0	100.0	100.0

Amber = local hotspots (areas with at least twice the GB rate of representation of employment).
Green = cold spots (areas with less than half the GB rate of representation of employment).

Source: ONS (BRES, 2019)

[12] *The Business Register and Employment Survey from the ONS is the most reliable source of insight into employment by industry at a local authority level. Data for 2019 is used here as it is the most recent full calendar year for which data is available that is not affected by the effects of Covid-19 and associated Government responses.*

In the Caithness and Sutherland area, the Utilities sector (Energy production, Water and Waste) is much more important (likely to be due in part to the Dounreay Nuclear Power Development Establishment and Vulcan Naval Reactor Test Establishment facilities) as a source of employment compared to the other areas included in the baseline assessment.

It is also noteworthy that the accommodation and food & drink services sector in the Caithness and Sutherland area provides around 11% of employee jobs, which whilst being higher than the Scotland average (8.2%) is lower than the Highland area (14%): this is relevant because this broad sector can be used as a proxy to assess the relative importance of tourism activity in different areas. Further information regarding the local importance of industries such as commercial fisheries and tourism are presented in sub-section 19.4.4.8.

In Orkney, agriculture / forestry / fishing activities contribute around twice as much relative employment compared to the Highland area. Activities such as manufacturing and the utilities are comparatively less important in Orkney compared to the Scotland average, whereas accommodation & food/drink services is slightly more important compared to the national average for Scotland.

19.4.4.4 Earnings

The ONS publish two alternative measures of average workforce earnings: one that is workplace-based, and one that is residence- based. The differences between the two measures are usually quite small, but these differences can be more significant where higher paying job opportunities can be accessed via commuting or where periodic working away from home is a significant feature of the labour market. Table 19-9 below provides data for the two measures, benchmarked against the UK average.

Table 19-9 Median gross weekly earnings – full-time workers

AREA	WORKPLACE-BASED (£)	% OF UK AVERAGE	RESIDENCE-BASED (£)	% OF UK AVERAGE
Caithness and Sutherland[13]	577.5	98.7%	559.7	95.6%
Highland	574.0	98.1%	575.1	98.4%
Orkney	598.8	102.3%	598.1	102.2%
Scotland	577.0	98.6%	578.3	98.8%

Source: ONS (BRES, 2019) Annual Survey of Hours and Earnings

[13] *The data provided here is for the Caithness, Sutherland, and Easter Ross Westminster constituency.*

The workplace-based data indicate that median weekly earnings for full-time workings residents in the Highland region (and also in the Caithness and Sutherland area) are around 1%-2% lower than the UK benchmark, whereas median earnings for resident workers located in Orkney are around 2% higher than for the UK as a whole.

The residence-based data show a similar pattern for Orkney and for the Highlands. For Caithness and Sutherland, the residence-based data indicate a relatively lower level of earnings for full time workers compared to the UK average, with median levels of gross weekly earnings indicated to be over 4% lower than the UK average.

19.4.4.5 Businesses and entrepreneurship

Business density and business start-up rates can be used as a measure of the relative dynamism of regions and local areas.

According to the ONS Inter Departmental Business Register, in 2021 there were 10,775 business enterprises operating in the Highland area. To compare with other areas, a standard approach is to divide the number of enterprises by the working age population of the area. On this basis, in 2021 there were 75.4 enterprises per 1,000 working-age population in the Highland area, compared to 50.2 in Scotland and 66.1 across the UK.

In Orkney there were 1,445 enterprises registered as operating in 2021. This indicates a rate of 107.8 enterprises per 1,000 working-age population in Orkney, which is over twice the average rate for Scotland as a whole in 2021.

Unfortunately, there are no equivalent data available for Caithness and Sutherland as the lowest spatial unit used by the ONS for these data is the local authority area.

The annual number of new businesses started in an area is an indicator of entrepreneurship. According to ONS data (ONS Business Demography data series), in 2020, there were 730 new enterprises started in the Highland area that were large enough to register for Value Added Tax and/or Pay As You Earn purposes. This represents 5.1 new start businesses per 1,000 working-age population, which was the same level as Scotland as a whole. The equivalent statistic for the UK was 8.5.

In Orkney, there were 45 new enterprises registered in 2021, indicating a start-up rate of 3.4 new enterprises per 1,000 working age population. This indicates a start-up rate that is two-thirds of the level recorded for Scotland as a whole during 2021.

19.4.4.6 Economic output

The contribution of individual companies, specific industries, and sub-national areas[14] to national economic output (Gross Domestic Product) is measured by GVA. The contribution of the Project to GVA is a key metric of the potential contribution of the Project to economic growth that is assessed later in this chapter.

[14] *Sub-national areas are spatial units below the level of a nation-state, such as a UK region or local authority area.*

According to data published by the ONS, Scotland contributed £142.15 billion in GVA to the UK economy in 2018, representing 7.4% of the UK total[15].

ONS also provide GVA data at a local authority level. According to the most recent comprehensive data (2018), the Highland area contributed £6.42 billion in GVA in 2018, accounting for around 4.5% of Scotland's total. The equivalent figure for Orkney is £634 million of GVA in 2018, accounting for 0.4% of the Scotland total for that year.

The ONS does not publish annual GVA estimates for sub-local authority areas such as Caithness and Sutherland. However, an approximate estimate for GVA generated in the area most relevant to the likely epicentres of Project activity on the Scottish mainland can be inferred based on the proportionate contribution that Caithness and Sutherland makes to the overall Highlands employment base. Using this approach, the annual value of GVA contributed in 2018 is estimated to be worth around £540 million.[16]

19.4.4.7 Potential supply chain representation

An indication of the potential responsiveness of an area's economy to a proposed major investment in renewable energy infrastructure can be gained through an analysis of the relative importance of industries that have the potential to contribute to the supply chain. The relative representation of industries that are relevant to the supply chain for offshore renewables developments can be assessed through interrogation of ONS employment data (via the annual BRES data series) at a detailed sector-based level based on the Standard Industrial Classification (SIC) categories used by the ONS.

Table 19-10 presents data on 2019 levels of employment in sub-sectors that are considered to be most relevant to the supply chain for offshore renewables developments. The sector definitions are based on the SIC used by the ONS.[17]

A sector with a Location Quotient (LQ) greater than 1.00 has an above-average level of representation compared to a benchmark area. The data in Table 19-11 suggest that there are a number of sub-sectors (such as Electrical installation) that could potentially provide content to the Project. For example, the LQ for Architectural and engineering activities in the Highland area compared to the UK is 1.17, indicating that this sector has a level of representation 17% greater than the average across the UK as a whole.

The LQ data also confirms that the Electricity generation & transmission industry is already of well above-average importance to the economy of the Highland area: the LQ for this activity is 2.48, indicating that the proportion of the workforce employed by this industry is around 2.5 times greater than the national (UK) average. The LQ data similarly confirms the importance of the Accommodation sector to the Highland areas. (LQ=5.37).

[15] *Regional GVA (balanced) by industry; all Nomenclature of Territorial Unit for Statistics level regions, Table 1b (ONS, June 2021).*

[16] *This estimate is based on the use of the combined Thurso and Wick TTWAs as a proxy for Caithness.*

[17] *Note: figures are given to the nearest 100 employees, so zeroes in the table may not be real zeroes.*

Table 19-10 Employees in employment by sector (%)

SECTOR (AND SIC CODE)[18]	CAITHNESS AND SUTHERLAND EMPLOYEES ('000)	HIGHLAND EMPLOYEES ('000)	ORKNEY EMPLOYEES ('000)	SCOTLAND EMPLOYEES ('000)	UK EMPLOYEES('000S)
Fabricated metal products (25)	0.1	1	<0.1	17.0	290.5
Electrical control apparatus (27.1)	0	<0.1	0	1.2	25.0
Wiring & wiring devices (27.3)	0	0	0	1.1	12.0
General purpose machinery (28.1)	0	<0.1	0	3.7	53.3
Electricity generation & transmission (35.1)	<0.1	0.9	<0.1	12.5	94.9
Construction of Utility projects (42.2)	<0.1	<0.1	0	1.2	20.0
Other Civil Engineering projects (42.9)	0.1	0.7	0.1	13.0	124.1
Electrical & plumbing installation (43.2)	0.2	2.1	0.2	35.0	441.2
Accommodation services (55)	0.8	10	0.6	69.5	505.8
Food & beverage services (56)	0.4	5.5	0.4	136.5	1,846.8
Management consultancy (70.2)	<0.1	0.4	<0.1	23.5	498.7
Architectural & engineering activities (71)	0.7	2.5	0.2	66.0	580.0
Other Professional & scientific services (74)	<0.1	0.4	0.1	10.5	199.2

Source: ONS (BRES, 2019)

[18] *SIC = Standard Industrial Classification code, a method of categorizing business sectors used by the ONS.*

Table 19-11 Employees in employment by sector (Location Quotients vs UK)

SECTOR (AND SIC CODE)[19]	CAITHNESS AND SUTHERLAND EMPLOYEES (LQ)	HIGHLAND EMPLOYEES (LQ)	ORKNEY EMPLOYEES (LQ)	SCOTLAND EMPLOYEES (LQ)
Fabricated metal products (25)	1.26	0.93	0.09	0.72
Electrical control apparatus (27.1)	0.00	0.16	0.00	0.62
Wiring & wiring devices (27.3)	0.00	0.00	0.00	1.16
General purpose machinery (28.1)	0.00	0.15	0.00	0.87
Electricity generation & transmission (35.1)	0.59	2.43	1.41	1.62
Construction of Utility projects (42.2)	0.70	0.68	0.00	0.77
Other Civil Engineering projects (42.9)	2.27	1.64	2.16	1.29
Electrical & plumbing installation (43.2)	1.09	1.31	1.09	0.98
Accommodation services (55)	4.57	5.37	3.18	1.70
Food & beverage services (56)	0.60	0.81	0.54	0.91
Management consultancy (70.2)	0.20	0.24	0.16	0.59
Architectural & engineering activities (71)	3.45	1.17	0.83	1.40
Other Professional & scientific services (74)	0.50	0.54	0.94	0.65

Source: ONS (BRES, 2019)

19.4.4.8 Interactions with locally important industries

The next matter to consider is data relevant to sectors where there is potential for negative interactions between the Project and existing, locally important business activity. Two sectors that were highlighted by stakeholder consultations as requiring consideration in this regard were tourism and commercial fishing.

19.4.4.8.1 Tourism activity

The baseline assessment for tourism mostly focuses on the findings for year 2019, as this is the most recent year for which data is available that is unaffected by the disruption caused by the 2020-2022 Covid-19 pandemic.

Analysis from the 2019 STEAM economic impact report for Caithness (commissioned by THC) highlights that the area:

[19] *SIC = Standard Industrial Classification code, a method of categorizing business sectors used by the ONS.*

- Receives over 917,000 visitors annually, of which 499,000 are staying visitors and 418,000 are day visitors; and
- Generates annual visitor spending of just over £143 million.

The equivalent 2019 STEAM economic impact report commissioned by OIC reveals that:

- There were around 360,000 visitors in 2019, of which nearly 220,000 (61%) were staying and nearly 140,000 (39%) were day visitor; and
- These visits were associated with an estimated £78 million of direct expenditure in Orkney during 2019.

Tourism visitation and expenditure data presented in the various STEAM reports confirms the seasonal nature of tourism activity. For example, STEAM data for Orkney for year 2019 reveals that 74% of all visitors arrive between May and September, with a further 15% arriving in March-April or October, and only 11% between November and February. A similar pattern is also evident for the Highland area.

Tourism activity in the Caithness area is estimated to provide over 2,820 Full-Time Equivalent (FTE) direct jobs. When indirect and multiplier effects are accounted for, tourism activity is estimated to support total employment amounting to just over 3,300 FTE jobs in the area.

The equivalent estimates for Orkney are that around 1,740 direct FTE jobs are supported by visitor expenditure; with overall employment supported by tourism activity amounting to slightly under 2,000 FTE jobs when indirect and multiplied effects are added to the direct effects.

Both Caithness and Orkney provide a range of tourist accommodations, ranging from 3-star and 4-star hotels and bed and breakfast establishments, self-catering accommodations of different types, and a number of caravan and camping sites. The 2019 STEAM reports identifies that:

- For Caithness there is a total tourism accommodation capacity in Caithness amounting to 3,478 bedspaces, with 37% of this total being serviced accommodation and 63% non-serviced; and
- The equivalent report for the Highland area (2020) identifies 75,211 bedspaces, with 34% serviced and 66% un-serviced.

Equivalent baseline data for bedspaces on Orkney has been supplied for this assessment by OIC. These data are for year 2021, so is for a different year (albeit more recent) than the STEAM report discussed above. The 2021 data indicate that overall there were 3,837 bedspaces on Orkney, with 34% of these being serviced and 66% un-serviced.

Formal (i.e. admission charging) tourism receptors in Caithness include the Castle and Gardens of Mey, and Wolfburn and Old Pulteney distilleries. Prominent historic landmarks in Caithness include Castle Sinclair Girnigoe, Caithness Brock Centre, and the Castle of Old Wick. Caithness also possesses a rich archaeological heritage with well-known sites including the Cnoc Freicedain chambered cairns, the Achavanich stones, the Grey Cairns of Camster, the Cairn of Get, and the Hill o' Many Stanes.

The north coast of Sutherland provides outstanding coastal and hill walking opportunities, including challenging walks to Cape Wrath and Ben Hope, the latter being the most northerly Monroe. Sutherland is also rich in archaeological and built-heritage interest.

Prominent tourism attractions in Orkney include the following: St Magnus Cathedral, the Churchill Barriers, the Italian Chapel, the Scapa Flow Visitor Centre, Stromness Museum and the Highland Park and Scapa Whisky distilleries.

Orkney also possesses an exceptionally rich archaeological heritage that attracts many visitors. The most renowned pre-historic sites include Skara Brae, the Ring of Brodgar, and the Standing Stones of Stenness. The islands also possess important built heritage from the nineteenth century (such as the Hackness Martello Tower and Battery, on Hoy) and the twentieth century (such as the wartime defences constructed to protect Scapa Flow and the British naval fleet at anchorage).

Caithness and Sutherland provide part of the route of the popular North Coast 500, an 830 km (516 mile) circular route covering the north Highlands. The North Coast 500 route extends along the north coast, and from short sections of the North Coast 500 elements of the Project (i.e., Wind Turbine Generators (WTGs) and Offshore Substation Platform (OSP)) are likely to be visible. Assessment of the potential effect of the Project on visitor experiences of relevant portions of the North Coast 500 is included in chapter 18: Seascape, landscape and visual assessment.

Informal tourism and outdoor recreation activities in the area include routes and other land used for walking, cycling, birdwatching, and other nature-based activities. The area hosts one long-distance path in the form of the North Highland Way, an approximately 241 km (150 mile) trail from Duncansby Head to Cape Wrath. There is also a network of adopted core paths that are utilised by both tourists and local residents.

On Orkney, popular walking routes include the coastal path to the Old Man of Hoy from Rackwick and a coastal walk down the west coast of Orkney mainland between Birsay and Stromness. Orkney also possesses many fine beaches, such as Warebeth and Skaill on the west mainland coast, and Rackwick on Hoy.

There are several beaches in Caithness popular with both tourists and local residents for swimming, surfing, walking and other beach-based activities: these include Sandside Bay; Dunnet Bay; and Thurso Bay/Thurso East. The latter has been utilised on several occasions for international surfing competition events. Indeed, Thurso has a reputation as one of the best locations for surfing in Scotland and the UK.

There are several harbours used by recreational craft within the socio-economics study area, including Wick Harbour, Keiss Harbour, John O'Groats Harbour, Stromness, Kirkwall, and Westray. Orkney is also used as a calling point by passenger cruise ships.

Data from the Royal Yachting Association indicates that Pentland Firth is a moderately intensive area for recreational boating.

Caithness and Sutherland as well as Orkney are important locations for nature-based tourism, providing opportunities to view important breeding colonies of seabirds as well as other marine life including seals and whales. The area hosts several important Royal Society for the Protection of Birds (RSPB) reserves, such as RSPB Dunnet Head and RSPB Hoy.

Several commercial operators offer visitors the opportunity for water-based tours, and these nature-based recreation assets are utilised by both tourists and local residents. Assessment of the potential effects of the Project on these operators is considered in chapter 20: Other sea users.

The Flow Country – Europe's largest expanse of blanket bog – is an internationally important peatland and wetland area for which an application for UNESCO (United Nations Educational, Scientific and Cultural Organization) World Heritage status is currently being processed. The RSPB centre at Forsinard provides facilities and interpretation for tourists and visitors to this part of Caithness.

19.4.4.8.2 Commercial fisheries

The ONS BRES referred to previously provides estimates of employment in the marine fishing industry. It should be noted that the data used in this chart consist of employees plus working proprietors, so fishing boat owners who are active in fishing are included in their data. The relevant annual data for the period 2019 to 2021 are presented in Table 19-12 below.

Table 19-12 Marine fishing employment, 2018-2021

AREA	NUMBER OF EMPLOYEES (INCLUDING WORKING PROPRIETORS)		
	2019	2020	2021
Caithness and Sutherland	105	95	115
Highland	700	500	600
Orkney	100	75	100
Scotland	4,500	3,000	4,500
GB	7,000	6,000	7,000

Source: ONS (BRES 2018-2021)

Commercial fishing activity

To understand the key fishing methods and commercial fish and shellfish species relevant to the socio-economics chapter, a summary of the complete baseline that can be found in chapter 14: Commercial fisheries and SS12: Commercial fisheries baseline report is provided below.

Commercial fisheries data is often analysed by International Council for the Exploration of the Sea (ICES) rectangles; statistical rectangles used to simplify data analysis and visualization which are the administrative units used for fisheries management. The commercial fisheries study area consists of four ICES rectangles:

- 46E5 - southwest, including the majority of the OAA;

- 46E6 - southeast, including the majority of the cable corridor;
- 47E5 - northwest, including a small proportion of the OAA; and
- 47E6 - northeast, adjacent to 46E6 and 47E5).

The key datasets used to understand the key fishing methods and species of the offshore Project area include:

- Surveillance sightings (2015 – 2019) – visual observation of fishing vessels; and
- Fisheries statistics (2016 – 2021) – landings by value (£) and effort by vessel size, fishing method and species per ICES rectangle.

Surveillance sightings data by vessel nationality between 2015 and 2019 identified that the majority of sightings are of UK vessels, with a limited number of sightings for Danish, Dutch, French, German, and Irish vessels. Both the sightings data and landings data indicate that demersal otter trawlers, and pots and traps account for the vast majority of fishing activity in the commercial fisheries offshore study area. Landings values by ICES rectangle from 2016 to 2021 have been used to calculate the annual average by vessel length, fishing method, and species. Between 2016 and 2020, landings values are highest in ICES rectangle 47E6 and the lowest landings values are recorded in ICES rectangle 46E5. In 2021, landings values were highest in ICES rectangle 47E6 and 46E6. The majority of landings across the commercial fisheries offshore study area are associated with vessels over-10m. A greater proportion of the landings values in the coastal ICES rectangles 46E6, 46E5, and 47E6 are attributed to vessels that are 10 m and under, which is consistent with smaller vessels generally having smaller operational ranges. As detailed in chapter 14: Commercial fisheries, the following key fisheries are active in the commercial fisheries study area:

- Pots and traps (including vivier[20] crabbers) (across the OAA and offshore ECC);
- Demersal trawls (concentrated in the offshore ECC with lower levels of activity in the OAA);
- Scallop dredges (patchy distribution of activity across the OAA and offshore ECC); and
- Pelagic trawlers (in the OAA and offshore ECC with a high degree of inter-annual variation).

The species associated with the highest landings values and their annual landings values from 2016 to 2021 in the commercial fisheries offshore study area listed in Table 19-13.

Table 19-13 Annual landings values (£) (2016 – 2021) for species with the highest landings values in the commercial fisheries offshore study area[21]

SPECIES	2016	2017	2018	2019	2020	2021
Brown crab (*Cancer pagurus*)	£4,138,958	£4,404,264	£4,240,359	£3,223,046	£2,093,738	£2,535,323

[20] *Larger vessels targeting crab with a vivier tank on board to store the specimen until landed*

[21] *Marine Management Organisation (MMO) Fisheries Statistics (landings data (value) by fishing method, vessel length and species) (2016 – 2021).*

SPECIES	2016	2017	2018	2019	2020	2021
Haddock (*Melanogrammus aeglefinus*)	£2,183,979	£1,650,781	£3,602,445	£2,441,363	£1,411,951	£814,616
Mackerel (*Scomber scombrus*)	£2,395,728	£1,861,760	£6,339,398	£31,418	£177,618	£2,590,815
Cod (*Gadus morhua*)	£857,281	£1,762,561	£2,646,603	£2,609,710	£745,851	£786,993

Brown crab are associated with a higher proportion of landings values in the nearshore ICES rectangles. Demersal whitefish, mainly haddock and cod, also contribute to a high proportion of landings values in the eastern part of the commercial fisheries offshore study area.

Landings from the commercial fisheries offshore study area were recorded at 72 different ports (MMO, 2022). Scrabster (£6,544,086) is associated with the highest average landings values between 2017 and 2021, followed by Peterhead (£1,888,432), Stromness (£1,719,739), Burray (£573,404) and Tingwall (£478,490).

Data have also recently become available on the value of commercial fish landed at individual major UK fishing ports by UK vessels. Data published by the MMO for 2021 indicate that the volume and value of fish landed at the two major fishing ports located in the local socio-economics study area (i.e. Scrabster and Stromness) in that year were as follows:

- Scrabster: around 14,700 tonnes of fish landed by UK vessels with an overall value of £30.88 million; and
- Stromness: 928 tonnes of fish landed by UK vessels with an overall value of £2.55 million.

Onshore processing

Data from the ONS BRES was also used to assess the potential size of the onshore fish processing industry and onshore in the local areas. Confidentiality of the data means that disaggregated data cannot be replicated here, but the overall size of the potential onshore employment base was identified as being as follows:

- Caithness and Sutherland: 270 employee jobs; and
- Orkney: 35 employee jobs.

Additional information and insight on the issues and challenges facing this receptor group has been identified through semi-structured consultation interviews.

19.4.4.9 Local services

19.4.4.9.1 Housing

A draft Housing Needs Demand Assessment (HNDA) for THC's area of responsibility was published in November 2021. The report identifies some housing pressure across the Highland area, driven by population growth and an ageing population. However, housing pressures are recognised as varying considerably across the Highland area, with Caithness specifically identified as exhibiting low housing demand pressure.

The current housing strategy for Orkney is the Local Housing Strategy 2017-2022 published by OIC. The strategy draws upon a HDNA for Orkney that was undertaken in 2016 and 2017, and which produced scenarios for housing demand up to year 2032. Policy 5 of the OLDP confirms that OIC recognises that it is important that enough strategic land is allocated to enable growth within settlements to ensure there is housing provision to support potential demand from emerging industries such as renewables.

19.4.4.9.2 Education

A desk-based review has been undertaken of primary and secondary school provision in the local socio-economics study area, supplemented with information provided by the relevant departments of THC and OIC.

With respect to Caithness and North Sutherland, there are 16 primary schools serving this area. The current school roll across the primary schools as a proportion of capacity ranges from 45% to 86%, with an average enrolment at 68% of capacity.

There are secondary schools at Thurso (71% capacity) and Wick (99%). Wick High School is the only school in the local area that is near capacity, with the local education authority expecting capacity to be reached by 2023. There is also a secondary school at Bettyhill (Farr Secondary school) in North Sutherland.

Similar data has been provided on request by OIC covering current and predicted future school rolls for each of Orkney's 17 primary schools, three junior high schools and two secondary schools.

The Orkney data show that overall primary school enrolment increased by just over 320 places (19%) between 2009/10 and 2020/21.

Equivalent data for Orkney's secondary schools indicates that overall enrolment fell by just under 130 places (9%) between 2009/10 and 2020/21.

19.4.4.9.3 Heath care services

Information regarding healthcare facilities within the local socio-economics study area has been obtained via engagement with NHS Highland, NHS Orkney, Public Health Scotland, and the websites of individual General Practitioner (GP) practices.

Orkney has a single hospital, Balfour Hospital, located in Kirkwall. The Caithness area is served by three hospitals: Caithness General Hospital; Wick Town and Country Hospital; and Dunbar Hospital. The largest of these (Caithness

General) is currently implementing an investment plan with funding from the Scottish Government, which includes the development of a new Outpatient Clinic.

Of the four GP practices operating in Caithness, the three operating in Thurso average between 1,320 and 1,550 patients per GP. A fourth GP practice in Wick is currently operating at 1,930 patients per GP.

The 10 GP practices operating in Orkney average 542 patients per GP. The ratio of patients per GP ranges from a minimum of 150 up to a maximum of 982.

19.4.4.9.4 Public transport services

Both Thurso and Wick are connected to the national rail passenger network via the Far North Line.

There are various vehicle and passenger ferry routes connecting Orkney and mainland Scotland.

- North Link Ferries sail between Aberdeen and Kirkwall, with onward connections also available to Lerwick in Shetland;
- North Link also provide a short crossing between Scrabster (Caithness) and Stromness; and
- Pentland Ferries operate between Gills Bay (Caithness) and St Margaret's Hope (South Ronaldsay, Orkney).

John O'Groats Ferries operates a passenger-only ferry between John O'Groats and Burwick (South Ronaldsay, Orkney) during summer months.

Orkney Ferries provide a range of inter-island services for vehicles and passengers connecting the various islands in the Orkney archipelago. For example, there is a range of services connecting North Hoy (Moaness) with Stromness and Graemsay. There are also services connecting both Longhope, Hoy (and Lyness on the connected South Walls island) with Flotta and Orkney mainland.

The principal bus route serving Caithness along the north coast is Route 73 – operated by Stagecoach – which in school term time runs three times daily (Mondays to Fridays) between Thurso and Reay. There is also a limited service (Route 273) between Reay and Dounreay, with an outward service on weekday mornings and a return in the evening.

There is a range of bus routes serving Orkney. These include the X1 route on Orkney mainland linking Stromness and the St Margaret's Hope ferry terminal via Kirkwall. There is also a regular weekday public bus service on Hoy that meets most of the ferries from Houton (Orkney mainland) travelling between Lyness ferry terminal and Longhope village.

19.4.4.10 Socio-cultural effects

Analysis of potential socio-cultural effects considers the potential of the Project to generate effects on community well-being, community cohesion, and the quality of life experienced by individuals and households in local communities[22]. The response to the Scoping Report provided by MAU highlighted the potential for the Project to generate effects of the following types:

- Lifestyles and quality of life;
- Gender issues;
- Social problems, such as crime, deprivation, and ill-health;
- Community integration and cohesion; and
- Community image and character.

This section of the baseline characterisation assesses the baseline evidence that is available from top-down sources on these matters. It also provides a summary of evidence from the community engagement process including responses to the questionnaire survey.

One of the types of impact listed above – gender issues – is also considered in the section on potential distributional effects of the Project.

19.4.4.10.1 Evidence from the Scottish Index of Multiple Deprivation

Evidence from the Scottish Index of Multiple Deprivation (SIMD) is useful because it provides a basis to compare the overall level of deprivation in small areas with all other areas of Scotland. The SIMD ranks data zones in Scotland from most deprived (ranked 1) to least deprived (ranked 6,976) across seven domains. Analysis using the SIMD often focuses on the data zones below a certain rank, for example, the 5%, 10%, 15% or 20% most deprived data zones in Scotland. The assessment here highlights datazones included in the most 15% deprived in Scotland, as this is the threshold used by THC in their draft Housing Needs and Demand Assessment document from 2021 (e.g., HDNA Table 2-7, page 45).

Table 19-14 focuses on the overall SIMD rankings. Despite the relatively high earnings for Caithness, Sutherland and Orkney (see section 19.4.4.4), four datazones in the local socio-economics study areas are ranked in the most 15% deprived in all Scotland, likely as a result of a high concentration of social housing within those certain datazones. All of these are located in Wick. A summary of the baseline situation of these most deprived areas is summarised in Table 19-14. Overall, the highest concentration of multiple deprivation is located in Wick South, where just under 50% of the resident population reside in neighbourhoods that are ranked in the (15%) most deprived in all Scotland.

[22] *Community cohesion covers aspects such as the potential of a development to influence levels of stress, conflict, and/or integration within communities.*

Table 19-14 The overall most deprived data zones in Caithness, Sutherland, and Orkney

INTERMEDIATE ZONE (IZ)	NUMBER OF DATA ZONES IN THE 15% MOST DEPRIVED IN SCOTLAND	POPULATION OF THESE ZONES	TOTAL POPULATION OF THE IZ	% OF IZ POPULATION THAT ARE IN THE 15% MOST DEPRIVED IN SCOTLAND
Wick North	1	704	3,244	21.7%
Wick South	3	1,710	3,502	48.8%

Source: SIMD, 2020

Turning now to individual domains, three datazones in the local socio-economics study areas are ranked in the most 15% deprived in all Scotland with respect to the income domain. All three are again located in Wick. A summary of the baseline situation of these most deprived areas with respect to the income domain is set out in Table 19-15 below.

Table 19-15 The most income deprived data zones in Caithness, Sutherland, and Orkney

IZ	NUMBER OF DATA ZONES IN THE 15% MOST DEPRIVED IN SCOTLAND	POPULATION OF THESE ZONES	TOTAL POPULATION OF THE IZ	% OF IZ POPULATION THAT ARE IN THE 15% MOST DEPRIVED IN SCOTLAND
Wick North	1	704	3,244	21.7%
Wick South	2	1,182	3,502	28.6%

Source: SIMD, 2020

With respect to income deprivation, the highest concentration is once again found in Wick South, where just under 30% of the resident population are living in areas with the most acute deprivation (compared to all areas of Scotland) on this domain.

Regarding health deprivation, there are two datazones in the local socio-economics study areas ranked in the most 15% deprived in all Scotland with respect to this domain. One is located in Wick North and another in Wick South. A summary of the baseline situation of these most deprived areas with respect to the health domain is set out in Table 19-16 below.

Table 19-16 The most health deprived data zones in Caithness, Sutherland, and Orkney

IZ	NUMBER OF DATA ZONES IN THE 15% MOST DEPRIVED IN SCOTLAND	POPULATION OF THESE ZONES	TOTAL POPULATION OF THE IZ	% OF IZ POPULATION THAT ARE IN THE 15% MOST DEPRIVED IN SCOTLAND
Wick North	1	704	3,244	21.7%
Wick South	1	476	3,502	13.6%

Source: SIMD, 2020

With respect to health deprivation, the highest concentration is found in Wick North, where nearly 22% of the resident population are living in areas with the most deprivation with respect to this domain compared to all areas of Scotland.

Finally, with respect to crime, there are seven datazones in the local socio-economics study areas ranked in the most 15% deprived in all Scotland with respect to this domain. A summary of the baseline situation of these most deprived areas with respect to the crime domain is set out in Table 19-17 below.

Table 19-17 The data zones where crime levels are the most acute in Caithness, Sutherland, and Orkney

IZ	NUMBER OF DATA ZONES IN THE 15% MOST DEPRIVED IN SCOTLAND	POPULATION OF THESE ZONES	TOTAL POPULATION OF THE IZ	% OF IZ POPULATION THAT ARE IN THE 15% MOST DEPRIVED IN SCOTLAND
Thurso East	2	1,449	2608	55.6%
Wick North	1	602	3,244	18.6%
Wick South	3	1,710	3,502	48.8%
Kirkwell West	1	411	3,725	11.0%

Source: SIMD, 2020

With respect to crime, the highest concentration of deprivation is found in Thurso East, where around 55% of the resident population are living in areas with the most deprivation with respect to this domain compared to all areas of Scotland.

19.4.4.10.2 Evidence from the *My Life in the Highlands and Islands* report

A useful source of information concerning issues pertinent to community well-being has been recently published by Highlands and Islands Enterprise (HIE). The report, entitled *My Life in the Highlands and Islands Research* mainly involved structured interviews with over 5,300 people aged over 16 from over 4,400 households across the Highlands and Islands of Scotland, with fieldwork taking place from January to March 2022. The report was published in October 2022. The analysis of the research findings focus on those presented in the report for two spatial areas:

- Caithness and Sutherland (which accounted for 455 responses, 8.6% of the overall survey sample); and
- Orkney (420 responses, 7.9% of the overall survey sample).

With respect to Caithness and Sutherland, notable findings from the research included the following:

- Access to services: Most households in Caithness and Sutherland say they have access to a primary school (79%), a rentable hall or function room (72%), convenience store (72%), post office (71%) or daytime bus service (69%) within a 15-20 minute walk of their home. However, access to some services is more difficult, with 31% unable to access a community hospital within a 20 minute drive and 22% cannot access a supermarket within this distance;
- Housing: Compared to the survey area overall, households in Caithness and Sutherland are less likely to say there is a shortage of housing for locals (although 69% do say this), that local people cannot afford housing (67%), that there is a lack of the right type of properties for local people (65%) or that there are not enough properties to rent at a reasonable price (65%);
- Training: Residents who have not accessed training are more likely than those in the region overall to say they found it hard to do so in their local area (40% vs 30%);
- Transport: Levels of dissatisfaction with the frequency and reliability of air services, buses and trains are higher amongst those residents in Caithness and Sutherland compared to the survey area overall;
- Pride in the community: Overall, 86% of residents express pride in their local community, which is slightly lower than the overall average in the survey area overall (88%);
- Local decision making: A higher proportion of Caithness and Sutherland residents disagree that they can influence local decision making compared to the average in the survey area overall (46% vs 33%);
- Jobs that help the environment: Fewer people in Caithness and Sutherland say they would like to have a job that helps the environment or helps to prevent climate change (14% vs 22%) or consider that their job will be affected by the move towards net zero (38% vs 46%);
- Energy efficiency: 37% of residents in Caithness and Sutherland said they were planning to make improvements to energy efficiency in their homes over the next 2-3 years, such as installing a smart meter, a more efficient boiler, or better insulation. This was a slightly higher proportion than the survey sample as a whole (36%);
- Optimism about the community: Residents in Caithness and Sutherland are more likely than average to be pessimistic about their community (23% vs 16% regionally), although twice as many – just under half – are optimistic (46%);
- Priorities for communities to thrive: The top priorities for communities in Caithness and Sutherland to thrive are more job opportunities, housing for local families, and local businesses and trades. More job opportunities (46%) and more working age people moving into the area (25%) are higher priorities for these communities, than for the survey area overall (32% and 19% respectively).

For Orkney, notable findings from the research included the following:

- Access to services: Most households in Orkney say they have access to a daytime bus service (71%), a rentable hall or function room (70%), a primary school (69%), a convenience store (69%) or post office (68%) within a 15-20 minute walk of their home. However, access to primary schools and daytime bus services is lower than the survey area overall. Access to some services is more difficult, with 21% unable to access a dentist or a health visitor (9%) within a 20 minute drive, proportions that are both higher than the overall average for the survey area (15% and 5% respectively);
- Housing: Compared to the survey area overall, households in Orkney are more likely to say there is a shortage of housing generally (90%), that local people cannot afford to buy housing (86%), that there is a lack of the right type of properties for local people (87%) or that there are not enough properties to rent at a reasonable price (88%). They are also more likely to say that too many houses are bought as second homes (77%) or used for short term holiday lets (71%);
- Training: Affordability was reported to be a greater barrier to accessing training compared to the survey area average;
- Transport: 44% said that increased numbers of tourists made it more difficult to access ferry or air services. Satisfaction with the frequency, cost and reliability of ferry services was higher than the survey area average;
- Pride in the community: Overall, 95% of residents express pride in their local community, which is higher than the overall average in the survey area (88%);
- Local decision making: A higher proportion of Orkney residents consider they can influence local decision making compared to the overall average in the survey area (38% vs 29%);
- Jobs that help the environment: Slightly fewer people in Orkney say they would like to have a job that helps the environment or helps to prevent climate change (21% vs 22%). A slightly higher proportion consider that their job will be affected by the move towards net zero (49% vs 46%);
- Energy efficiency: 39% of residents in Orkney said they were planning to make improvements to energy efficiency in their homes over the next 2-3 years, such as installing a smart meter, a more efficient boiler, or better insulation. This was a greater proportion than the survey sample as a whole (36%);
- Optimism about the community: Residents in Orkney are more likely than average to be optimistic about their community (69% vs 52% for the survey area overall);
- Priorities for communities to thrive: The top priorities for communities in Orkney are housing for local families (59%); more job opportunities (28%); and local businesses and trades (24%).

Based on these research findings, it appears that whereas housing supply and affordability issues are much more of a priority for Orkney compared to Caithness and Sutherland, employment opportunities are very much the top priority for the latter.

19.4.4.10.3 Evidence from the community engagement process

A more specific source of evidence regarding community priorities and concerns about the Project has been generated through the community engagement process undertaken for the Project. The community consultation questionnaire widely disseminated throughout Caithness, Sutherland, and Orkney – including during and after a series of consultation events – contained a number of questions relating to socio-economics issues. In particular, the questionnaire contained questions that sought to identify concerns about the Project with respect to potential effects on:

- Jobs and the local economy;
- Tourism;
- Local services;
- Crime and anti-social behaviour;
- Community character;
- Community cohesion; and
- The interviewees own quality of life.

There was also a question about the potential effect on property values, but responses to this question are discussed in the next section (Distributional effects).

As of late December 2022, a total of 354 local responses to the questionnaire survey had been received from residents of Caithness, Sutherland, and Orkney with respect to the jobs and economy issue. Of these responses, the largest number (238) were from Orkney residents, with 85 provided by Caithness residents and 31 from residents of Sutherland. Table 19-18 below summarises the responses received from local residents with respect to the subject: Jobs and the Local economy.

Table 19-18 Community engagement responses: potential effect on jobs and the local economy

EFFECT OF PROJECT ON JOBS AND THE LOCAL ECONOMY	CAITHNESS	SUTHERLAND	ORKNEY	TOTAL
Positive/good effect	69%	65%	79%	75%
Negative/bad effect	7%	6%	2%	4%
Neutral/no effect	16%	13%	12%	13%
Not sure	7%	16%	8%	8%

Source: Community questionnaire survey, July-December 2022

The pattern of responses indicates that, overall, a large proportion of respondents expect the Project to have a positive effect on the local employment and the local economy, with 75% expressing this view. Altogether, only 13 responses (4%) expressed the view that the effects were expected to be negative for the local economy. Around 13% said they thought the effect would be neutral, and a further 8% were not sure. The most positive responses were from Orkney residents, where 79% expected positive effects. The lowest proportion was from Sutherland residents, where 65% expected positive effects on jobs and the local economy.

Turning next to the potential effect on tourism, as of the end of December 2022, a total of 356 local responses to the questionnaire survey had been received with respect to the tourism issue. As summarised in Table 19-19 below, the

largest number of these (240) were from Orkney residents, with 85 provided by Caithness residents and 31 from residents of Sutherland.

Table 19-19 Community engagement responses: potential effect on tourism

EFFECT OF PROJECT ON TOURISM	CAITHNESS	SUTHERLAND	ORKNEY	TOTAL
Positive/good effect	9%	6%	14%	12%
Negative/bad effect	20%	39%	9%	14%
Neutral/no effect	60%	39%	70%	65%
Not sure	11%	16%	8%	9%

Source: Community questionnaire survey, July-December 2022

Overall, 65% of those surveyed said that they expect the Project to have a neutral effect on tourism, with a further 9% saying they were not sure. Around 14% thought that the Project would have a negative effect on tourism, 12% thought that the Project (if it goes ahead) would have a positive effect on tourism. In two of the three sub-areas a greater proportion of responses expected positive rather than negative effects.

With respect to the potential effect on local services, as of the end of December 2022, a total of 355 local resident responses to the questionnaire survey had been received with respect to the local services issue. The largest number of these (240) were from Orkney residents, with 84 provided by Caithness residents and 31 from residents of Sutherland. The patterns of responses are summarised in Table 19-20 below.

Table 19-20 Community engagement responses: potential effect on local services

EFFECT OF PROJECT ON LOCAL SERVICES	CAITHNESS	SUTHERLAND	ORKNEY	TOTAL
Positive/good effect	29%	29%	28%	28%
Negative/bad effect	10%	13%	10%	10%
Neutral/no effect	50%	35%	47%	47%
Not sure	12%	23%	15%	15%

Source: Community questionnaire survey, July-December 2022

Overall, 28% of those surveyed said that they expect the Project to have a positive effect on local services, with a very similar pattern of responses from each of the three local areas. Overall, 10% said they thought the Project (if it goes ahead) would have negative effect on local services, with 13% of those residents in Sutherland saying this.

However, overall the highest proportion of the responses (47%) was from those who said they expected the Project to have no effect on demand for local services. A further 15% said they were not sure.

Turning next to the issue of the potential effect on crime and/or anti-social behaviour, as of the end of December 2022, a total of 332 local responses to the questionnaire survey had been received with respect to this issue. The largest number of these (239) were from Orkney residents, with 62 provided by Caithness residents and 31 from residents of Sutherland. The pattern of responses is summarised in Table 19-21 below.

Table 19-21 Community engagement responses: potential effect on crime and/or anti-social behaviour

EFFECT OF PROJECT ON CRIME AND/OR ANTI-SOCIAL BEHAVIOUR	CAITHNESS	SUTHERLAND	ORKNEY	TOTAL
Positive/good effect	8%	0%	3%	3%
Negative/bad effect	6%	0%	6%	6%
Neutral/no effect	60%	87%	78%	75%
Not sure	20%	13%	13%	16%

Source: Community questionnaire survey, July-December 2022

Overall, 75% of those surveyed said that they expect the Project to have a neutral effect on crime and/or anti-social behaviour. A further 16% said they were not sure of the potential effect. Of those who said that they thought the Project would have a non-neutral effect, slightly more (6%) said they expected the effect would be negative rather than positive (3%).

The questionnaire survey also asked about the potential effect of the Project on community character. This question was intended to explore issues such as the potential effect of the Project on local community identity, image, and/or uniqueness. As of the end of December 2022, a total of 352 local responses to the questionnaire survey had been received with respect to this issue. The largest number of these (237) were from Orkney residents, with 84 provided by Caithness residents and 31 from residents of Sutherland. The responses are summarised in Table 19-22 below.

Table 19-22 Community engagement responses: potential effect on community character

EFFECT OF PROJECT ON COMMUNITY CHARACTER	CAITHNESS	SUTHERLAND	ORKNEY	TOTAL
Positive/good effect	19%	19%	22%	21%
Negative/bad effect	17%	35%	10%	14%
Neutral/no effect	43%	26%	57%	51%
Not sure	21%	19%	11%	14%

Source: Community questionnaire survey, July-December 2022

Overall, 51% of those surveyed said that they expect the Project to have a neutral effect on community character. A further 14% said they were not sure of the potential effect with respect to this issue.

Of the remaining responses, around half as many thought that the Project had the potential to generate positive effects (21%) compared to those who thought the effects would be negative (14%). The area with the highest proportion of positive responses was Orkney (22%). The area with the highest level of concern about negative effects was Sutherland, where 35% expressed this view (i.e., more than twice the response from Caithness residents and three times more than Orkney residents).

Turning next to the issue of the effect of the Project on community cohesion, as of the end of December 2022, a total of 352 local responses to the questionnaire survey had been received with respect to this issue. The responses are summarised in Table 19-23 below. The largest number of these (237) were from Orkney residents, with 84 provided by Caithness residents and 31 from residents of Sutherland.

Table 19-23 Community engagement responses: potential effect of Project on community cohesion

EFFECT OF PROJECT ON COMMUNITY COHESION	CAITHNESS	SUTHERLAND	ORKNEY	TOTAL
Positive/good effect	23%	13%	18%	18%
Negative/bad effect	12%	19%	9%	11%
Neutral/no effect	45%	39%	59%	54%

EFFECT OF PROJECT ON COMMUNITY COHESION	CAITHNESS	SUTHERLAND	ORKNEY	TOTAL
Not sure	20%	29%	14%	17%

Source: Community questionnaire survey, July-December 2022

Overall, 54% of those surveyed said that they expect the Project to have a neutral effect on community cohesion. A further 17% said they were not sure of the potential effect with respect to this issue. Of the remaining responses, overall around half as many thought that the Project had the potential to generate positive effects (18%) compared to those who thought the effects would be negative (11%). However, among Sutherland residents this pattern was reversed, with 19% expecting effects to be negative and 13% expecting positive effects if the Project goes ahead.

The final theme to consider from the questionnaire survey is the potential effect of the Project on the individual's own quality of life. As of the end of December 2022, a total of 355 responses to the questionnaire survey had been received with respect to this issue. The largest number of these (239) were from Orkney residents, with 85 provided by Caithness residents and 31 from residents of Sutherland. Table 19-24 summarises these questionnaire survey responses.

Table 19-24 Community engagement responses: potential effect on personal quality of life

EFFECT OF PROJECT ON COMMUNITY COHESION	CAITHNESS	SUTHERLAND	ORKNEY	TOTAL
Positive/good effect	25%	19%	31%	28%
Negative/bad effect	15%	23%	3%	7%
Neutral/no effect	52%	48%	58%	55%
Not sure	8%	10%	9%	9%

Source: Community questionnaire survey, July-December 2022

Overall, 55% of those surveyed said that they expect the Project to have a neutral effect on their own personal quality of life. A further 9% said they were not sure of the potential effect of the Project with respect to this issue.

Of the remaining responses, the greatest proportion (28%) said that the Project had the potential to generate positive effects, with 7% saying that they thought the effects would be negative. The area with the highest proportion of positive responses was Orkney (31%) with the lowest found in Sutherland (19%). Also in Sutherland, a slightly higher proportion of the local sample expected negative effects on their personal quality of life compared to those saying

they expected positive effects (19%). However, even in Sutherland the largest proportion (48%) expected neutral effects on this issue.

19.4.4.11 Distributional effects baseline

Analysis of potential distributional effects considers the potential for the Project to generate effects on specific groups in society, including groups with protected rights. The response to the Scoping Report provided by MAU highlighted the potential for effects of the following types:

- The potential for people on lower incomes to be priced out of local housing due to demand from higher paid workers moving into the area and raising local house prices; and
- The potential for the Project to increase economic growth and a reduction in poverty overall, but unequally, leading to a rise in inequality.

Similarly, there is the potential for the Project to generate positive effects such as alleviation of deprivation in local areas through the generation of employment and training opportunities. However, if access to these opportunities is unevenly distributed, then there could be an overall increase in inequality locally. The spatial impact areas for the consideration of distribution effects are (1) Caithness and Sutherland and (2) Orkney. These areas correspond to local housing market areas as defined by housing market strategies produced for THC and OIC respectively.

Evidence for baseline characteristics relevant to a distributional assessment is obtained from three sources:

- Documents produced by THC and OIC respectively, in particular the most recent versions of housing strategies produced by each local authority. These strategies provide analysis that is based in part on purchased datasets, such as highly localised estimates of income levels;
- Other data from centralised sources, such as the ONS; and
- Responses from community questionnaire survey.

19.4.4.11.1 Evidence from local housing strategy documents: Highland

The draft HNDA produced by THC in November 2021 identified a number of trends that are relevant to the baseline situation apropos the distributional assessment. In particular, the draft HNDA highlighted the trend for continuing depopulation in both Caithness and Sutherland. Between 2011 and 2018, the population of Caithness declined by 4.1%, and Sutherland fell by 2.7% (draft HNDA, p30). These were the largest decreases of any of the sub-areas within the Highland region, whose overall population increased by 1.5% over the same period.

It is also notable that there is an acceleration of the trend towards an ageing population in both Caithness and (especially) Sutherland. The ageing trend is found across the Highlands as a whole, but both Caithness and Sutherland possess a population profile that is even more skewed towards an older population.

The evidence over the 2011-2018 period suggests that the ageing trend is accelerating faster in these areas compared to the Highland region as a whole. For example, between 2011 and 2018, the proportion of population aged 65 and over in Caithness increased from 19.7% to 23.1%, and in Sutherland it increased from 25.1% to 29.9% (draft HNDA, p30). The comparable trend for the Highland area as a whole was an increase from 18.6% in 2011 to 22.1% by 2018.

This trend is likely to be linked to a greater tendency for younger people resident in the area to leave for the purposes of post-secondary education.

The draft HNDA provides estimates of median local household income for 2018 and compares these to equivalent estimates for 2014 (draft HNDA, p44). The trend identified for Caithness is notably worse for the Highland area as a whole: between 2014 and 2018 the change identified amounted to a fall in median income of 7.3%. The equivalent change estimated for Sutherland was a rise of 3.8%.

Caithness is also identified as an area experiencing a greater concentration of income inequality, with 9.7% of the area's population residing in areas that are in the 15% most income deprived datazones in Scotland (draft HNDA, p44). On the other hand, none of Sutherland's population reside in the 15% most deprived Scottish datazones.

With respect to housing affordability, the draft HNDA identifies that across the Highland area as a whole the proportion of incomes required for all tenures of housing have increased between 2014 and 2018 at both the lower quartile and median figures. The draft HNDA does not provide any sub-area estimates of housing affordability. However, the report does provide some useful evidence of potential drivers of worsening housing affordability in sub-areas. In particular, the report highlights that in Caithness, 83% of house sales are to 'local' buyers (i.e., residents of the THC area), which is higher than the region-wide average of 75.4% (draft HNDA, p48). The equivalent percentage for Sutherland is just 46.8%. The suggestion from the report is that worsening housing affordability in areas such as Sutherland is mainly driven by sales of homes for holiday accommodation, second homes, and housing for people moving into the area for their retirement.

19.4.4.11.2 Evidence from local housing strategy documents: Orkney

The housing market dynamic in Orkney is different to that found in Caithness and Sutherland. Demand for housing in Orkney has been driven by a long term trend of an increasing population, driven mainly by net inward migration. Between 2001 and 2018, it is estimated that net migration of people (people moving to Orkney minus people moving away) was around +3,530 (Orkney Local Housing Strategy, p34). On the other hand, the natural change component of population change (i.e., births minus deaths) over the same period resulted in a net loss of around 500 people on Orkney.

In terms of future drivers of housing affordability, there is a discrepancy between population projections produced by National Records for Scotland (NRS) (2018) and those produced locally by OIC. Those produced by NRS predict a decline in residential population amounting to around 1,400 people between 2021 and 2041. Those produced by OIC predict an increase of around 1,150 inhabitants over the same period, driven by in-migration. These alternative population trend scenarios have quite different implications for future housing affordability (and housing needs more generally). OIC accept that their preferred scenario of population growth, largely driven by employment-led in-migration, will require a significant increase in local housing supply, and the Local Housing Strategy has identified measures that the Council expects will deliver the required increase in housing supply.

The evidence from the Orkney strategy indicates that housing affordability varies by area, with the Isles being the most affordable area. The Orkney mainland is divided into four housing market sub-areas, but all are quite similar with average and upper quartile property prices being generally affordable for the matching income quartile.

Orkney is not generally an area that experiences a high level of income inequality. According to data from the SIMD, none of the datazones that covers Orkney is ranked in the 15% most income deprived datazones in Scotland.

19.4.4.11.3 Evidence from the ONS

Useful evidence on income equality can be obtained from the Annual Survey of Hours and Earnings (ASHE) produced by the ONS. Data from this source is available for local authorities and Westminster constituencies. The data in Table 19-25 below summarises average hourly pay (excluding overtime) for the relevant areas, for males, females, and all workers.

Table 19-25 Average hourly rates of pay – full time workers, excluding overtime, 2021 (£)

AREA	MALE	FEMALE	ALL WORKERS
Caithness, Sutherland, and Easter Ross	£15.42	£12.32	£14.36
Orkney	£15.77	£12.64	£15.47
Scotland	£16.21	£15.62	£15.93
UK	£16.13	£14.85	£15.59

Source: ONS (ASHE, 2021)

It appears that female workers in both areas are disadvantaged compared to females in Scotland and the UK benchmark areas. For example, whilst male full time workers in Orkney earn, on average, 97.8% of the average hourly pay of males in the UK, the equivalent ratio for females in Orkney is 85.1%.

Another expression of the earnings disparity is that whereas full time female workers in Scotland earn, on average, 3.6% less than male full time workers, in both Orkney and Caithness, Sutherland, and Easter Ross the equivalent statistic is that they earn, on average, 20% less than their local male counterparts.

19.4.4.11.4 Evidence from the community questionnaire survey

A further area of evidence is that obtained from the community engagement process. The questionnaire circulated amongst consultation events included one question that asked about views regarding the potential effect of the Project on local property values. The responses to the question are summarised in the table below.

As at the end of December 2022, a total of 356 local resident responses to the questionnaire survey had been received with respect to the question about the potential effect of the Project (if it goes ahead) on property values. Table 19-26 below summarises these responses. Of these responses, the largest number (240) were from Orkney residents, with 85 provided by Caithness residents and 31 from residents of Sutherland.

Table 19-26 Community engagement responses: effect on property values

EFFECT OF PROJECT ON PROPERTY VALUES	CAITHNESS	SUTHERLAND	ORKNEY	TOTAL
Positive/good effect	14%	3%	16%	15%
Negative/bad effect	19%	32%	9%	13%
Neutral/no effect	51%	42%	62%	58%
Not sure	16%	23%	13%	15%

Source: Community questionnaire survey, July-December 2022

Overall, 15% of the overall questionnaire survey sample said that the Project could have a negative effect on property values, whilst 13% said it could have a positive effect. Just over half (58%) of the sample thought it would have no effect, whilst 15% were unsure.

However, there was a very different pattern of responses from Sutherland compared to the other two local areas: in Sutherland 32% expected a negative effect on property prices (compared to, for example, just 9% of Orkney residents).

19.4.5 Future baseline

19.4.5.1 Demographic projections

Population projections (2018-based) for Scotland and sub-national areas were published by NRS in March 2020. Table 19-27 below shows the 2018 baseline position for the Highlands and Orkney, as well as Scotland.

The NRS projections suggest that the total population of Highland and Orkney will increase slightly in the short term (2018-2025), but that from 2025 onwards the population of Highland will begin to decline. A similar trend is also predicted for Orkney, but with the population decline starting slightly later. The annual projections indicate that the population decline trend in Orkney is expected to commence from 2026 onwards.

Table 19-27 Population projections, 2018-2040 – ('000s)

AREA	2018	2025	2030	2035	2040	2018-2040 CHANGE	2018-2040 CHANGE (%)
Highland	235.5	236.8	236.4	235.3	234.1	-1.4	-0.6%
Orkney	22.2	22.3	22.3	22.1	21.9	-0.3	-1.4%
Scotland	5,438.1	5,513.7	5,549.5	5,568.5	5,574.7	136.6	2.5%

Source: NRS Population projections, 2018-based (March 2020)

19.4.5.2 Housing demand forecasts

Various population projection scenarios for the Highland area for the period up to 2040 based on the NRS population projections (2018-based) are presented in a draft *Housing Need and Demand Assessment 2020* report (HNDA) produced by THC in November 2021. The 'high migration' scenario developed in the report suggests little or no overall change in population from the 2020 to 2040 period, with other scenarios suggesting various levels of decline in the population of the area over the same period. The implication of this is that achieving a stable population in the Highland area over the next few decades requires high levels of migration into the area.

Demographic trends that underlie the population projections contained in THC draft HNDA include the following:

- A falling average birth rate;
- Rising average life expectancy;
- Out-migration from the area by younger people, either for the purpose of higher education or employment, or both; and
- In-migration into the area by older age groups.

It is noteworthy that the draft HDNA identifies that housing pressures vary considerably across the Highland area, with Caithness specifically identified as exhibiting low housing demand pressure. The report identifies that over the 10-year period to 2028/29, a total of 9,039 households will require additional housing in the Highland area. Of this figure, the draft HNDA identifies that 385 (4.3%) are accounted for by the Caithness housing market area (draft HNDA, p92).

These figures relate to demand under a high migration scenario that has been selected as the principal scenario for local development planning purposes.

The current housing strategy for Orkney produced scenarios for housing demand up to year 2032. The Principal Scenario developed in the Orkney HDNA predicts average annual demand for 63 dwellings per year over the 2017-2032 period.[23]

In terms of meeting future demand for housing, the strategy states that:

> *'The Council does not have a population target that it would like Orkney to achieve or be restricted to. However, it is understood that inward migration is a key factor in expanding and sustaining Orkney's economy. Inward migration will continue to be crucial in continuing to develop Orkney's economy and provide the services delivered throughout the islands. For that to happen there will need to be additional new housing development, across all tenures, in excess of that already required to meet the housing needs of households already in Orkney.' (Local Housing Strategy 2017-2022, page 38).*

19.4.5.3 School roll forecasts

Data provided by THC indicates that school rolls in primary schools located in Caithness and North Sutherland is expected, overall, to decline by just over 5% between 2022 and 2027.

Data provided by THC indicates that school rolls in secondary schools in the area is expected, overall, to decline by just over 4% between 2022 and 2027.

Current school roll forecasts from OIC indicate that the predicted levels of primary school enrolment are expected to fall by around 60 places between 2020/21 and 2025/26, representing a decline of around 3%.

Between 2020/21 and 2025/26 there is expected to be a further decline in overall secondary school enrolment on Orkney, amounting to just under 20 places (representing a fall of 1%).

19.4.6 Summary and key issues

The principal features of the baseline environment that are relevant to the assessment of the potential impact of the Project on socio-economics are as follows:

Demographics

- The population of Caithness has been falling with the average age of inhabitants rising. The population of the Highland area has been growing slowly, but recent population projections commissioned by THC indicate a potentially declining population over the period to 2040. This trend is likely to be linked to the lack of available employment opportunities locally, but young people may also be leaving the area to participate in further or higher education opportunities elsewhere in Scotland or the UK.

[23] *Orkney Islands Council, Local Housing Strategy 2017-2022, page 40*

- The population trend for Orkney over the last 15 years shows stronger population growth, in excess of that occurring across Scotland as a whole. Current population projections predict a gradual fall in Orkney's population to 2040, combined with a steady ageing trend for Orkney's population.

Labour market

- Employment and economic activity rates in Caithness are lower than for Scotland as a whole, whereas for the Highland and Orkney areas they tend to be higher than benchmark areas. However, there is some evidence of a more recent deterioration in the level of employment (and the employment rate) in Orkney.
- Average workplace-based earnings levels in Caithness are slightly higher than the averages across the Highland area and also compared to Scotland. On the other hand, average earnings levels for those working in Orkney are over three percentage points higher than the Scotland average, and around two percentage points higher than the overall UK average.

Business sectors

- The energy supply sector is an important component of the Caithness economy. Although the Dounreay Nuclear Facility is undergoing decommissioning, this is a lengthy process that is expected to support employment in the area until at least the 2030s.

Tourism and Recreation

- Accommodation and food & drink services is a comparatively important sector for direct employment for the Highland area economy (compared to Scotland), but this feature is less evident for the Caithness area. Nevertheless, according to STEAM data tourism activity is estimated to account for around 3,300 FTE jobs in Caithness. STEAM data from 2019 indicates that Caithness received around 917,000 visits p.a., and that visitor spending amounted to around £143 million annually, supporting around 3,300 FTE jobs (including indirect and induced effects).
- Equivalent data for Orkney (also dating from 2019) indicates that the area receives around 360,000 visitors annually. These visits are estimated to generate around £78 million of annual expenditure and support approximately 2,000 FTE jobs (including indirect and induced effects).
- Local outdoor amenities such as core paths, beaches, nature reserves, marine recreation resources and archaeological and other heritage features are potentially important tourism assets, as well as being potentially important recreation resources for local residents.

Commercial fisheries

- Commercial fishing activity supports over 200 employee jobs in Orkney and Caithness combined, with annual landings of fish at Scrabster and Stromness were worth around £33 million in 2021. Onshoring processing facilities exist in both Orkney and Caithness, and account for a further 300 or so jobs in these areas.

GVA per capita

- Data from 2018 indicates that GVA per capita for the Highland area is around 4.3% higher than for Scotland as a whole, with equivalent data not available for Caithness and Sutherland. GVA per capita in Orkney is around 9.3% higher than the Scotland average.

Supply chain opportunities

- Analysis of business and employment data indicates that there are various sub-sectors present in Orkney, Caithness, Sutherland, and the wider Highland area that have the potential to supply content to the Project. These include various manufacturing sub-sectors, local ports and harbours (such as Scrabster and the proposed Scapa Deep Water Quay), transportation services, accommodation services, and various categories of professional services.

Housing and Local Services

- Health and education services in the Caithness and Orkney areas appear to be operating within capacity. Population trends for the area indicate that demand pressures for these services are not likely to increase over the next two decades.
- Caithness has been identified as an area of low housing pressure by THC's draft HNDA (November 2021).
- The Principal Scenario developed in the Orkney HDNA predicts average annual demand for 63 dwellings per year over the 2017-2032 period. The Orkney housing market has generally been more buoyant than Caithness, driven by population growth, and there is more community concern about housing affordability.

Deprivation

- There are concentrations of deprivation in Caithness, most notably in the Wick North and Wick South wards.

Communities concerns and priorities

- The top priority for communities in Caithness and Sutherland – as identified by responses to the *My Life in the Highlands and Islands survey* undertaken by HIE – is a greater number of job opportunities. In Orkney, the top priority is access to affordable housing for local families.
- Evidence from the community questionnaire survey indicates that on most topics the benefits of the Project are considered likely to exceed adverse effects. One exception is the potential impact on crime and antisocial behaviour, but even on this topic the majority of people surveyed (75%) expect the Project to have neutral effects.

19.4.7 Data limitations and uncertainties

The baseline data presented in this chapter is based on a review of evidence from national and local data sources including published sources and data collected specifically for the Project. Consideration has been given to the potential impacts of the COVID-19 pandemic on the values of some socio-economic indicators, such as levels of employment and labour market performance. Where indicators are judged to be potentially affected by the disruptive

effects of the COVID-19 pandemic, a decision has been taken to utilise where possible pre-pandemic (e.g. 2019) levels for these indicators rather than the most up-to-date data that may be available. The indicators affected by this decision are as follows:

- Labour market capacity indicators – Employment rate and Economic activity rate;
- Qualifications of the working age population (NVQs);
- Employment by industry;
- Potential supply chain representation;
- Average earnings;
- Location Quotients; and
- Volume and value of the tourism sector.

The community questionnaire survey generated a lot of data used in the assessment, but there are certain groups that are 'harder to reach' or 'seldom heard' (such as, for example, minority groups, younger people, and working-age people in full time employment). Considerable effort was made to identify and reach these groups, but there is some residual uncertainty regarding the rate of response from such groups.

Overall, the data collected to inform the assessment is considered appropriate to support a robust impact assessment.

19.5 Impact assessment methodology

19.5.1 Impacts requiring assessment

The impacts identified as requiring consideration for socio-economics are listed in Table 19-28. Information on the nature of impact (i.e. direct or indirect) is also described.

Table 19-28 Impacts requiring assessment for socio-economics

POTENTIAL IMPACT	NATURE OF IMPACT
Construction (including pre-construction) and decommissioning*	
Project activities leading to an effect on employment	Direct
Project activities leading to an effect on economic output (GVA)	Direct
Project activities leading to an effect on demand for housing, education, healthcare, recreation resources, and other local services	Indirect
Project activities leading to an impact on the tourism industry	Direct and indirect

POTENTIAL IMPACT	NATURE OF IMPACT
Project activities leading to an impact on components of the local commercial fishing industry located onshore	Indirect
Project activities leading to socio-cultural impacts	Indirect
Project activities leading to distributional impacts	Indirect
Operation and maintenance	
As per construction	Direct and indirect

*** In the absence of detailed information regarding decommissioning works, and unless otherwise stated, the impacts during the decommissioning of the offshore Project considered analogous with, or likely less than, those of the construction stage. Where this is not the case, decommissioning impacts have been listed separately and have been assessed in section 19.6.3.**

19.5.2 Impacts scoped out of the assessment

Based on feedback received from stakeholders at the Scoping Report stage, there are no categories of Socio-economic impact that are proposed to be scoped out of the assessment.

With respect to commercial fisheries, it was decided that this chapter would focus on the potential interactions of the Project with onshore receptors, such as ports and harbours, fish processing businesses, and the onshore supply chain that supports the local commercial fishing industry. Other aspects, such as potential interactions between the Project and local commercial fishing businesses, are dealt with as part of the commercial fisheries topic. These matters are presented and assessed in chapter 14: Commercial fisheries.

19.5.3 Assessment methodology

An assessment of potential impacts is provided separately for the construction, operation and maintenance, and decommissioning stages.

The quantification of assessment of aspects of the socio-economics topic was a desk-based exercise making use of Project-specific information. In particular, the scale of potential effects on socio-economic indicators such as direct, indirect, and induced jobs and GVA has been estimated using a bespoke economic model. The model is based on expected levels of the Project expenditure during each stage of the Project. Within this model, estimates for job and GVA generation in each stage have been developed using a combination of:

- Assumptions drawn from published national datasets, including multiplier coefficients from Input-Output tables published for Scotland, as well as data that permit estimation of average numbers of jobs and value of GVA per £1 million of Project expenditure across various categories; and

- Ex-ante and ex-post research drawing on the experience of other offshore wind farms elsewhere in Scotland and the UK.

The quantified estimates of employment and GVA impacts during the construction and operation and maintenance stage are based on expected levels of Project expenditure during each stage, using estimated information supplied by OWPL. However, the geographical distribution of Project expenditure is subject to uncertainty, primarily because the out-turn spatial distribution of expenditure to Tier-1 suppliers would be dependent on the results of a procurement process involving competitive tendering which has not yet commenced. In addition, there is further uncertainty associated with the location of sub-contractors who successfully bid for contracts to supply services to the main contractors of the Project.

The approach taken to address these uncertainties is to develop two assessment scenarios, reflecting an assessment undertaken on the current and expected future capabilities and capacity of UK, Scottish, and local companies to potentially supply the required goods and services to the Project at each stage.

An expanded explanation of the approach taken to the development of scenarios and the specific assumptions used in the estimation of impacts for indicators such as employment and GVA are described in the supporting study *Socio-economics Assessment (Quantification) Methodology*.

To summarise the approach taken, two scenarios were developed, designated as 'Low' and 'High', respectively, whereby:

- Low Case scenario: Reflects an informed judgement concerning the minimum realistic level of the Project expenditure that could reasonably be expected to accrue to suppliers located in defined spatial areas during successive Project stages; and
- High Case scenario: Reflects an informed judgement concerning the maximum realistic level of the Project expenditure that could reasonably be expected to accrue to suppliers located in defined spatial areas during successive Project stages.

The specification of both scenarios reflects information concerning current and likely future levels of investment in relevant infrastructure, production capacity, and workforce development. The scenarios also account for what is currently known, and may be reasonably expected, in terms of competing demands of the local, national, and international supply chain from other offshore renewables developments in Scotland, the UK, and northern Europe.

Quantification of the potential demand for workers located in various spatial areas (such as Caithness and Sutherland, Highland, Orkney, and Scotland) has also been used to assess the potential effects of the Project on additional demand for local services, such as healthcare, housing (such as rented accommodation) and also potential demand for temporary accommodation (such as hotel bedspaces that may be needed to accommodate visiting specialists). This aspect of the assessment has also been informed by evidence and insight gained from engagement with local service providers and other stakeholders, as well as insights gained from local community consultation events.

Table 19-29 below summarises the sensitivity criteria used in the assessment.

Table 19-29 Sensitivity criteria used in the assessment for socio-economics

SENSITIVITY OF RECEPTOR	DEFINITION
High	The receptor is identified as a strategic or policy priority. There is evidence of considerable socio-economic or socio-cultural challenge for the receptor in the study area. The receptor has little or no ability to recover or to adapt to change.
Medium	The receptor is identified as a strategic or policy priority. There is evidence of moderate socio-economic or socio-cultural challenge for the receptor in the study area. The receptor has either a limited or delayed ability to recover or to adapt to change.
Low	The receptor is not identified as a strategic or policy priority. There is evidence that the receptor is resilient and/or there is little or no evidence of a particular challenge or under-performance or vulnerability for the receptor in the study area. The receptor has a well-developed ability or inherent capacity to recover or to adapt to change.
Negligible	The receptor is not identified as a strategic or policy priority. There is evidence of good levels of performance and no particular weaknesses for the receptor in the study area.

The criteria used for assessing the magnitude of change with respect to socio-economics receptors is summarised in Table 19-30 below.

Table 19-30 Magnitude criteria used in the assessment for socio-economics

MAGNITUDE CRITERIA	DEFINITION
High	A large (greater than 1.0%) change in baseline conditions in terms of absolute and/or proportionate change.
Medium	A moderate (greater than 0.5% and up to 1.0%) change in baseline conditions in terms of absolute and/or proportionate change.
Low	A minor (greater than 0.1% and up to 0.5%) change in baseline conditions in terms of absolute and/or proportionate change.
Negligible	Either no change from the baseline condition or change up to 0.1% in baseline conditions.

It should be noted that changes in baseline conditions for socio-economics receptors can be either beneficial or adverse. For example, a change that leads to an increase in the number of jobs directly or indirectly (through supply chains) would normally be regarded as a beneficial effect, whilst the displacement of tourism activity would likely be regarded as an adverse effect.

The consequence and significance of effect is then determined using the matrix provided in chapter 7: EIA methodology. In this chapter, consequences that are significant and concern receptors regarded as beneficial – such as the creation of jobs – are highlighted in summary tables by using the colour green.

19.5.4 Embedded mitigation

As described in chapter 7: EIA methodology, certain measures have been adopted as part of the Project development process in order to reduce the potential for impacts to the environment or to maximise the potential for beneficial impacts. Some of these embedded mitigation measures include initiatives in collaboration with third-parties that OWPL will seek agreement on post-consent. These have been accounted for in the assessment summarised in Table 19-31 below.

The requirement for additional mitigation measures (secondary mitigation) will be dependent on the significance of the effects on socio-economics receptors.

A Supply Chain Development Statement (SCDS) was prepared for the Project and submitted to Crown Estates Scotland (CES) in July 2021 as part of the ScotWind leasing process.[24] The SCDS sets out the commitment by OWPL to a £105 million investment in developing supply chain capacity within the UK. This includes over £9 million expected to be invested in upgrading ports and harbours in Caithness and Orkney. OWPL has set a target of 40% Project content sourced from Scotland, with a further 20% elsewhere in the UK. A programme of events is being delivered to raise awareness of opportunities available to potential participants in the Project supply chain. The socio-economics assessment in this chapter takes on board information contained in the SCDS, as well as responses of local stakeholders via the SEWG.

Table 19-31 Embedded mitigation measures and management plans relevant to socio-economics

MITIGATION MEASURE	FORM (PRIMARY OR TERTIARY)	DESCRIPTION	HOW MITIGATION WILL BE SECURED
Embedded mitigation			
Supply chain investment fund	Primary	OWPL have committed £33.5 million to fund co-investment with the supply chain to help deliver a step change in Scottish and UK supply chain preparedness. This fund will be allocated across key areas working closely with individual suppliers and available across all tiers of suppliers. It will also be used by the partners to leverage match funding from third parties into the supply chain, further enhancing its impact across Scotland and the UK.	Secured via the SCDS and associated financial penalties for failing to deliver against agreed targets.
Collaborative supplier design and supply studies	Primary	From site award, OWPL would fund UK supplier design and supply studies to allow suppliers to plan investment in additional capability and capacity, and to position themselves competitively against the Project's procurement requirements. OWPL would support smaller suppliers to engage and help improve their preparedness and integration into the Project's supply chain.	Secured via the SCDS and associated financial penalties for failing to deliver against agreed targets.
Investment to support local port and harbour infrastructure	Primary	OWPL is committed to maximising the use of local ports and harbours and continues to work closely with Orkney Harbour Authority and Scrabster Harbour Trust to enable technical and commercial	Secured through a Memorandum of Understanding with collaborating local ports and harbour operators.

[24] *The SCDS can be found at: Supply Chain for the West of Orkney Windfarm.*

MITIGATION MEASURE	FORM (PRIMARY OR TERTIARY)	DESCRIPTION	HOW MITIGATION WILL BE SECURED
		collaboration on the development of new facilities to support construction and operations. As part of the SCDS, OWPL is committed to £9.3 million of investment to support local port and harbour infrastructure in Orkney and Caithness within the first three years of Project development. This investment will help facilitate local participation in both the Project construction and operational stages.	Secured via the SCDS and associated financial penalties for failing to deliver against agreed targets.
European Marine Energy Centre (EMEC) programme to support innovation and cost reduction relevant to the Project and other ScotWind developments	Primary	OWPL is funding a bespoke programme with the EMEC to support innovation and cost reduction relevant to the Project and other ScotWind developments, but which may also address technical challenges across the wider offshore wind portfolio held by both Corio Generation and TotalEnergies. The programme will support the long-term sustainability of EMEC which plays an important role in the Orkney economy.	Funding is already committed for this initiative. Secured via the SCDS and associated financial penalties for failing to deliver against agreed targets.
North of Scotland - Workforce Strategy	Primary	OWPL recognise that large construction projects, require a diverse set of skills and expertise to complete each project successfully. However, in areas with relatively small populations, the pool of locally skilled and experienced workers may be limited, making it challenging to find qualified personnel. The West of Orkney Windfarm shall continue to collaborate and coordinate with other project developers and operators across the north of Scotland to help develop a Local Workforce Strategy. Projects/employers can share their knowledge of the local labour market, such as identifying transferrable skills and roles. Additionally, they can coordinate training and development programs to enhance the skills of existing workers or upskill new recruits. OWPL have already worked alongside other offshore wind developers to help fund UHIs Science, Technology, Engineering and Mathematics (STEM) programme. This is just one example of the type of collaboration and coordination required help to address skill shortages by identifying and filling critical roles across projects.	The measure will form part of the Projects commitment register and will be tracked as the Project progresses alongside other planning conditions.
Local skills development programme	Primary	OWPL would deliver a skills programme during the first five years of the project's development to support long term employment opportunities in the wind sector and to support its ambition to achieve a 50:50	Secured via the SCDS and associated financial penalties

MITIGATION MEASURE	FORM (PRIMARY OR TERTIARY)	DESCRIPTION	HOW MITIGATION WILL BE SECURED
		gender balance across all operations from first generation. OWPL have signed agreements with the University of Highlands & Islands and the Energy Skills Partnership to deliver a local multi-level programme focussed on STEM development, diverse workforce programme, and student sponsorship programme. As a first stage, UHI will extend its outreach programme to schools in Orkney, the Western Isles, Shetland, Argyll and Bute, Moray and Perthshire local authority areas. The development has been made possible thanks to £900,000 of funding led by the West of Orkney Windfarm, a joint venture comprising Corio Generation, TotalEnergies and RIDG, alongside Floating Energy Alliance and their Buchan Offshore Wind project, Thistle Wind Partners and Ossian, a joint venture project led by SSER, Marubeni and Copenhagen Infrastructure Partners. The expansion will be supported through the employment of eight part-time and two full-time STEM coordinators. The full-time roles will be located in Caithness, Sutherland and Orkney thanks to additional, targeted support from the West of Orkney Windfarm.	for failing to deliver against agreed targets.
Local accommodation strategy	Primary	The West of Orkney Windfarm workforce is expected to experience fluctuations in bed availability annually and during the construction and operation stages. To manage this, OWPL would work with local accommodation providers, agencies, and other projects to develop and implement a Local Accommodation Strategy prior to construction in 2027. OWPL wish to promote the use of local accommodation during the winter months when demand may be typically lower in an effort to help spread benefits throughout the year. The first step in developing this strategy is to identify all suitable accommodation options. This may include hotels, guest houses, bed & breakfasts, and other rental properties. If necessary, OWPL and its contractors may also explore sites for temporary accommodation to relieve pressure on availability during the peak season. Where possible, the project will seek accommodation close to the onshore work sites and local ports and harbours to reduce traffic. In any case the accommodation should be of a high standard, providing workers a safe and comfortable environment.	The measure will form part of the Projects commitment register and will be tracked as the Project progresses alongside other planning conditions.

MITIGATION MEASURE	FORM (PRIMARY OR TERTIARY)	DESCRIPTION	HOW MITIGATION WILL BE SECURED
		The next step is to establish partnerships with suitable, local accommodation providers. This may be achieved through the negotiation of long-term contracts or through the establishment of preferred supplier agreements. OWPL want to work in partnership with local accommodation so they can maximize the utilisation of available beds.	
Visitor information stops	Primary	On a clear day, the West of Orkney Windfarm shall be visible from the North Coast 500 and Orkney. Passing tourists may be interested in the project and OWPL would like to enhance the visitor experience by providing some information and infrastructure. OWPL shall work with the local planning authorities to develop a visitor information stop in each local authority area, which ideally has a line of sight to the project. Each visitor stop will include features such as a car park, project information boards, public toilets, electric vehicle charging points, appropriate waste bins etc. The proposed location, layout and features of each visitor information stop shall be discussed with THC and OIC and may require further planning approval. OWPL shall aim to open the visitor information stops during construction.	The measure will form part of the Projects commitment register and will be tracked as the Project progresses alongside other planning conditions.
Operation and maintenance base public open days	Primary	OWPL shall periodically open the Operations and Maintenance base at to the public. Public open days will provide a unique opportunity for visitors to learn more about the West of Orkney Windfarm and talk with the staff maintaining the project. The open days shall aim to attract a diverse range of visitors, including tourists, locals, families, school groups, and individuals. The timing of the open days shall be discussed with relevant stakeholders, ideally, coincide with other local events or attractions.	The measure will form part of the Projects commitment register and will be tracked as the Project progresses alongside other planning conditions.
Construction method statement	Tertiary	A construction method statement will be prepared to manage the construction process so as to avoid harm to construction personnel and third parties. This statement will reflect offshore renewable industry best practice, relevant health and safety and environmental management procedures, and best practice approaches to ensuring appropriate behaviour on the part of the workforce throughout	For the offshore Project, The production and approval of the CMS will be required under Section 36 and/or Marine Licence conditions. For the onshore Project, this commitment will be secured through a condition of the

MITIGATION MEASURE	FORM (PRIMARY OR TERTIARY)	DESCRIPTION	HOW MITIGATION WILL BE SECURED
		the period of construction, including policies on alcohol and drug mis-use.	Planning Permission in Principle Application.
A community benefits programme	Primary	A Community Benefits Fund (CBF) will commence at first generation and continue for the operational life of the Project (30 years). The CBF will be shared across communities in Caithness, Sutherland and Orkney. Short and long-term priorities have been identified, that will continue to evolve as the Project progresses. Short term priorities include supporting existing local initiatives (e.g. through sponsorship), local business grants and support for energy bills. Medium term priorities include digital connectivity, affordable housing and sustaining communities. Long term priorities include natural capital, community.	Secured via the SCDS and associated financial penalties for failing to deliver against agreed targets.
Decommissioning Programme	Tertiary	The development of, and adherence to, a Decommissioning Programme, approved by Scottish Ministers prior to construction and updated throughout the Project lifespan.	The production and approval of a Decommissioning Programme will be required under Section 105 of the Energy Act 2004 (as amended).

19.5.5 Worst case scenario

As detailed in chapter 7: EIA methodology, this assessment considers the worst case scenario for the offshore Project parameters which are predicted to result in the greatest environmental impact, known as the 'worst case scenario'. The worst case scenario represents, for any given receptor and potential impact, the design option (or combination of options) that would result in the greatest potential for change.

Given that the worst case scenario is based on the design option (or combination of options) that represents the greatest potential for change, the development of any alternative options within the design parameters will give rise to no worse effects than those assessed in this impact assessment. Table 19-32 presents the worst case scenario for potential impacts on socio-economics during construction, operation and maintenance, and decommissioning.

In the case of socio-economics, some of the expected effects of the Project are considered to be beneficial, such as the creation of employment opportunities during both the construction and operation & maintenance stages of the Project. For receptors such as employment and GVA, the worst case scenario would be the Low scenario, because this scenario would be expected to deliver the smallest number of jobs during the construction and operation & maintenance stages.

Conversely, for some receptors (such as tourism), the potential net effect of the Project may be adverse, for example from displacement effects on tourism accommodation and attractions. The worst case scenario with respect to this receptor is the High scenario, because this scenario would be expected to be associated with the largest potential for displacement effects on visitor expenditure during the construction and/or operation and maintenance stage of the Project.

Table 19-32 presents the worst case scenario for potential impacts on socio-economics receptors during construction, operation and maintenance, and decommissioning.

The period of time for construction and installation is expected to be four years. Additional to this will be some pre-construction activities that will take place between Project consent and construction (e.g. UXO clearance and boulder clearance). The specific timing of which will depend on the specific activity.

Table 19-32 Worst case scenario specific to Socio-economic receptor impact assessment

POTENTIAL IMPACT	WORST CASE SCENARIO	JUSTIFICATION
Construction		
Effects on employment and GVA	Construction expenditures are based on up to 125 WTGs, associated foundations, inter-array cables, five offshore substation platforms, offshore export cable(s), and onshore infrastructure (including onshore export cables and an onshore substation) as detailed in chapter 5: Project description. A four-year period for offshore construction, with an additional year for site preparation activities (e.g. UXO clearance and boulder clearance). The onshore construction activities with take place over the same period of time. It is anticipated that:[25] • Between 1.1% and 2.4% of construction stage expenditure occurs in Caithness and Sutherland; • Between 1.4% and 3.8% of construction stage expenditure occurs in Highland; • Between 1.2% and 1.9% of construction stage expenditure occurs in Orkney;	The worst case scenario for these receptors are the outcomes expected under the Low Case. This is because effects such as increases in the number of jobs and value of GVA are widely regarded as beneficial, and the scale of effects is lowest under the Low Case scenario.

[25] The lower bound percentage figures set out here are the assumptions used in the modelling of the economic impacts associated with the Low Case, whereas the higher bound figures are those used in modelling the High Case. Further detail is found in the supporting study Socio-economics Assessment (Quantification) Methodology.

POTENTIAL IMPACT	WORST CASE SCENARIO	JUSTIFICATION
	• Between 4.0% and 24.6% of construction stage expenditure occurs in Scotland; and • Between 15.6% and 63.4% of construction stage expenditure occurs in the UK.	
Effects on Housing, Healthcare, Education, and other local services	As for employment and GVA (construction stage).	The worst case scenario for these receptors are the outcomes expected under the Low Case. The Project is expected to require an inflow of workers moving into the area to take advantage of employment opportunities created during the construction stage of the Project. This is expected to create additional local demand for high quality housing and for local services in the short to medium term. This is considered to be a beneficial effect by local stakeholders, as confirmed by feedback from the SEWG.
Effects on the tourism industry	As for employment and GVA (construction stage), plus: • Potential offshore area of exclusion (for marine and water-based tourism and recreational activities);[26] • The offshore cable export corridor; and • The export cable landfall and grid connection sites.	The Project has the potential to generate both positive and negative effects on the local tourism industry. Positive effects may be generated through additional demand for accommodation and food & drink services to meet the needs of the construction workforce. This could be especially beneficial during periods outside the main tourism season. Negative effects could be created through any deterrence effect on visitors to the area. Negative effects could also be experienced by attractions operators, for example if visitors are displaced from tourist accommodation (for example, if accommodation businesses focus on

[26] *The exclusion areas comprises of a 500 metre statutory safety zone around WTGs and offshore substation platforms during construction, implemented on a rolling basis. There is also a 500 metre advisory safety zone around construction vessels and areas of cable awaiting burial or protection.*

POTENTIAL IMPACT	WORST CASE SCENARIO	JUSTIFICATION
		accommodating the Project construction workforce and reduce the number of bedspaces available to visitors). On balance, a pre-cautionary approach has been taken, whereby the negative effects on the tourism industry are assumed to be likely to more than offset the potential positive effects. Therefore, the worst case scenario from the point of view of the tourism industry receptor is the High Case, as this scenario is associated with a greater inflow of workers moving into the area to take advantage of temporary employment opportunities created during the construction stage.
Effects on commercial fisheries (onshore industry and supply chain)	As for employment and GVA (construction stage).	The worst case scenario for these receptors are the outcomes expected under the High Case. The Project has the potential to disrupt onshore components of the local commercial fishing industry through interruptions to the landing of fish and/or reductions in the intensity of fishing effort by local fishing vessels.
Socio-cultural effects	As for employment and GVA (construction stage).	The worst case scenario for these receptors are the outcomes expected under the High Case. The Project has the potential to affect community character and through the potential for worsening existing levels of crime and anti-social behaviour.
Distributional effects	As for employment and GVA (construction stage).	The worst case scenario for these receptors are the outcomes expected under the High Case. The Project has the potential to affect the affordability of local housing and to affect lower income households thereby disproportionately.

POTENTIAL IMPACT	WORST CASE SCENARIO	JUSTIFICATION
Operation and maintenance		
Effects on employment and GVA	Annual operation and maintenance stage expenditures are based on up to 125 WTGs, foundations, five offshore substation platforms, inter-array cables, export cable(s), and onshore infrastructure (including onshore export cables and an onshore substation). As detailed in chapter 5: Project description, the operation life of the Project is expected to be a minimum of 30 years. It is anticipated that:[27] • Between 37.5% and 47.4% of operation and maintenance stage expenditure occurs in Caithness and Sutherland; • Between 44.2% and 50.8% of operation and maintenance stage expenditure occurs in Highland; • Between 4.4% and 6.8% of operation and maintenance stage expenditure occurs in Orkney; • Between 51.3% and 64.7% of operation and maintenance stage expenditure occurs in Scotland; and • Between 75.9% and 87.0% of operation and maintenance stage expenditure occurs in the UK.	As for the Construction stage.

[27] The lower bound percentage figures set out here are the assumptions used in the modelling of the economic impacts associated with the Low Case, whereas the higher bound figures are those used in modelling the High Case. Further detail is found in the supporting study Socio-economics Assessment (Quantification) Methodology.

POTENTIAL IMPACT	WORST CASE SCENARIO	JUSTIFICATION
Effects on Housing, Healthcare, Education, and other local services	As for employment and GVA (operation and maintenance stage).	As for the Construction stage.
Effects on the tourism industry	As for employment and GVA (operation and maintenance stage).	As for the Construction stage.
Effects on commercial fisheries (onshore industry and supply chain)	As for employment and GVA (operation and maintenance stage).	As for the Construction stage.
Socio-cultural effects	As for employment and GVA (operation and maintenance stage).	As for the Construction stage.
Distributional effects	As for employment and GVA (operation and maintenance stage).	As for the Construction stage.
Decommissioning		
In the absence of detailed information regarding decommissioning works, the worst case scenario for decommissioning would be expected to be similar to that for the construction stage. The decommissioning approach is set out in chapter 5: Project description.		

19.6 Assessment of potential effects

19.6.1 Potential effects during construction (including pre-construction)

19.6.1.1 Potential effect on employment during construction (including pre-construction)

The worst case scenario from the perspective of the employment receptor relates to the number of jobs expected to be created during the construction stage that is associated with the Low scenario. The effects considered include those that are involved in both the manufacture and installation of Project structures and components. Project effects associated with the employment receptor are beneficial.

Job creation is a strategic priority for the Scottish Government (and also for the UK Government) and for both THC and OIC. At a national level, the labour market has a very high level of adaptability given the long-term trend for job growth. At a more local level, labour market evidence suggests a moderate level of resilience and adaptability for the Highland and Orkney areas, but for Caithness and Sutherland there is a higher level of sensitivity due to the lower rates of employment and economic activity evident there compared to benchmark areas.

Given the policy priorities and available evidence on resilience, the sensitivity of the receptors is assessed to vary by spatial area, as follows:

- Caithness and Sutherland: The receptor has a High level of sensitivity;
- Highland and Orkney: The receptors have a Medium level of sensitivity; and
- Scotland and UK: The receptors have a Low level of sensitivity.

Table 19-33 below presents estimates for the average annual number of workforce jobs expected to be created within each spatial area during the construction stage for both the Low Case and the High Case scenarios. Estimates in the table are provided for both (1) Direct plus Indirect jobs and (2) Induced jobs, where:

- Direct jobs are people employed by both OWPL and the main contractors working on Project construction;
- Indirect jobs are people working on the construction of the Project employed by sub-contractors, and also jobs elsewhere in the supply chain for the Project that are attributable to Project expenditure; and
- Induced jobs are additional jobs within each spatial area that are supported by expenditure of remuneration earned by the Project workforce (including both direct and indirect jobs).

For complex construction developments, in practice it is difficult to predict with accuracy which roles will be undertaken by main contractors compared to sub-contractors. Hence, the approach taken is to combine Direct and Indirect jobs into a single figure. For both the Low Case and the High Case, a 5-year period is used to assess the significance of effects during the construction period (1-year of pre-construction activities, followed by a 4-year construction period; overall including site preparation, fabrication, marshalling, and installation activities).

It should be noted that the figures in Table 19-33 are rounded to the nearest whole number. Column totals may not sum exactly due to rounding of decimals.

Table 19-33 Expected Magnitude of annual employment effects during construction (including pre-construction)

INDICATOR	CAITHNESS AND SUTHERLAND LOW	CAITHNESS AND SUTHERLAND HIGH	HIGHLAND LOW	HIGHLAND HIGH	ORKNEY LOW	ORKNEY HIGH	SCOTLAND LOW	SCOTLAND HIGH	UK LOW	UK HIGH
Annual Direct + Indirect workforce jobs	81	200	167	453	123	281	538	1,562	1,266	3,059
Annual Induced jobs	15	32	31	76	23	49	101	283	265	662
Annual Total Jobs	96	232	198	529	147	330	640	1,845	1,530	3,721

Source: Development Economics Limited estimates, March 2023

Depending on the outcome of Project procurement processes and the potential future pipeline of investment in additional supply chain capacity, the out-turn for construction stage employment in areas such as Caithness and Sutherland, and in Orkney could be considerably higher than the estimates provided in the table for the worst case scenario (i.e., the Low Case figures). Embedded mitigation measures addressing workforce recruitment and promoting careers in the renewable sector to young people are intended to increase the proportion of the workforce recruited from these areas.

For the local spatial area of Caithness and Sutherland, Project expenditure would be expected to generate an average annual total of between 81 and 200 annual direct/indirect jobs during construction. The 2019 baseline total for employment in potential supply chain industries located in Caithness and Sutherland was approximately 2,400 jobs. The potential addition of between 81 and 200 jobs to this baseline total would represent a temporary increase of between 3.4% and 8.3% to the baseline figure. The worst case scenario, therefore, is an increase of 3.4%

The magnitude of impact for construction stage employment in Caithness and Sutherland is therefore concluded to be High under the worst case scenario.

For the local spatial area of Highland, Project expenditure would be expected to generate an average total of between 167 and 453 annual direct/indirect workforce jobs during construction. The 2019 baseline total for employment in potential supply chain industries located in Highland was approximately 23,650 jobs. The potential addition of between 167 and 453 jobs to this baseline total would represent a temporary increase of between 0.71% and 1.9% to the baseline figure. The worst case scenario, therefore, is an increase of 0.71%. The magnitude of impact for construction stage employment in Highland is therefore concluded to be Medium under the worst case scenario.

For the local spatial area of Orkney, Project expenditure would be expected to generate an average total of between 123 and 281 annual direct/indirect workforce jobs during construction. The 2019 baseline total for employment in potential supply chain industries located in Orkney was approximately 1,600 jobs. The potential addition of between 123 and 281 jobs to this baseline total would represent a temporary increase of between 7.7% and 17.6% to the baseline figure. The magnitude of impact for construction stage employment in Orkney is therefore concluded to be High under the worst case scenario.

For Scotland, Project expenditure would be expected to generate an average total of between 538 and 1,562 annual direct/indirect workforce jobs during construction. The 2019 baseline total for employment in potential supply chain industries located in Scotland was approximately 390,000 jobs. The potential addition of between 538 and 1,562 jobs to this baseline total would represent a temporary increase of between 0.14% and 0.40% to the baseline figure. The magnitude of impact for construction stage employment for Scotland is therefore concluded to be Low under the worst case scenario.

For the UK, Project expenditure would be expected to generate an average total of between 1,266 and 3,059 annual direct/indirect workforce jobs during construction. The 2019 baseline total for employment in potential supply chain industries located in the UK was approximately 4.68 million jobs. The potential addition of between approximately 1,266 and 3,059 jobs to this baseline total would represent a temporary increase of between 0.03% and 0.07% to the baseline figure. The magnitude of impact for construction stage employment for the UK is therefore concluded to be Negligible under the worst case scenario.

19.6.1.1.1 Evaluation of significance: employment effects during construction (including pre-construction)

The significance of the employment effects during construction for the worst case scenario varies for each of the areas under consideration:

- Caithness and Sutherland: the combination of a High sensitivity receptor and a High magnitude of impact produces a **Major** consequence that is **beneficial** and **significant** in EIA terms;
- Highland: the combination of a Medium sensitivity receptor and a Medium magnitude of impact produces a **Moderate** consequence effect that is **beneficial** and **significant** in EIA terms;
- Orkney: the combination of a Medium sensitivity receptor and a High magnitude of impact produces a **Moderate** consequence that is **beneficial** and **significant** in EIA terms;
- Scotland: the combination of a Low sensitivity receptor and a Low magnitude of impact produces a **Negligible** consequence that is **not significant** in EIA terms; and
- UK: the combination of a Low sensitivity receptor and a Negligible magnitude of impact produces a **Negligible** consequence that is **not significant** in EIA terms.

Area	Sensitivity	Magnitude of impact	Consequence	Significance result
Caithness and Sutherland	High	High	Major (beneficial)	SIGNIFICANT (beneficial)
Highland	Medium	Medium	Moderate (beneficial)	SIGNIFICANT (beneficial)
Orkney	Medium	High	Moderate (beneficial)	SIGNIFICANT (beneficial)
Scotland	Low	Low	Negligible	NOT SIGNIFICANT
UK	Low	Negligible	Negligible	NOT SIGNIFICANT

19.6.1.2 Potential effect on GVA during construction (including pre-construction)

The worst case scenario from the perspective of the GVA receptor relates to the value of economic output expected to be created during the construction stage that is associated with the Low Case scenario. The effects considered include the additional value added created directly and indirectly associated with the manufacture, supply, marshalling, and installation of Project structures and components, plus the additional GVA generated through supply chain and income expenditure effects. Project effects associated with the GVA receptor are beneficial.

Economic growth and output generation is a strategic priority for the Scottish Government (and also for the UK Government) and for both THC and OIC. At a national level, the business economy displays a high level of flexibility and adaptability. At a more local level, labour market evidence suggests a moderate level of resilience and adaptability for the Highland area. For Caithness and Sutherland, there is a higher level of sensitivity due to the lower rates of business formation found there.

Given the policy priorities and available evidence on the resilience and adaptability of the respective economies, the sensitivity of the receptors is assessed to vary by spatial area, as follows:

- Caithness and Sutherland: The receptor has a High level of sensitivity;
- Highland and Orkney: The receptors have a Medium level of sensitivity; and
- Scotland and UK: The receptors have a Low level of sensitivity.

The sensitivity result for Orkney does not factor in the proposed Flotta Hydrogen Hub as this is a proposed development at this stage. If the Flotta Hydrogen Hub is developed, the sensitivity of the Orkney receptor could potentially be reduced to Low.

Table 19-34 below presents estimates for the average annual value of GVA expected to be created within each spatial area during the construction stage for both the Low Case and the High Case scenarios. Embedded mitigation measures that intend to enhance supply chain participation from Scottish and local businesses should help to increase the value of GVA generated in impact areas above the Low Case results presented in Table 19-34.

As was provided for construction jobs, estimates in the table are provided for (1) Direct plus Indirect GVA in combination and (2) Induced GVA. This is because for complex developments – such as the West of Orkney Wind Farm – in practice it is difficult to predict with accuracy which Project elements will be undertaken by main contractors compared to sub-contractors. Hence, the approach taken is to combine Direct and Indirect GVA into a single figure.

It should be noted that the figures in the table are rounded to the nearest £0.1 million. The figures use a 2018 price base[28]. Column totals may not sum exactly due to rounding of decimals.

For both the Low and High Case scenarios, a 5-year pre-construction and construction period is used to assess the significance of effects.

[28] *Project expenditure figures were provided by OWPL using a 2022 price base. For the purpose of comparison with available baseline data for the local spatial areas, these prices were converted to 2018 equivalent values using GDP price deflators published by HM Treasury in September 2022, available at: GDP deflators at market prices, and money GDP September 2022 (Quarterly National Accounts) - GOV.UK (www.gov.uk).*

Table 19-34 Expected Magnitude of annual GVA effects during construction (£m, 2018 prices)

INDICATOR	CAITHNESS AND SUTHERLAND LOW	CAITHNESS AND SUTHERLAND HIGH	HIGHLAND LOW	HIGHLAND HIGH	ORKNEY LOW	ORKNEY HIGH	SCOTLAND LOW	SCOTLAND HIGH	UK LOW	UK HIGH
Annual Direct + Indirect GVA (£m)	11.6	24.9	20.8	51.2	16.1	33.6	56.0	153.3	116.8	261.5
Annual Induced GVA (£m)	2.2	4.7	4.4	10.8	3.5	7.1	12.8	35.0	32.3	70.6
Annual Total GVA (£m)	13.8	29.7	25.3	62.0	19.6	40.8	68.8	188.4	149.1	332.1

Source: Development Economics Limited estimates, March 2023

For the spatial area of Caithness and Sutherland, annual Project expenditure during construction would be expected to result in an average annual overall total of between £13.8 million and £29.7 million of GVA (2018 prices). The 2018 baseline figure for GVA in Caithness and Sutherland is estimated to be £540 million. The potential addition of between £13.8 million and £29.7 million of GVA to this baseline total would represent a temporary increase of between 2.6% and 5.5% to the baseline figure. The worst case scenario, therefore, is an increase of 2.6%. The magnitude of impact for construction stage GVA in Caithness and Sutherland is therefore concluded to be High under the worst case scenario.

For the spatial area of Highland, Project expenditure would be expected to result in an annual average overall total of between £25.3 million and £62.0 million of GVA during construction (2018 prices). The 2018 baseline total for GVA in Highland was £6.42 billion. The potential addition of between £25.3 million and £62.0 million to this baseline total would represent a temporary increase of between 0.39% and 0.97% to the baseline figure. The worst case scenario, therefore, is an increase of 0.39%. The magnitude of impact for construction stage GVA employment in Highland is therefore concluded to be Low under the worst case scenario.

For the spatial area of Orkney, Project expenditure would be expected to result in an annual average of between £19.6 million and £40.8 million of GVA during construction (2018 prices). The 2018 baseline total for GVA in Orkney was £634 million. The potential addition of between £19.6 million and £40.8 million to this total would represent a temporary increase of between 3.1% and 6.4% to the baseline figure. The magnitude of impact for construction stage GVA in Orkney is therefore concluded to be High under the worst case scenario.

For Scotland, Project expenditure would be expected to result in an annual average of between £68.8 million and £188.4 million of GVA during construction (2018 prices). The 2018 baseline total for GVA in Scotland is £142.15 billion. The potential addition of between £68.8 million and £188.4 million to this total would represent a temporary increase of between 0.05% and 0.13% to the baseline figure. The magnitude of impact for construction stage GVA in Scotland is therefore concluded to be Negligible under the worst case scenario.

For the UK, Project expenditure would be expected to result in an annual average of between £149.1 million and £332.1 million of GVA during construction (2018 prices). The 2018 baseline total for GVA in the UK is £1,920 billion. The potential addition of between £149.1 million and £332.1 million to this total would represent a temporary increase of between 0.01% and 0.02% to the baseline figure. The magnitude of impact for construction stage GVA in the UK is therefore concluded to be Negligible under the worst case scenario.

19.6.1.2.1 Evaluation of significance: GVA effects during construction (including pre-construction)

The significance of the potential GVA effects during construction for the worst case scenario varies for each of the areas under consideration:

- Caithness and Sutherland: the combination of a High sensitivity receptor and a High magnitude of impact produces a Major consequence that is beneficial and significant in EIA terms;
- Highland: the combination of a Medium sensitivity receptor and a Low magnitude of impact produces a Minor consequence effect that is beneficial but not significant in EIA terms;
- Orkney: the combination of a Medium sensitivity receptor and a High magnitude of impact produces a Moderate consequence that is beneficial and significant in EIA terms;

- Scotland: the combination of a Low sensitivity receptor and a Negligible magnitude of impact produces a Negligible consequence that is not significant in EIA terms; and
- UK: the combination of a Low sensitivity receptor and a Negligible magnitude of impact produces a Negligible consequence that is not significant in EIA terms.

The evaluation of significance for construction stage GVA for each area is summarised below.

Area	Sensitivity	Magnitude of impact	Consequence	Significance result
Caithness and Sutherland	High	High	Major (beneficial)	SIGNIFICANT
Highland	Medium	Low	Minor (beneficial)	NOT SIGNIFICANT
Orkney	Medium	High	Moderate (beneficial)	SIGNIFICANT
Scotland	Low	Negligible	Negligible	NOT SIGNIFICANT
UK	Low	Negligible	Negligible	NOT SIGNIFICANT

19.6.1.3 Potential effect on demand for housing and other services during construction (including pre-construction)

The impact of the construction stage of the Project on demand for housing as well as health services, education services, local leisure and recreation services, public transport services, and other services in each is linked to:

- The number of direct and other jobs expected to be created during the construction stage; and
- The proportion of these jobs that are taken up by workers who already reside within the area.

Project effects associated with the housing and other local services receptor are in some situations judged to be adverse. The rationale for this is that any additional demand for local services is likely to generate additional costs for local service providers, and/or create competition for services that could be experienced by existing residents of the areas. Such competition could, for example, generate delays in residents being able access services such as healthcare, or lead to overcrowding of some services with the potential for reduction in the quality of service received.

However, in other situations, it is possible that additional demand for services could help to ensure that service delivery continues in an area. An example could be that additional demand for school places could help support the continued case for provision of a primary school or childcare facility. This is potentially relevant in areas such as Caithness, that have experienced population decline (especially working age population decline) over the past decade or so.

Feedback received from local representatives on the SEWG strongly indicated that in the case of the Project, the effects on housing and local services (such as schools, healthcare services, and local recreational resources such as sports centres and clubs) should be regarded as beneficial.

The worst case scenario from the perspective of the housing and local services receptor is therefore associated with the estimated number of jobs expected to be created during the construction stage under the Low Case scenario.

The delivery of an adequate supply of housing and local services are strategic priorities for the Scottish Government, THC, and OIC.

Evidence from the draft HNDA report commissioned by THC, published in November 2021, identifies the likelihood of a falling population across the Highland area between the early 2020s and 2040 (other than under a high migration scenario). In the same report Caithness is specifically identified as being an area of low housing pressure. The draft HNDA also indicates that the working-age population in all housing market areas of Highlands is falling and that the region is dependent on in-migration for population growth.

Other evidence of current needs and expected future demand for housing, healthcare and education services was presented in section 19.4.

Given the available evidence regarding existing service delivery, resilience, and demand, the sensitivity of the housing and services receptors is assessed to vary by spatial area as follows:

- Caithness and Sutherland, and Highland: The receptors have a Low level of sensitivity;
- Orkney and Scotland: The receptors have a Medium level of sensitivity; and
- UK: The receptor has a High level of sensitivity.

The lower sensitivities for (1) Caithness and Sutherland and (2) Highland areas reflect the current and expected future low demand trajectories as indicated by the draft HNDA published by THC under almost all scenarios.

Temporary employment opportunities created in Caithness and Sutherland, the Highlands, and Orkney during construction are likely to be shared between workers who are already resident within these areas and workers from outside the area who move into the area during construction. Additional demand for housing and other local services is likely to be driven by the latter group (i.e. workers who were not previously resident in the local area but who move into the area to take up a new job role created by the construction of the Project).

With respect to Caithness and Sutherland, the worst case scenario from the perspective of the housing and local services receptor is that 100% of the direct/indirect job roles created during the construction stage Low Case could be filled by workers recruited from outside the Caithness and Sutherland area, but who choose to move into these areas during the construction stage of the Project. That is, the worst case scenario for this receptor from the perspective of demand for housing and local services relates to the number of local direct/indirect jobs that could be created during the construction stage associated with the Low Case scenario located in Caithness and Sutherland: i.e., up to 81 jobs p.a. located in Caithness and Sutherland during a 5-year pre-construction and construction period.

However, the majority of the workers needed to supply labour services to the Project will have specialist roles and their services would be expected to be needed either for relatively short periods (i.e. months rather than years) or

they may need to visit the Project intermittently. For non-locally resident specialist workers of this type, it is considered more likely that they are likely to generate demand for serviced or non-serviced accommodation (such as hotels, bed and breakfast accommodation, or self-catering accommodation) rather than private rented housing.

For this assessment, the worst case scenario is assumed to be that 10% of accommodation demand is for private rented housing, with the remainder supplied by different types of accommodation (such as tourist accommodation or bespoke temporary accommodation).

According to the draft HNDA produced by THC (draft HNDA, p92), there is expected to be a need for 385 additional dwellings in the Caithness local housing market area over the 10-year period to 2028/29 (i.e., an average of 38.5 p.a.). Adding extra demand for up to 8 dwellings to this total would represent a temporary increase of around 21% to the baseline demand total. The magnitude of impact for housing demand during the construction stage is therefore concluded to be High for Caithness and Sutherland under the worst case scenario.

The magnitude of increased demand for housing is also used in the assessment as a proxy of potential increase in demand for other services such as education (i.e. school places for workers' children and for healthcare). In practice, many workers will not have families and will have below average demand for healthcare compared to the locally resident population. This approach is therefore in line with the precautionary approach taken elsewhere in the assessment.

For the Highland area as a whole, the draft HNDA produced by THC predicts annual average demand of 904 dwellings p.a. over the period to 2028/29 (draft HNDA, p92). The Low Case scenario for the Project predicts an annual need for a local workforce in the Highland area amounting to 167 workers during construction. A worst case scenario assumes that 10% of these workers would require to be accommodated in private rented housing locally, with the remainder supplied by different types of tourist accommodation. On this basis, an average of 17 dwellings p.a. might be required to accommodate this portion of the Project workforce during the construction stage in the Highland area.

Adding extra demand for an average of 17 dwellings during construction would represent a temporary increase of around 1.8% to the baseline demand total for Highland. The magnitude of impact for housing demand during the construction stage is therefore concluded to be High for Highland under the worst case scenario.

For Orkney, the current housing strategy produced by OIC predicts annual average demand of 63 dwellings p.a. over the 2017-2032 period. The Low Case scenario for the Project predicts an annual need for a local workforce on Orkney amounting to 123 workers during construction. A worst case scenario assumes that 10% of these workers would require to be accommodated in private rented housing locally, with the remainder supplied by different types of tourist accommodation. On this basis, an average of around 12 dwellings p.a. might be required to accommodate this portion of the Project workforce during construction.

Adding extra demand for an average of 12 dwellings during construction would represent a temporary increase of around 19% to the baseline demand total for Orkney. The magnitude of impact for housing demand during the construction stage is therefore concluded to be High for Orkney under the worst case scenario.

In the case of Scotland, a recent estimate of the demand for housing is approximately 25,000 per year[29]. Under the worst case scenario (Low Case), the predicted increase in demand for dwellings linked to the need to accommodate the Project workforce might amount to 54 dwellings. The additional demand associated with the Project would increase demand by 0.22%. The magnitude of impact for housing demand during the construction stage is therefore concluded to be Low for Scotland under the worst case scenario.

In the case of the UK area, the estimated demand for housing over the next 10 years is estimated to amount to around 350,000 p.a. The addition of an extra 127 dwellings to this total would result in a temporary increase in demand of less than 0.01%. The magnitude of impact on housing demand during the construction stage is therefore concluded to be Negligible for the UK under the worst case scenario.

19.6.1.3.1 Evaluation of significance: demand for housing and local services during construction (including pre-construction)

The significance of the potential effects during construction on the housing and local services receptors for the worst case scenario varies for each of the areas under consideration:

- Caithness and Sutherland: the combination of a Low sensitivity receptor and a High magnitude of impact produces a Minor consequence that is beneficial but not significant in EIA terms;
- Highland: the combination of a Low sensitivity receptor and a High magnitude of impact produces a Minor consequence effect that is beneficial but not significant in EIA terms;
- Orkney: the combination of a Medium sensitivity receptor and a High magnitude of impact produces a Moderate consequence that is beneficial and significant in EIA terms;
- Scotland: the combination of a Medium sensitivity receptor and a Low magnitude of impact produces a Minor consequence that is beneficial but not significant in EIA terms; and
- UK: the combination of a High sensitivity receptor and a Negligible magnitude of impact produces a Negligible consequence that is beneficial but not significant in EIA terms.

The evaluation of significance for construction stage demand for housing and other local services for each area is summarised below.

[29] *Homes for Scotland (2019) based on research undertaken by the Fraser of Allander Institute.*

Area	Sensitivity	Magnitude of impact	Consequence	Significance result
Caithness and Sutherland	Low	High	Minor (beneficial)	NOT SIGNIFICANT
Highland	Low	High	Minor (beneficial)	NOT SIGNIFICANT
Orkney	Medium	High	Moderate (beneficial)	SIGNIFICANT
Scotland	Medium	Low	Minor (beneficial)	NOT SIGNIFICANT
UK	High	Negligible	Negligible (beneficial)	NOT SIGNIFICANT

19.6.1.4 Potential effect on tourism during construction (including pre-construction)

The vitality and growth of a visitor economy is a strategic priority for both the Scottish Government, THC and OIC.

A useful source of evidence of the sensitivity of people to the presence of offshore WTGs and related infrastructure that are visible from shore with respect to their day trip and holidaying behaviour comes from recent research published by Scottish Government – in association with Marine Scotland and Nature Scot – in 2022 (Scottish Government, 2022c): This research revealed that:

- Only 5% of residents of Scotland said that they had ever deliberately avoided visiting an area where they knew that offshore WTGs were visible from shore (with 88% saying they had never done this); and
- Only 11% of residents of Scotland said that they would be less likely to choose to holiday in an area where they could see an offshore wind farm.

Both of these proportions are offset to a small extent by responses from people who said that they would be more likely to visit or holiday in areas where they could see an offshore wind farm.

These results are based on a large sample (1,000) of residents of Scotland. Whilst the research did not extend to other residents of the UK or overseas residents (both of which are important markets for tourism in the North of Scotland, there is no strong reason to suspect that the pattern of response would be markedly different for residents of these areas beyond Scotland. Baseline information on the volume and value of tourism industry activity in the local impact areas were provided in section 19.4. Given this evidence, the sensitivity of the receptors is assessed to vary by area as follows:

- Caithness and Sutherland, Highland, and Orkney: The receptors have a Medium level of sensitivity; and
- Scotland and the UK: The receptors have a Low level of sensitivity.

The basis for allocation of the sensitivity levels are the STEAM reports for the local areas commissioned by THC and OIC respectively for 2019. As discussed in the baseline characterisation section of this chapter, 2019 data is used to assess the baseline situation for tourism as this is the most recent year unaffected by the disruption caused by the

Covid-19 pandemic and associated lockdowns, etc. For example, analysis of the STEAM data for the Highland area indicates that the annual number of visitors to the area increased by an annual average of 3.7% over the 2009-2019 period. Over the same period, tourism-related employment grew at an annual average of 1.5% per year. It is notable that these growth figures have been realised over a period in which there has also been an increasing number of onshore wind farms in the area.

There are two principal mechanisms through which the construction stage of the Project has the potential to affect local tourism receptors:

- By affecting the visitor perceptions of the Caithness and Sutherland, Highland, or Orkney areas as destinations for outdoor activities relevant to common outdoor activities such as sight-seeing, walking, cycling, nature-based tourism, boating, offshore recreational fishing, etc.; and/or
- By creating competition for tourism accommodation (i.e. if the Project generates a need to accommodate a construction workforce in accommodation that would otherwise be used by visitors to the area). At peak times for tourism, any such competition could potentially displace visitors to the area, to the detriment of businesses that depend on visitor expenditure for income (such as tourist attractions, local shops, etc.).

With respect to the potential for changes in visitor perceptions linked to the Project, these can be affected by temporary obstruction of tourism and recreational activities during the construction stage, such as through the implementation of safety zones and also possibly by additional road traffic that may be required to bring construction materials, equipment, and parts to construction site(s).

The issue of potential temporary disruption to tourism and recreational activities with respect to marine-based activities (such as sea-kayaking, diving, etc.) during the construction stage of the Project was considered as part of the assessment undertaken in chapter 20: Other sea users. This assessment concluded that the sensitivity of the tourism and recreational other sea user receptors was Low, the magnitude of impact under a worst case scenario was also Low, and that the consequence for tourism and recreational other sea users was therefore Negligible. An assessment of the potential effects of the offshore Project on recreational boating is provided in chapter 15: Shipping and navigation. The assessment concluded that all effects would be tolerable and As Low as Reasonably Practicable (ALARP) with the implementation of relevant embedded mitigation measures.

The issue of potential temporary disruption to certain types of on-land tourism and recreation activity – including angling, deer stalking, walking, and visits to cultural heritage assets – during the construction stage of the Project was considered as part of the assessment undertaken in chapter 12: Land use and other users. The assessment concluded that:

- The magnitude of impact on the North Coast 500 tourism route was **negligible**, the consequence was **negligible**, and that therefore the impact was **not significant**.
- The magnitude of impact on angling in the River Thurso and Forss Water was **low**, the consequence was **minor**, and that the impact was **not significant**.
- The magnitude of impact on deer stalking was **low**, the consequence was **negligible**, and that the impact was **not significant**.
- The magnitude of impact on Core Paths and recreational walking was low, the consequence was **negligible**, and that the impact was **not significant**.

- The magnitude of impact on cultural heritage assets was low, the consequence was minor, and that the impact was not significant.
- The magnitude of impact on local accommodation was negligible, the consequence was negligible, and that the impact was not significant.

The potential impact of the Project on the experience of visitors to the area was also considered as part of chapter 18: Seascape, landscape, and visual assessment. The main focus of the assessment was on long term impacts during the operation and maintenance stage, but the assessment also takes into account temporary effects during the construction stage. However, it is not considered likely that construction-stage activity for the Project would generate significant levels of deterrence for tourist numbers – or aggregate visitor expenditure – to the area. This conclusion is based on the following assessment.

A starting point is to note that the majority of expected visual effects (as assessed in chapter 18: SLVIA) are expected to occur in parts of affected seascape and landscape character areas, in small parts of affected settlements, or short sections of transport routes such as the A838/A836, affected Core Paths, and the Scrabster-Stromness ferry route. There is no suggestion in the assessment that these effects would dominate the visitor experience in these areas, places, or routes. This is especially the case in Caithness and Orkney, but also is the case in North Sutherland where the majority of the affected areas, places, or routes are located.

Moreover, within this larger local area there are many local substitutes available for the types of outdoor recreational activities – such as coastal walking, visiting beaches, etc. – the experience of which by visitors might be adversely affected by Project-related activity during the construction stage. Visitors whose experience might be diminished by the visibility of offshore wind farms and related infrastructure during the construction stage could, therefore, readily find alternative places locally to participate in their activities that do not have views of offshore WTGs. These visitors who relocate their recreational activities would still have opportunities to use local accommodation and other visitor services to the same extent as if they had not relocated their recreational activities. This means that the overall impact on the visitor economy would likely be minimal or negligible.

The second pathway for potential effects on tourism activity is the potential for displacement of localised activity due to competition for tourism bedspaces by workers that may need to be accommodated locally during the construction stage of the Project.

Similar to the situation for the housing and local services receptor discussed above, the Project has the potential to generate extra demand for local bedspaces to accommodate the construction workforce. For example, visiting contractors, specialists, and other workers whose labour services to the Project are of limited duration or are episodic could be accommodated in serviced or un-serviced tourist accommodation. This in turn could generate:

- Positive impacts on the accommodation component of the local tourism economy, for example by driving additional demand at times of the year (such as October-March) when demand for accommodation by tourists is relatively low. There is also the potential for additional demand by the construction workforce for other services provided by businesses operating in the visitor economy, such as shops, and businesses offering food & drink services (such as restaurants, take-away food, pubs, cafes, etc.); but
- On the other hand, if large numbers of tourist bedspaces are taken by construction workers, this could negatively impact other parts of the local tourism economy by decreasing the number of tourist visitors that

are available to visit local visitor attractions, shops, food & drink service providers, etc. This would be a form of displacement activity.

However, the potential for large amounts of displacement activity of this type would be restricted by embedded mitigation measures concerning accommodation, as specified in Table 19-31. To summarise this mitigation briefly, a number of policies and measures will be put in place by OWPL as embedded mitigation to ensure that the potential for displacement activity affecting the local tourist industry is minimised:

- Agreements will be prepared with local accommodation providers – such as hotels – to accommodate visiting workers outside of the main tourism season. These agreements offer the potential to provide additional income for accommodation establishments at a time of the year when there is an abundance of spare capacity among local accommodation providers; and
- At other times of the year, measures will be implemented to ensure that the accommodation needs of the majority of the visiting workforce is met by other means.

There may be a small residual need to utilise tourist bedspaces during the main tourist season. A worst case scenario is that up to 5% of the visiting temporary workforce may need to utilise tourist accommodation during the peak tourist season when there is likely to be a displacement effect on tourist visits to the areas.

The residual numbers of visiting workers that may need to be accommodated in the local areas are estimated to be as follows:

- Up to 10 visiting workers located in Caithness and Sutherland;
- Up to 23 visiting workers located in the Highland area; and
- Up to 14 visiting workers located in Orkney.

In the case of Scotland and the UK, there would be no additional embedded mitigation above that occurring in Caithness and Sutherland, Highland, and/or Orkney. The scale of effect in these two areas are estimated to be:

- Up to 1,233 visiting workers located in Scotland; and
- Up to 2,979 across the UK as a whole.

According to the 2019 STEAM report commissioned by THC, there are 3,478 tourist bedspaces in the Caithness area. Temporary allocation of up to 10 bedspaces from this total to accommodate a construction workforce would represent a temporary decrease of 0.29% for the tourist accommodation baseline total for Caithness. The magnitude of the potential reduction in tourism visits and spending during the construction stage is therefore concluded to be Low for Caithness under the worst case scenario. Although some of the potential reduction in visitor expenditure would likely be offset by local expenditure by the construction workforce, the scale of this expenditure is not considered likely to be sufficient to reduce the magnitude of impact to a lower level.

According to the 2020 STEAM report commissioned by THC, there are around 75,200 tourist bedspaces in the Highland region. Temporary allocation of up to 23 bedspaces from this total to accommodate a construction workforce would represent a temporary decrease of 0.03% in the accommodation available for tourist visitors to the Highland region. The magnitude of the potential reduction in tourism visits and spending during the construction stage is therefore concluded to be Negligible for the Highland region under the worst case scenario.

According to information provided for the purpose of this assessment, there are currently just over 3,800 tourist bedspaces on Orkney. Temporary allocation of up to 14 bedspaces from this total to accommodate a construction workforce would represent a temporary decrease of 0.37% in the accommodation available for tourist visitors to Orkney. The magnitude of the potential reduction in tourism visits and spending during the construction stage is therefore concluded to be Low for Orkney under the worst case scenario.

The equivalent assessment for Scotland and the UK results in the conclusion that the impact would be expected to be Negligible under the worst case scenario in both areas.

19.6.1.4.1 Evaluation of significance for tourism during construction (including pre-construction)

The significance of the potential effects during construction on the tourism receptor for the worst case scenario varies for each of the areas under consideration:

- Caithness and Sutherland: the combination of a Medium sensitivity receptor and a Low magnitude of impact produces a Minor consequence that is adverse but not significant in EIA terms;
- Highland: the combination of a Medium sensitivity receptor and a Negligible magnitude of impact produces a Negligible consequence effect that is adverse but not significant in EIA terms;
- Orkney: the combination of a Medium sensitivity receptor and a Low magnitude of impact produces a Minor consequence that is adverse but not significant in EIA terms;
- Scotland: the combination of a Low sensitivity receptor and a Negligible magnitude of impact produces a Negligible consequence that is not significant in EIA terms; and
- UK: the combination of a Low sensitivity receptor and a Negligible magnitude of impact produces a Negligible consequence that is not significant in EIA terms.

The evaluation of significance for construction stage demand for tourism for each area is summarised below.

Area	Sensitivity	Magnitude of impact	Consequence	Significance result
Caithness and Sutherland	Medium	Low	Minor (adverse)	NOT SIGNIFICANT
Highland	Medium	Negligible	Negligible	NOT SIGNIFICANT
Orkney	Medium	Low	Minor (adverse)	NOT SIGNIFICANT
Scotland	Low	Negligible	Negligible	NOT SIGNIFICANT
UK	Low	Negligible	Negligible	NOT SIGNIFICANT

19.6.1.5 Potential effect on onshore business activity linked to commercial fisheries during construction (including pre-construction)

As identified in the baseline characterisation, the local areas of Caithness and Sutherland, the Highland area generally, and Orkney each provide bases for commercial fishing fleets targeting a variety of commercial species. The remit of the Socio-economic chapter is to consider the potential effect of the Project in each of these areas in terms of:

- The onshore supply chain that provides services to fishing vessels and fleets. The services include provision of fuels, lubricants, gear, spare parts and machinery, repairs and servicing of vessels and equipment, safety equipment and training, and a range of business services relevant to commercial fishing activity; and
- Businesses that purchase, process and/or add value to fish caught in the offshore study area and/or landed in the local ports and harbours (such as Stromness and Scrabster).

The sensitivity of onshore businesses that supply equipment and services to commercial fishing vessels or are supplied with fish caught by those vessels has been determined by:

- Assessment of baseline characterisation data collected from the Office for National Statistics and the Marine Management Organisation;
- Structured interviews with representatives of the onshore industry; and
- Review of policy documentation relevant to the sector.

The conclusion of the assessment is that the onshore industry based in the impact areas for socio-economics have the following levels of sensitivity.

- Caithness and Sutherland, Highland, and Orkney: Businesses in these areas have a Medium level of sensitivity; and
- Scotland and the UK: Businesses in these areas have a Low level of sensitivity.

The Project has the potential to generate indirect socio-economic effects experienced by businesses that supply services to locally based commercial fishing vessels or fleets and/or businesses that process or add value to fish caught and landed locally. Pathways for the potential transmission of such effects would arise if the Project were assessed to be likely to generate significant levels of direct effects on commercial fishing vessels that operate within the offshore Socio-economics study area for the Project.

A separate assessment of the potential effects of the Project on commercial fishing activity during the construction stage of the Project has been undertaken in chapter 14: Commercial fisheries. This assessment has considered the potential for interactions between the construction stage of the Project and commercial fishing activity in the impact area for socio-economics, with respect to the following:

- Displacement of fishing effort during construction;
- Temporary loss or restricted access to fishing grounds during construction;
- Interference with fishing activities as a result of increased vessel traffic during construction;
- Increased steaming times for fishing vessels during construction; and
- Safety issues for fishing vessels during construction.

The assessment has considered these various effects within the following broad categories of commercial fishing activity receptors:

- Creelers;
- Demersal trawlers;
- Scallop dredgers; and
- UK and non-UK fishing vessels.

The conclusion of the assessment for commercial fisheries is that for almost all receptor types (i.e., the different types of fishing vessels, such as demersal trawlers, etc.) the expected consequence of effects from the Project during the construction stage are either Negligible or Minor (and not significant).

The exception to this is the predicted effect on creelers that currently operate in the OAA, most of whom are targeting lobster and crab. The assessment of chapter 14: Commercial fisheries with respect to this receptor type is that they have medium sensitivity to displacement of fishing effort and loss or restricted access to fishing grounds, due to the dependency of creel vessels operating within the OAA on access to these fishing grounds. The assessment also considers that the creel fishing grounds in the OAA are of moderate value and represents a small extent of the available grounds within the commercial fisheries offshore study area.

The assessment in chapter 14: Commercial fisheries acknowledges that it might take several months for creel fishing grounds to recover from disturbance effects on crabs during the construction process, and that this disturbance could increase the duration of any temporary loss of access for creelers following construction activities. On this basis, the impact of loss or restricted access to fishing grounds on creelers within the OAA is assessed in chapter 14: Commercial fisheries to be of high magnitude due to the length and phased nature of the construction period. Additionally, the impact of displacement of fishing effort on creelers within the OAA is assessed in chapter 14: Commercial fisheries to be of a medium magnitude. This means that the consequence for creelers operating in the OAA during construction is assessed to be moderate (and adverse) and therefore is significant for both of these impacts.

This is a potentially significant result for the socio-economics assessment, especially for Orkney where there is known to be an onshore processing industry that is supplied with crab and lobster caught in the OAA (as well as other areas).

However, the assessment of chapter 14: Commercial fisheries is that secondary mitigation would be developed in consultation with affected fishers, and that a cooperation agreement would be implemented that may incorporate provisions for new gear and other measures that would be negotiated and agreed post-consent. Based on the expectation of effective secondary mitigation developed in collaboration with the affected fishers, the assessment of chapter 14 is that the impact on creelers in the OAA during construction can be reduced to a low magnitude. The residual consequence is therefore reduced to minor and is assessed to be not significant.

The expectation of effective secondary mitigation with respect to access for creelers in the OAA during construction in turn indicates that the overall effect on the volume and value of crab and lobster supplied to onshore processors in the local study area (including Orkney) is likely to be minor. In addition, it is likely that any reduction in catch from the OAA during construction could be offset by crab and lobster caught in other fishing grounds during this period, and that the overall effect on the supply of crab and lobster would be minor. For this reason, the overall effect on this receptor group is assessed to be minor during construction.

In terms of onshore supply chain and processing industries more generally, the magnitude of impact on both onshore supply chain activities and onshore businesses that purchase locally caught and landed commercial fish in all local socio-economics study areas is expected to be Low. The rationale for this conclusion is as follows:

- As effects on fishing effort and steaming times are expected to be negligible or minor, there is likewise expected to be minimal effects on procurement of equipment, gear, repairs, fuel, and other inputs required by fishing vessels or fleets, and therefore the effect on the associated onshore supply chain would also be negligible or minor.
- Similarly, because the expected effects on the volume and value of fish landed for all fishing categories (demersal trawlers, creelers, etc.) is expected to be negligible or minor, the associated effect on the activities of onshore processing businesses is likewise expected to be negligible or minor.

19.6.1.5.1 Evaluation of significance for onshore business activity linked to commercial fisheries during construction (including pre-construction)

The significance of the potential effects on onshore supply chain activities and onshore businesses that purchase locally caught and landed commercial fish during the construction stage is as follows:

- Caithness and Sutherland: the combination of a Medium sensitivity receptor and a Low magnitude of impact produces a Minor consequence that is adverse but not significant in EIA terms;
- Highland: the combination of a Medium sensitivity receptor and a Low magnitude of impact produces a Minor consequence effect that is adverse but not significant in EIA terms;
- Orkney: the combination of a Medium sensitivity receptor and a Low magnitude of impact produces a Minor consequence that is adverse but not significant in EIA terms;
- Scotland: the combination of a Low sensitivity receptor and a Low magnitude of impact produces a Negligible consequence that is not significant in EIA terms; and
- UK: the combination of a Low sensitivity receptor and a Low magnitude of impact produces a Negligible consequence that is not significant in EIA terms.

The evaluation of significance for the onshore business activities linked to commercial fishing during construction is summarised below.

Area	Sensitivity	Magnitude of impact	Consequence	Significance result
Caithness and Sutherland	Medium	Low	Minor (adverse)	NOT SIGNIFICANT
Highland	Medium	Low	Minor (adverse)	NOT SIGNIFICANT
Orkney	Medium	Low	Minor (adverse)	NOT SIGNIFICANT
Scotland	Low	Negligible	Negligible	NOT SIGNIFICANT
UK	Low	Negligible	Negligible	NOT SIGNIFICANT

19.6.1.6 Potential effect on socio-cultural receptors during construction (including pre-construction)

The Project has the potential to generate socio-cultural effects through a number of pathways. These include the potential exacerbation of existing social problems such as crime and deprivation; by providing an additional source of disruption to community cohesion; and by providing a source of change for existing community character.

For the analysis of Socio-cultural effects, three spatial areas are used that are slightly different than for the other receptors considered in this chapter. These areas are: Caithness; North Sutherland; and Orkney.

These areas were selected because:

- In the case of Caithness and Orkney they host the epicentres that are most likely to be relevant to the Project (i.e., the cable landfall site, electricity sub-station site; and the most likely locations for the operational and construction stage ports respectively);
- In the case of North Sutherland, this area hosts communities that are closest to the OAA for the proposed Project; and
- For all three areas, there is bespoke baseline characterisation evidence available, in the form of community questionnaire survey responses and community stakeholder feedback.

The key findings from the baseline characterisation that are pertinent to the assessment of the sensitivity of socio-cultural receptors in these areas are:

- Wick North and Wick South are the only intermediate data zones in the local areas that experience significant concentrations of deprivation across multiple domains. However, it should be noted that Wick is not expected to be an epicentre of activity for the Project;
- Evidence from a widespread community questionnaire survey undertaken in 2022 that elicited over 400 responses from Caithness and Sutherland and Orkney (i.e., the *My Life in the Highlands and Islands* research commissioned by HIE) identified that the top priority for communities in Caithness and Sutherland is the

creation of more employment opportunities. However, the same research revealed that the top priority for communities in Orkney is more housing for local families; and

- Evidence from the community questionnaire survey undertaken for the Project indicates that the majority of local people who participated in the survey expect the Project to generate neutral or positive effects on aspects such as; jobs; interaction with tourism; demand for local services; community character; community cohesion; and the individual's own quality of life. The only aspects where a higher proportion of respondents said that they expect negative effects from the Project to exceed positive effects were with respect to:
  - Crime and anti-social behaviour (where, overall, 6% said they expected negative effects compared to 3% who expected positive effects); and
  - Tourism (where, overall, 14% said they expected negative effects compared to 12% who expected positive effects).

In addition, there was also evidence obtained through stakeholder consultations, including with community leaders and representatives of important local industries, such as businesses involved in commercial fisheries and tourism. The feedback from these interviews was generally positive concerning the potential social and cultural effects of the Project during both the construction and operation and maintenance stage. For example, a number of stakeholders – including those involved in the commercial fisheries industry – said that they would expect positive social and cultural effects to be generated linked to creating economic opportunities for young people, stabilisation of the population of the local area, and by providing sufficient demand to ensure the continued local provision of public services such as schools and healthcare.

Given the available evidence, overall the Project would be expected to generate beneficial effects across the majority of the issues that are relevant to the socio-cultural receptor. Nevertheless, there is the potential for negative effects on aspects such as crime and anti-social behaviour.

However, it is expected that the risk of criminal and/or anti-social behaviour on the part of the Project construction workforce will be minimised through embedded mitigation, in particular through the design and implementation of measures contained in a Good Working Practices construction method statement, as outlined in Table 19-31.

Using a precautionary approach, the assessment that follows focuses on the potential of the Project to generate negative socio-cultural effects only.

Regarding the evidence from the baseline characterisation – in particular the pattern of community questionnaire survey responses – the sensitivity of the receptors is assessed to vary by spatial area as follows:

- Caithness: the receptor has a Low level of sensitivity;
- North Sutherland: the receptor has a Medium level of sensitivity; and
- Orkney: The receptors have a Low level of sensitivity.

The worst case scenario from the perspective of the socio-cultural receptor relates to the number of jobs expected to be created during the construction stage that is associated with the High Case scenario. This is because for the two issues for which local communities expressed most concern during the consultation process (i.e., displacement effects on tourism and potential effects on crime and anti-social behaviour), the potential extent of any such effects are likely to be correlated to a larger construction workforce needed to be accommodated in the area during the

construction stage. The annual magnitude of any such effects are likely to be most pronounced under the High Case scenario.

The expectation of OWPL is that of the three spatial areas considered in the assessment for socio-cultural receptors, the largest proportion of construction stage activity would likely occur in Orkney. For this reason, mitigation and enhancement measures and resources would be proportionately focused on Orkney during the construction period in order to reduce the risk of negative effects on communities during this Project stage. The types of measures that would be designed and resourced to reduce the potential for adverse effects during construction includes induction awareness training focusing on required behaviours during construction, with this training encompassing the entirety of the locally based supply chain.

The conclusions for magnitude with respect to construction stage employment were concluded to be as follows:

- For the local spatial area of Caithness, the magnitude of impact for construction stage employment in Caithness is concluded to be High under the worst case scenario; and
- For the local spatial area of Orkney, the magnitude of impact for construction stage employment is also concluded to be High under the worst case scenario.

There is no specific estimate for North Sutherland with respect to employment generation during construction. However, given that there will be no major onshore Project infrastructure constructed in North Sutherland, it is expected that there would be little or no construction workforce accommodated in this area.

For North Sutherland, there is also a potential issue of displacement of visitors who might be deterred by the visual impact of WTGs offshore, as assessed in chapter 18: Seascape, landscape, and visual assessment. However, taking on board this evidence, the conclusion with respect to the tourism receptor is likely to be minimal in the wider local area, including along the north coast where visual impacts might occur in a small number of areas, places, or routes.

Overall, therefore, the magnitude of impact on North Sutherland in terms of the socio-cultural receptor is assessed to be Low.

The conclusions for magnitude for the socio-cultural receptor are as follows:

- Caithness: the magnitude of impact is assessed to be High under the worst case scenario;
- North Sutherland: the magnitude of impact is assessed to be Low under the worst case scenario; and
- Orkney: the magnitude of impact is assessed to be High under the worst case scenario.

19.6.1.6.1 Evaluation of significance for socio-cultural effects during construction (including pre-construction)

The significance of the potential effects during construction on the socio-cultural receptor for the worst case scenario varies for each of the areas under consideration:

- Caithness: the combination of a Low sensitivity receptor and a High magnitude of impact produces a Minor consequence that is adverse but not significant in EIA terms;

- North Sutherland: the combination of a Medium sensitivity receptor and a Low magnitude of impact produces a Minor consequence effect that is adverse but not significant in EIA terms; and
- Orkney: the combination of a Low sensitivity receptor and a High magnitude of impact produces a Minor consequence that is that is adverse but not significant in EIA terms.

The evaluation of significance for construction stage effects for the socio-cultural receptor for each area is summarised below.

Area	Sensitivity	Magnitude of impact	Consequence	Significance result
Caithness	Low	High	Minor (adverse)	NOT SIGNIFICANT
North Sutherland	Medium	Low	Minor (adverse)	NOT SIGNIFICANT
Orkney	Low	High	Minor (adverse)	NOT SIGNIFICANT

19.6.1.7 Potential distributional effects during construction (including pre-construction)

The potential distributional effects of the Project are considered at three spatial levels: Caithness; North Sutherland; and Orkney. The sensitivity of the receptors is assessed to vary by spatial area as follows:

- Caithness: the receptor has a Low level of sensitivity; and
- North Sutherland and Orkney: the receptors have a Medium level of sensitivity.

The basis for allocation of these sensitivity levels are the available evidence regarding income distribution, deprivation, and housing affordability in the three areas. However, the sensitivity level for Orkney has also been influenced by the responses received to the community questionnaire survey commissioned for the Project, which revealed a low level of concern about the potential effect of the Project on local property values.

There are several mechanisms through which the construction stage of the Project has the potential to generate distributional effects:

- By generating additional demand for housing (if needed to help accommodate some or all of the construction workforce), which could in turn increase temporarily the cost of housing, which in turn has the potential to negatively affect the affordability of housing for local people, especially those who are in lower income brackets;
- The creation of additional, well-paid local jobs could exacerbate local inequalities, if opportunities to access these employment opportunities are not readily available to local inhabitants; and
- The creation of the additional job opportunities could also exacerbate gender income inequalities if, for example, job opportunities are captured by a disproportionate number of males compared to females.

The worst case scenario from the perspective of the distributional effects receptor is mainly associated with the estimated number of jobs expected to be created during the construction stage under the High Case scenario. This is because the greater is the number of additional jobs created locally, then potentially greater is the potential for negative effects created from, for example, additional competition for local housing, exacerbation of local income inequalities, and or gender income inequalities if an above average proportion of the construction workforce is expected to be male.

Estimates for remuneration for direct and indirect roles created during the construction stage of the Project can be determined using relevant industry datasets published by the ONS. The indication from the assessment suggest that average earnings for the locally based construction workforce located in Orkney and Caithness are likely to be, on average, 40%-50% more than the average for full time employees currently in employment in those areas. On this basis, workers that need to relocate to the area are likely to pay more for housing than local workers.

As was discussed earlier with respect to housing demand, the great majority of temporary demand for housing during the construction stage would be managed through embedded mitigation. As summarised in Table 19-31 Embedded mitigation measures and management plans relevant to socio-economics, embedded mitigation measures would include measures such as:

- The use of tourism accommodation, such as hotels or self-catering accommodation, in the tourist off-season (e.g., October-March);
- Some limited use of tourist accommodation at other times of the year; and
- Use of bespoke temporary accommodation.

Following the deployment of these embedded mitigation measures, it is expected that only a small percentage of construction workforce demand is expected to be met by the private rented sector, and virtually none from the purchase of local housing by construction workers.

In addition, further embedded mitigation measures during the construction stage would serve to encourage the use of local sub-contractors, and to recruit a portion of the workforce from workers who are already resident in the area. Such measures would help to mitigate potential negative distributional effects – such as greater local income inequality – that could be generated if local people are not provided with opportunities to compete successfully for employment and training opportunities created by the Project.

In terms of gender inequality, research published by IRENA in 2019 indicated that internationally a relatively low proportion (22%) of the renewable windpower workforce is female.[30] The international windpower sector accepts that this proportion is inadequate, and steps are being taken internationally to increase the appeal of the sector to female recruits, including programmes to encourage young women to enrol on STEM courses at graduate and under-graduate level that, eventually, should lead to greater recruitment into technical and management roles in the industry. A more recent assessment (also by IRENA in collaboration with the International Labour Organisation)

[30] *Renewable Energy A Gender Perspective (irena.org).*

indicates that there has been a trend towards a greater proportion of female involvement since 2019, with one-third of employment in the renewables sector now accounted for by women.[31]

OWPL are committed to delivering a skills programme during the Project's development period to support long-term employment opportunities in the offshore renewables sector and to support OWPL's ambition to achieve a 50:50 gender balance across all operations from first generation. OWPL has signed agreements with the University of Highlands & Islands and the Energy Skills Partnership to deliver a local multi-level programme focused on STEM development, workforce diversity, and student sponsorship.

With respect to the potential for adverse distributional effects in Caithness and Orkney during construction, it is considered that there is some potential for residual negative effects in terms of additional demand for housing to the detriment of local residents in the lowest quartile of income distribution. There is also potential for exacerbation of existing levels of gender income inequality, which is already pronounced in the local area compared to national benchmarks. However, given the commitment to measures (through embedded mitigation) to limit negative effects, the magnitude for residual adverse distributional effects during the construction stage is concluded to be Low for both Caithness and Orkney under the worst case scenario.

The potential for adverse effects in North Sutherland is considered to be low because of the absence of major onshore construction or marshalling activity occurring in this area during the construction stage. Overall, the magnitude for adverse distributional effects during the construction stage is concluded to be Low for North Sutherland under the worst case scenario.

19.6.1.7.1 Evaluation of significance for distributional effects during construction (including pre-construction)

The significance of the potential effects during construction on the tourism receptor for the worst case scenario varies for each of the areas under consideration:

- Caithness: the combination of a Low sensitivity receptor and a Low magnitude of impact produces a Negligible consequence that is not significant in EIA terms;
- North Sutherland: the combination of a Medium sensitivity receptor and a Low magnitude of impact produces a Minor consequence effect that is adverse but not significant in EIA terms; and
- Orkney: the combination of a Medium sensitivity receptor and a Low magnitude of impact produces a Minor consequence that is adverse but not significant in EIA terms.

The evaluation of significance for potential construction stage distributional effects for each area is summarised below.

[31] *Renewable energy and Jobs: Annual review 2022 (ilo.org).*

Area	Sensitivity	Magnitude of impact	Consequence	Significance result
Caithness	Low	Low	Negligible	NOT SIGNIFICANT
North Sutherland	Medium	Low	Minor (adverse)	NOT SIGNIFICANT
Orkney	Medium	Low	Minor (adverse)	NOT SIGNIFICANT

19.6.2 Potential effects during operation and maintenance

19.6.2.1 Potential effects on employment during operation and maintenance

The worst case scenario from the perspective of the employment receptor relates to the number of jobs expected to be created during the operation and maintenance stage that is associated with the Low Case scenario. The effects considered include those that are involved in both the operation and maintenance of Project infrastructure, machinery, and apparatus. Project effects associated with the employment receptor during the operational stage are considered to be beneficial.

The assessment of sensitivity for the labour market in each spatial area during the operational stage is similar to that presented for the construction stage, with the exception of Orkney. In the longer term the potential sensitivity of Orkney is judged to be High, because of the potential for the loss of jobs in the offshore oil and gas sector over the next decade and beyond.[32]. The sensitivity of the receptors for operational stage employment is as follows:

- Caithness and Sutherland, and Orkney: The receptors have a **High** level of sensitivity;
- Highland: The receptor has a **Medium** level of sensitivity; and
- Scotland and UK: The receptors have a **Low** level of sensitivity.

Table 19-35 below presents estimates for the average annual number of workforce jobs expected to be created within each spatial area during the operation and maintenance stage for both the Low Case and the High Case scenarios. It should be noted that embedded mitigation measures addressing workforce recruitment and promoting careers in the renewable sector to young people are intended to increase the proportion of the workforce recruited from these areas during the operation and maintenance stage, and that the Low Case results are a worst case scenario.

Estimates in the table are provided for both (1) Direct plus Indirect jobs and (2) Induced jobs, where:

- Direct jobs are people employed by both OWPL and main contractors employed to provide operation and maintenance services to the Project;

[32] *This assessment of sensitivity for Orkney does not take into account the potential effect of the proposed Flotta Hydrogen Hub. If the Flotta Hydrogen Hub development proceeds, the sensitivity of Orkney could be reduced from High to Medium.*

- Indirect jobs are people working elsewhere in the supply chain for the Project that are attributable to operational stage expenditures; and
- Induced jobs are additional jobs within each spatial area that are supported by expenditure of remuneration earned by the Project workforce (including both direct and indirect jobs).

The figures in the table are rounded to the nearest whole number. Column totals may not sum exactly due to rounding of decimals.

For the spatial area of Caithness and Sutherland, the Project would be expected to require an average permanent (direct) workforce of between 93 and 115 workers p.a. during the operation and maintenance stage. The 2019 baseline total for employment in potential supply chain industries located in Caithness and Sutherland was approximately 2,400 jobs. The potential addition of between 93 and 115 jobs to this baseline total would represent an increase of between 3.9% and 4.7% to the baseline figure. The worst case scenario, therefore, is an increase of 3.9%. The magnitude of impact for operational stage employment in Caithness and Sutherland is therefore concluded to be High under the worst case scenario.

For the spatial area of Highland, the average workforce expected to be required during the operation and maintenance stage amounts to between 109 and 122 direct jobs. The 2019 baseline total for employment in potential supply chain industries located in Highland was approximately 23,650 jobs. The potential addition of between 109 and 122 jobs to this baseline total would represent a permanent increase of 0.46% under the Low Case scenario and 0.52% under the High Case. The magnitude of impact for operation and maintenance stage employment in Highland is therefore concluded to be Low under the worst case scenario.

With respect to Orkney, average annual operation and maintenance stage expenditure would be expected to require an average local workforce in the range of 13 to 15 jobs. The 2019 baseline total for employment in potential supply chain industries located in Orkney was approximately 1,600 jobs. The potential addition of between 13 and 15 jobs to this baseline would represent a permanent increase of between 0.79% and 0.96% to the baseline figure. The magnitude of impact for operation and maintenance stage employment in Orkney is therefore concluded to be Medium under the worst case scenario.

For Scotland, average annual expenditure would be expected to require an average workforce of between 125 and 163 during the operation and maintenance stage. The 2019 baseline total for employment in potential supply chain industries located in Scotland was approximately 390,000 jobs. The potential addition of between 125 and 163 direct jobs to this baseline would represent a permanent increase of around 0.03-0.04% under the Low and High Case scenarios respectively. The magnitude of impact for operation and maintenance stage employment for Scotland is therefore concluded to be Negligible under the worst case scenario.

For the UK, the Project is expected to require an operational workforce of between 273 and 322 workers. The 2019 baseline total for employment in potential supply chain industries located in the UK was approximately 4.68 million jobs. The potential addition of between 273 and 322 jobs to this total would represent a permanent increase of around 0.01% under both the Low and High case scenarios. The magnitude of impact for operation and maintenance stage employment for the UK is therefore concluded to be Negligible under the worst case scenario.

Table 19-35 Expected magnitude of average annual employment effects during operation and maintenance

INDICATOR	CAITHNESS AND SUTHERLAND LOW	CAITHNESS AND SUTHERLAND HIGH	HIGHLAND LOW	HIGHLAND HIGH	ORKNEY LOW	ORKNEY HIGH	SCOTLAND LOW	SCOTLAND HIGH	UK LOW	UK HIGH
Annual Direct + Indirect workforce jobs	93	115	109	122	13	15	125	163	273	322
Annual Induced workforce jobs	21	26	28	31	3	4	35	45	87	104
Annual Total Workforce Jobs	114	141	136	154	16	19	160	208	360	426

Source: Development Economics Limited estimates, March 2023

19.6.2.1.1 Evaluation of significance: employment effects during operation and maintenance

The assessment of the significance of the employment effects during the operation and maintenance stage for the worst case scenario for each area is as follows:

- Caithness and Sutherland: the combination of a High sensitivity receptor and a High magnitude of impact produces a **Major** consequence that is beneficial and **significant** in EIA terms;
- Highland: the combination of a Medium sensitivity receptor and a Low magnitude of impact produces a **Minor** consequence effect that is beneficial but **not significant** in EIA terms;
- Orkney: the combination of a High sensitivity receptor and a Medium magnitude of impact produces a **Moderate** consequence that is beneficial and **significant** in EIA terms;
- Scotland: the combination of a Low sensitivity receptor and a Negligible magnitude of impact produces a **Negligible** consequence that is **not significant** in EIA terms; and
- UK: the combination of a Low sensitivity receptor and a Negligible magnitude of impact produces a **Negligible** consequence that is **not significant** in EIA terms.

Area	Sensitivity	Magnitude of impact	Consequence	Significance result
Caithness and Sutherland	High	High	Major (beneficial)	SIGNIFICANT
Highland	Medium	Low	Minor (beneficial)	NOT SIGNIFICANT
Orkney	High	Medium	Moderate (beneficial)	SIGNIFICANT
Scotland	Low	Negligible	Negligible	NOT SIGNIFICANT
UK	Low	Negligible	Negligible	NOT SIGNIFICANT

19.6.2.2 Potential effect on GVA during operation and maintenance

The worst case scenario from the perspective of the GVA receptor relates to the value of economic output expected to be created during the operation and maintenance stage that is associated with the Low Case scenario. The effects considered include value added directly and indirectly associated with the production and supply of spare parts and components, routine maintenance, and overhauls. Project effects associated with the GVA receptor are beneficial.

The sensitivity of the receptors for operation and maintenance stage GVA are the same as for operational employment, and are as follows:

- Caithness and Sutherland; and Orkney: The receptors have a **High** level of sensitivity;
- Highland: The receptor has a **Medium** level of sensitivity; and
- Scotland and UK: The receptors have a **Low** level of sensitivity.

Estimates are provided in Table 19-36 below for (1) Direct plus Indirect GVA in combination and (2) Induced GVA. The figures use a 2018 price base.[33] Column totals may not sum exactly due to rounding of decimals.

It should be noted that embedded mitigation measures addressing participation in the operational supply chain by companies located in Scotland and in local impact areas should help to ensure that the eventual out-turn is higher than the levels predicted for the Low Case scenario set out in Table 19-36.

Within Caithness and Sutherland, expected average annual operational expenditure would be expected to result in overall average annual total GVA amounting to between £28.8 million and £36.4 million p.a. (2018 prices). The 2018 baseline figure for GVA in Caithness and Sutherland is estimated to be £540 million. The potential addition of between £28.8 million and £36.4 million p.a. to this baseline would represent a permanent increase of between 5.3% and 6.7% to the baseline figure. The worst case scenario, therefore, is an increase of 5.3%. The magnitude of impact for operation and maintenance stage GVA in Caithness and Sutherland is therefore concluded to be High under the worst case scenario.

For Highland, expected overall average annual GVA would be expected to amount to between £34.6 million and £39.7 million during the operation and maintenance stage (2018 prices). The 2018 baseline total for GVA in Highland was £6.42 billion. The potential addition of between £34.6 million and £39.7 million p.a. to this baseline would represent an increase of between 0.54% and 0.62%. The magnitude of impact for operation and maintenance stage GVA in the Highland area is therefore concluded to be Medium under the worst case scenario.

For Orkney, the overall annual average increase in GVA is expected to amount to between £3.5 and £5.3 million p.a. during the operation and maintenance stage (2018 prices). The 2018 baseline total for GVA in Orkney was £634 million. The potential addition of £3.5 million to £5.3 million p.a. would represent an increase of between 0.55% and 0.83% to the baseline. The magnitude of impact for operation and maintenance stage GVA in Orkney is therefore concluded to be Medium under the worst case scenario.

For Scotland, the overall average annual increase in GVA is expected to lie in the range £40.8 million to £52.0 million p.a. during the operation and maintenance stage (2018 prices). The 2018 baseline total for GVA in Scotland is £142.15 billion. The potential addition of between £40.8 million and £52.0 million p.a. to this total would represent an increase of between 0.03% and 0.04%. The magnitude of impact for operation and maintenance stage GVA in Scotland is therefore concluded to be Negligible under the worst case scenario.

For the UK, the overall average annual increase in GVA is expected to lie in the range £58.5 million to £66.4 million p.a. during the operation and maintenance stage (2018 prices). The 2018 baseline total for GVA in the UK is £1,920 billion. The potential addition of between £58.5 million and £66.4 million p.a. to this total would amount to an increase of around 0.003% under both scenarios. The magnitude of impact for operation and maintenance stage GVA in the UK is therefore concluded to be Negligible under the worst case scenario.

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[33] Project expenditure figures were provided by OWPL using a 2022 price base. For the purpose of comparison with available baseline data for the local spatial areas, these prices were converted to 2018 equivalent values using GDP price deflators published by HM Treasury in September 2022, available at: GDP deflators at market prices, and money GDP September 2022 (Quarterly National Accounts) - GOV.UK (www.gov.uk).

Table 19-36 Expected magnitude of average annual GVA effects during operation and maintenance (£m, 2018 prices)

INDICATOR	CAITHNESS AND SUTHERLAND LOW	CAITHNESS AND SUTHERLAND HIGH	HIGHLAND LOW	HIGHLAND HIGH	ORKNEY LOW	ORKNEY HIGH	SCOTLAND LOW	SCOTLAND HIGH	UK LOW	UK HIGH
Annual Direct + Indirect GVA (£m)	24.7	31.3	29.2	33.5	2.9	4.5	33.8	43.4	47.9	54.2
Annual Induced GVA (£m)	4.1	5.1	5.4	6.2	0.5	0.8	6.9	8.6	10.6	12.2
Annual Total GVA (£m)	28.8	36.4	34.6	39.7	3.5	5.3	40.8	52.0	58.5	66.4

Source: Development Economics Limited estimates, March 2023

19.6.2.2.1 Evaluation of significance: GVA effects during operation and maintenance

The consequence and significance of potential GVA effects during the operation and maintenance stage for each area is set out below:

- Caithness and Sutherland: the combination of a High sensitivity receptor and a High magnitude of impact produces a **Major** consequence that is beneficial and **significant** in EIA terms;
- Highland: the combination of a Medium sensitivity receptor and a Medium magnitude of impact produces a **Moderate** consequence effect that is beneficial and **significant** in EIA terms;
- Orkney: the combination of a High sensitivity receptor and a Medium magnitude of impact produces a **Moderate** consequence that is beneficial and **significant** in EIA terms;
- Scotland: the combination of a Low sensitivity receptor and a Negligible magnitude of impact produces a **Negligible** consequence that is **not significant** in EIA terms; and
- UK: the combination of a Low sensitivity receptor and a Negligible magnitude of impact produces a **Negligible** consequence that is **not significant** in EIA terms.

Area	Sensitivity	Magnitude of impact	Consequence	Significance result
Caithness and Sutherland	High	High	Major (beneficial)	SIGNIFICANT
Highland	Medium	Medium	Moderate (beneficial)	SIGNIFICANT
Orkney	High	Medium	Moderate (beneficial)	SIGNIFICANT
Scotland	Low	Negligible	Negligible	NOT SIGNIFICANT
UK	Low	Negligible	Negligible	NOT SIGNIFICANT

19.6.2.3 Potential effect on demand for housing and local services during operation and maintenance

The impact of the operation and maintenance stage of the Project on demand for housing in each area – as well as demand for health services, education services, recreation and leisure services, public transport services and other services – is linked to:

- The number of permanent direct and other jobs expected to be created during the operation and maintenance stage; and
- The proportion of these jobs that are likely to be taken up by workers who will reside within the area.

Project effects associated with the housing and other local services receptor are judged to be beneficial. The rationale for this is the same as that provided for any additional demand for housing and local services generated during the construction stage and is not repeated here.

As effects are judged to be beneficial, the worst case scenario from the perspective of the housing and local services receptor is associated with the estimated number of jobs expected to be created during the operation and maintenance stage under the Low Case scenario.

Evidence of current needs and expected future demand for housing, leisure and recreation, healthcare and education services was presented and discussed in section 19.4. Given the available evidence regarding existing service delivery, resilience, and demand, the sensitivity of the housing and services receptors during the operation and maintenance stage by area is assessed as follows:

- Caithness and Sutherland; and Highland: The receptors have a Low level of sensitivity;
- Orkney, and Scotland: The receptors have a Medium level of sensitivity; and
- UK: The receptor has a High level of sensitivity.

As was the case for the assessment of demand for housing and services during the construction stage, the magnitude of increased demand for housing is used as a proxy of potential increase in demand for other services such as education and healthcare in the operation and maintenance stage.

Unlike for the construction stage effects, employment opportunities created during the operation and maintenance stage are expected – as discussed and agreed at several SEWG meetings – to lead to permanent demand for housing and local services in areas that host the operational workforce or that otherwise experience a sustained increase in employment demand over the operational life of the Project.

For Caithness, the worst case scenario from the perspective of the housing and local services receptor is that 100% of the workforce demand created during the operation and maintenance stage Low Case could be filled by workers recruited from outside the Caithness area, but who choose to move into these areas during the operation and maintenance stage of the Project. That is, the number of local jobs associated with the Low Case scenario located in Caithness: i.e., up to 114 jobs during the operation and maintenance stage.[34]

According to the draft HNDA produced by THC, there is expected to be a need for 385 additional dwellings in the Caithness local housing market area over the 10-year period to 2028/29. Adding extra demand for up to 114 dwellings to this total would represent an increase in demand of around 30% to the predicted future demand over this period. The magnitude of impact for housing demand during the operation and maintenance stage is therefore concluded to be High for Caithness under the worst case scenario.

For the Highland area, the draft HNDA produced by THC predicts overall demand for 9,038 dwellings over the period to 2028/29. The Low Case scenario for the Project predicts that workforce demand during the operation and maintenance stage could amount to up to 136 workers. Adding extra demand for 136 dwellings during the operation and maintenance stage would represent an increase of around 1.5% to the baseline demand total for Highland over this period. The magnitude of impact for housing demand during the operation and maintenance stage is therefore concluded to be High for Highland under the worst case scenario.

[34] *This total includes direct, indirect and induced employment effects.*

For Orkney, the current housing strategy produced by OIC predicts annual average demand of 63 dwellings p.a. over the 2017-2032 period. Over a 10-year period (i.e., equivalent to the time period used to assess magnitude for the Caithness and Highland areas), the Low Case scenario for the Project predicts that local workforce recruitment during the operation and maintenance stage could amount to up to 16 workers. The additional demand for 16 dwellings during the operation and maintenance stage to the predicted 10-year total demand would represent an increase of 2.5% to the predicted demand total for Orkney. The magnitude of impact for housing demand during the operation and maintenance stage is therefore concluded to be High for Orkney under the worst case scenario.

In the case of Scotland, the predicted 10-year increase in the demand for housing is approximately 250,000. Under the worst case scenario, the predicted increase in demand for dwellings linked to the need to accommodate the permanent Project workforce would amount to 160 dwellings. The additional demand associated with the Project would increase demand by 0.06%. The magnitude of impact for housing demand during the operation and maintenance stage is therefore concluded to be Negligible for Scotland under the worst case scenario.

For the UK, the predicted 10-year increase in the demand for housing is approximately 3.5 million. Under the worst case scenario, the predicted increase in demand for dwellings linked to the need to accommodate the permanent Project workforce would amount to 360 dwellings. The additional demand associated with the Project would increase demand across the UK by around 0.001%. The magnitude of impact for housing demand during the operation and maintenance stage is therefore concluded to be Negligible for the UK under the worst case scenario.

19.6.2.3.1 Evaluation of significance: Housing and local services during operations and maintenance

The significance of the potential effects during the operation and maintenance stage on the housing and local services receptors for the worst case scenario varies for each of the areas under consideration:

- Caithness and Sutherland: the combination of a Low sensitivity receptor and a High magnitude of impact produces a Minor consequence that is beneficial but not significant in EIA terms;
- Highland: the combination of a Low sensitivity receptor and a High magnitude of impact produces a Minor consequence effect that is beneficial and not significant in EIA terms;
- Orkney: the combination of a Medium sensitivity receptor and a High magnitude of impact produces a Moderate consequence that is beneficial and significant in EIA terms;
- Scotland: the combination of a Medium sensitivity receptor and a Negligible magnitude of impact produces a Negligible consequence that is not significant in EIA terms; and
- UK: the combination of a High sensitivity receptor and a Negligible magnitude of impact produces a Negligible consequence that is not significant in EIA terms.

The evaluation of significance for demand for housing and other local services during the operation and maintenance stage for each area is summarised below.

Area	Sensitivity	Magnitude of impact	Consequence	Significance result
Caithness and Sutherland	Low	High	Minor (beneficial)	NOT SIGNIFICANT
Highland	Low	High	Minor (beneficial)	NOT SIGNIFICANT
Orkney	Medium	High	Moderate (beneficial)	SIGNIFICANT
Scotland	Medium	Negligible	Negligible	NOT SIGNIFICANT
UK	High	Negligible	Negligible	NOT SIGNIFICANT

19.6.2.4 Potential effect on tourism during operation and maintenance

The sensitivity of tourism receptors for the operation and maintenance stage of the Project in each area is the same as per the construction stage. This is assessed to be as follows:

- Caithness and Sutherland, Highland, and Orkney: The receptors have a Medium level of sensitivity; and
- Scotland and the UK: The receptors have a Low level of sensitivity.

The issue of disruption to tourism and recreational activities with respect to marine-based activities (such as sea-kayaking, diving, etc.) during the operation and maintenance stage of the Project was considered as part of the assessment undertaken in and chapter 20: Other sea users. This assessment concluded that the sensitivity of the tourism and recreational other sea user receptors was Low, the magnitude of impact under a worst case scenario during the operation and maintenance stage was also Low, and that the consequence for tourism and recreational other sea users was therefore Negligible during the operation and maintenance stage. An assessment of the potential effects of the offshore Project operation and maintenance stage on recreational boating is provided in chapter 15: Shipping and navigation. All effects are considered tolerable and ALARP with the implementation of relevant mitigation measures.

The assessment undertaken in chapter 12: Land use and other land users did not assess the potential impacts on onshore tourism and recreation receptors. This was scoped out of the assessment because the export cables would be buried and therefore there is no potential to interfere with tourism and recreation receptors.

The potential impact of the Project on the experience of visitors to the area during the operation and maintenance stage was considered in detail as part of chapter 18: Seascape, landscape and visual assessment. Chapter 16: Marine archaeology and cultural heritage also provides an assessment of the effects of the offshore Project on the setting of cultural heritage assets.

For the operation and maintenance stage, the assessment concluded the following:

- Significant effects on seascape and coastal character would be limited to parts of the Kyle of Tongue within the Kyles and Sea Lochs seascape character area in Sutherland and the West Hoy Cliffs coastal character area in Orkney. There were no significant effects of this type expected in Caithness.
- Significant effects on landscape character would be limited to parts of the Sandy Beaches and Dunes landscape character type in Sutherland. No effects of this type were expected in Caithness or Orkney.
- There would be significant effects on two special landscape quality aspects of the Kyle of Tongue National Scenic Area (NSA).
- Significant visual effects on inhabited areas would be limited to small parts of the settlements along the north coast in Caithness and Sutherland, including small parts of Durness, Bettyhill, Armadale, Portskerra, Melvich, and Crosskirk. Accommodation areas affected include campsites at Sango Bay and Talmine. No settlements in Orkney were assessed to be likely affected.
- Significant visual effects were likely to be experienced along short sections of the A838 and A836 which overlap with the North Coast 500 tourist route and the Sustrans National Cycle Route 1.
- Significant visual effects were likely to be experienced from a short section of the Scrabster to Stromness ferry route.
- Significant visual effects were assessed to be likely experienced from parts of two Core Paths on Orkney, including the path to the Old Man of Hoy and along Rackwick Beach.
- Significant visual effects were expected to be experienced at visitor destinations at Armadale Bay and Strathy Bay in Caithness and Sutherland, and at Stromness Citadel on Orkney.

Overall, for the operation and maintenance stage, the assessment concluded that the Project was likely to generate significant adverse effects on the visitor experience in small parts of a number of affected settlements, small parts of landscape or seascape character areas, or short sections of transport routes (such as the A838/A836, affected Core Paths, and the Scrabster-Stromness ferry route).

However, the assessment did not conclude that these effects would dominate the visitor experience in these areas, places, or routes. This is especially the case in Caithness and Orkney, but also is the case in Sutherland where the majority of the affected areas, places, or routes are located.

Chapter 16: Marine archaeology and cultural heritage concluded that there would be no significant effects on the setting of cultural heritage assets resulting from the offshore Project.

It is also relevant to note that because relatively small parts of the wider area are assessed likely to be affected, there are abundant local substitutes available for the types of outdoor recreational activities undertaken by tourist visitors that might be adversely affected by Project-related activity during the operation and maintenance stage. As a consequence, the overall impact on the visitor economy from the visual impact of the Project would be expected to be minimal.

As with construction, the operation and maintenance stage of the Project has the potential to generate extra demand for local bedspaces to accommodate visiting contractors, specialists, and other workers whose labour services to the Project are of limited duration or are episodic and are likely to be accommodated in serviced or un-serviced tourist accommodation. This in turn could generate positive impacts on the local tourism economy, such as additional demand for serviced accommodation, food & drink services, etc.

However, if large numbers of tourist bedspaces are taken by visiting workers, this could negatively impact other parts of the local tourism economy, by decreasing the number of tourist visitors available to visit (and spend money at) local visitor attractions, shops, food & drink service providers, etc. However, the danger of this type of displacement activity is considered much less likely to be a significant risk during the operation and maintenance stage, as the need for visits to the Project from specialists and technicians from outside the local area is expected to be much more limited in scale and frequency.

From the perspective of the tourism receptor, the worst case scenario during the operation and maintenance stage of the Project is that linked to Low Case scenario employment effects at the spatial level of the Caithness and Sutherland, Highland, and Orkney areas (that is, a scenario where a smaller proportion of the Project's operation and maintenance stage workforce reside locally, therefore a higher proportion need to visit the local area episodically).

The other aspect of the worst case scenario for the tourism receptor is that the visiting workforce would require temporary accommodation during their visits, and that this could displace tourists from accommodation.[35] Such visitors should be regarded as 'business tourists' and they would provide a boost to the accommodation segment of the tourism economy, but nevertheless such visitors would be less likely to visit and spend money at local tourist attractions compared to holidaying visitors.

For the construction stage, two types of embedded mitigation relating to tourism accommodation have been developed (see Table 19-31). Of these measures, it is expected that the agreements with local hotels and other types of accommodation would also be extended to cover the operation and maintenance stage. That is, the small number of visiting specialists and technicians that might need to visit the area during the operation and maintenance stage would be expected to be accommodated in local hotels. As far as possible, these visits would be timed to occur outside of the main tourism season.

A working assumption has been made that up to 2% of the non-locally resident operation and maintenance stage workforce may need to visit the Project area at any point in time. That is, up to 2% of the overall operation and maintenance stage workforce normally based outside each of the respective spatial area used in the assessment (Caithness and Sutherland, Highland, Orkney, Scotland, UK) might need to visit those areas to undertake activities related to operations and maintenance at any one time.

In terms of the potential for negative effects, the scale of visiting workers that may need to be accommodated at any one time implied by this approach would be as follows:

- Up to 5 workers visiting Caithness and Sutherland;
- Up to 4 workers visiting the Highland area;
- Up to 3 workers visiting Orkney;
- Up to 4 workers visiting Scotland; and
- Up to 1 worker visiting the UK.

[35] *The worst case scenario for the tourism receptor differs from that for the Housing and Local Services receptor. For the latter, the worst case scenario assumes that a portion of the temporary (construction stage) workforce is accommodated in local housing stock, in particular private rented housing.*

According to the 2019 STEAM report commissioned by THC, there are 3,478 tourist bedspaces in the Caithness area. Temporary allocation of up to 5 bedspaces from this total to accommodate a visiting workforce during the operation and maintenance stage would represent a temporary decrease of 0.14% for the tourist accommodation baseline total for Caithness. The magnitude of the potential reduction in tourism visits and spending during the construction stage is therefore concluded to be Low for Caithness under the worst case scenario.

According to the 2020 STEAM report commissioned by THC, there are around 75,200 tourist bedspaces in the Highland region. Temporary allocation of up to 4 bedspaces from this total to accommodate a visiting workforce would represent a temporary decrease of 0.01% in the accommodation available for tourist visitors to the Highland region. The magnitude of the potential reduction in tourism visits and spending during the construction stage is therefore concluded to be Negligible for the Highland region under the worst case scenario.

According to information provided for the purpose of this assessment, there are currently just over 3,800 tourist bedspaces on Orkney. Temporary allocation of up to 3 bedspace from this total to accommodate a construction workforce would represent a temporary decrease of 0.08% in the accommodation available for tourist visitors to Orkney. The magnitude of the potential reduction in tourism visits and spending during the construction stage is therefore concluded to be Negligible for Orkney under the worst case scenario.

The equivalent assessment for both Scotland and the UK results in the conclusion that the impact would be expected to be Negligible for both areas under the worst case scenario.

19.6.2.4.1 Evaluation of significance for tourism during operations and maintenance

The significance of the potential effects during the operation and maintenance stage on the tourism receptor for the worst case scenario varies for each of the areas under consideration:

- Caithness and Sutherland: the combination of a Medium sensitivity receptor and a Low magnitude of impact produces a Minor consequence that is adverse but not significant in EIA terms;
- Highland: the combination of a Medium sensitivity receptor and a Negligible magnitude of impact produces a Negligible consequence effect that is adverse but not significant in EIA terms;
- Orkney: the combination of a Medium sensitivity receptor and a Negligible magnitude of impact produces a Negligible consequence that is adverse but not significant in EIA terms;
- Scotland: the combination of a Low sensitivity receptor and a Negligible magnitude of impact produces a Negligible consequence that is not significant in EIA terms; and
- UK: the combination of a Low sensitivity receptor and a Negligible magnitude of impact produces a Negligible consequence that is not significant in EIA terms.

The evaluation of significance for tourism during the operation and maintenance stage for each area is summarised below.

Area	Sensitivity	Magnitude of impact	Consequence	Significance result
Caithness and Sutherland	Medium	Low	Minor (adverse)	NOT SIGNIFICANT
Highland	Medium	Negligible	Negligible	NOT SIGNIFICANT
Orkney	Medium	Negligible	Negligible	NOT SIGNIFICANT
Scotland	Low	Negligible	Negligible	NOT SIGNIFICANT
UK	Low	Negligible	Negligible	NOT SIGNIFICANT

19.6.2.5 Potential effect on onshore business activity linked to commercial fisheries during operation and maintenance

The sensitivity of onshore businesses that supply equipment and services to commercial fishing vessels or are supplied with fish caught by those vessels during the operation and maintenance stage is the same as for the construction stage. That is:

- Caithness and Sutherland, Highland, and Orkney: Relevant businesses in these areas have a Medium level of sensitivity; and
- Scotland and the UK: Relevant businesses in these areas have a Low level of sensitivity.

As discussed in the construction stage assessment, the Project has the potential to generate indirect socio-economic effects experienced by businesses that supply services to locally based commercial fishing vessels or fleets and/or businesses that process or add value to fish caught and landed locally. Pathways for the potential transmission of such effects would arise if the Project were assessed to be likely to generate significant levels of direct effects on commercial fishing vessels that operate within the offshore Socio-economics study area for the Project during the operation and maintenance stage.

A separate assessment of the potential effects of the Project on commercial fishing activity during the operation and maintenance stage has also been undertaken in Chapter 14: Commercial fisheries. This assessment has considered the potential for interactions between the operations of the Project and commercial fishing activity in the Socio-economics study area with respect to the following:

- Temporary loss or restricted access to fishing grounds during the operation and maintenance stage;
- Displacement of fishing effort during the operation and maintenance stage;
- Interference with fishing activities as a result of increased vessel traffic the operation and maintenance stage;
- Increased steaming times for fishing vessels the operation and maintenance stage; and
- Safety issues for fishing vessels the operation and maintenance stage.

The conclusion of the assessment for Commercial Fisheries is that for all fishing vessel receptor types (creelers, demersal trawlers, etc.) the expected consequence of effects from the Project are either Negligible or Minor (and not significant).

In line with this result, the magnitude of impact on both onshore supply chain activities and onshore businesses that purchase locally caught and landed commercial fish during the Project's operation and maintenance stage in all areas considered in the socio-economics assessment for this receptor (i.e., Caithness & Sutherland; Highland; Orkney; Scotland; and UK) is expected to be Low.

19.6.2.5.1 Evaluation of significance for onshore business activity linked to commercial fisheries during operation and maintenance

The significance of the potential effects on onshore supply chain activities and onshore businesses that purchase locally caught and landed commercial fish during the operation and maintenance stage is as follows:

- Caithness and Sutherland: the combination of a Medium sensitivity receptor and a Low magnitude of impact produces a **Minor** consequence that is adverse but **not significant** in EIA terms;
- Highland: the combination of a Medium sensitivity receptor and a Low magnitude of impact produces a **Minor** consequence effect that is adverse but **not significant** in EIA terms;
- Orkney: the combination of a Medium sensitivity receptor and a Low magnitude of impact produces a **Minor** consequence that is adverse but **not significant** in EIA terms;
- Scotland: the combination of a Low sensitivity receptor and a Low magnitude of impact produces a **Negligible** consequence that is not **significant** in EIA terms; and
- UK: the combination of a Low sensitivity receptor and a Low magnitude of impact produces a **Negligible** consequence that is **not significant** in EIA terms.

The evaluation of significance for the onshore business activities linked to commercial fishing during the operation and maintenance stage is summarised below.

Area	Sensitivity	Magnitude of impact	Consequence	Significance result
Caithness and Sutherland	Medium	Low	Minor (adverse)	NOT SIGNIFICANT
Highland	Medium	Low	Minor (adverse)	NOT SIGNIFICANT
Orkney	Medium	Low	Minor (adverse)	NOT SIGNIFICANT
Scotland	Low	Negligible	Negligible	NOT SIGNIFICANT
UK	Low	Negligible	Negligible	NOT SIGNIFICANT

19.6.2.6 Potential socio-cultural effects during operation and maintenance

As with the construction stage, the Project has the potential to generate socio-cultural effects through a number of pathways during the operation and maintenance stage. The sensitivity of the socio-cultural receptors was described for the construction stage assessment of potential effects, and the rationale and result of this assessment is also the same for the operation and maintenance stage. That is:

- Caithness: the receptor has a Low level of sensitivity;
- North Sutherland: the receptor has a Medium level of sensitivity; and
- Orkney: The receptors have a Low level of sensitivity.

The worst case scenario from the perspective of the socio-cultural receptor relates to the number of jobs expected to be created during the operation and maintenance stage associated with the High Case scenario. This is because the potential scope for adverse effects (such as an increase in crime and/or anti-social behaviour) is likely to be correlated to a larger permanent operational workforce moving into the area. The annual potential magnitude of any such effects are likely to be most pronounced under the High Case scenario.

The conclusions for magnitude with respect to operation and maintenance stage employment were concluded to be High for Caithness and Medium for Orkney, but this conclusion was for the Low Case. However, neither of these conclusions change for the High Case scenario for these two areas.

There is no specific estimate for the North Sutherland area with respect to permanent employment generation during the operation and maintenance stage, but it is reasonable to conclude that the magnitude of impact for North Sutherland would likely be Low because there are no operational epicentres for the Project proposed to be located in this area.

The conclusions for operation and maintenance stage employment in turn directly influence the conclusions for magnitude of potential impact for socio-cultural effects because the potential for adverse local socio-cultural effects are directly correlated with the potential generation of locally based jobs. The conclusions for magnitude for the socio-cultural receptor are as follows:

- Caithness: the magnitude of impact is assessed to be High under the worst case scenario;
- North Sutherland: the magnitude of impact is assessed to be Low under the worst case scenario; and
- Orkney: the magnitude of impact is assessed to be Medium under the worst case scenario.

19.6.2.6.1 Evaluation of significance for socio-cultural effects during operations and maintenance

The significance of the potential effects during the operation and maintenance stage on the socio-cultural receptor for the worst case scenario varies for each of the areas under consideration:

- Caithness: the combination of a Low sensitivity receptor and a High magnitude of impact produces a Minor consequence that is adverse but not significant in EIA terms;
- North Sutherland: the combination of a Medium sensitivity receptor and a Low magnitude of impact produces a Minor consequence effect that is adverse but not significant in EIA terms; and

- Orkney: the combination of a Low sensitivity receptor and a Medium magnitude of impact produces a Minor consequence that is adverse but not significant in EIA terms.

The evaluation of significance for operation and maintenance stage effects for the socio-cultural receptor for each area is summarised below.

Area	Sensitivity	Magnitude of impact	Consequence	Significance result
Caithness	Low	High	Minor (adverse)	NOT SIGNIFICANT
North Sutherland	Medium	Low	Minor (adverse)	NOT SIGNIFICANT
Orkney	Low	Medium	Minor (adverse)	NOT SIGNIFICANT

19.6.2.7 Potential distributional effects during operation and maintenance

The potential distributional effects of the Project during the operation and maintenance stage are considered at three spatial levels: Caithness, North Sutherland, and Orkney. The sensitivity of the receptors for the operation and maintenance stage is assessed to vary by spatial area as follows:

- Caithness: the receptor has a Low level of sensitivity; and
- North Sutherland and Orkney: the receptors have a Medium level of sensitivity.

The basis for allocation of these sensitivity levels are the available evidence regarding income distribution, deprivation, and housing affordability in the three areas. However, the sensitivity level for Orkney has also been influenced by the responses received to the community questionnaire survey commissioned for the Project, which revealed a lower level of concern about the potential effect of the Project on local property values.

There are several mechanisms through which the operation and maintenance stage of the Project has the potential to generate distributional effects:

- By generating additional demand for housing (if needed to help accommodate some or all of the permanent operational workforce), which could in turn increase the cost of housing, which in turn has the potential to affect adversely housing affordability for local people, especially those with below average incomes;
- The creation of additional, well-paid local jobs could exacerbate local inequalities, if access to these employment opportunities by local working age people is constrained; and
- The creation of the additional job opportunities could also exacerbate gender income inequalities if, for example, the permanent job roles required during the operation and maintenance stage are filled by a disproportionate number of males compared to females.

The worst case scenario from the perspective of the distributional effects receptor is mainly associated with the estimated number of jobs expected to be created during the operation and maintenance stage under the High Case scenario. This is because the greater is the number of additional jobs created locally, then potentially greater is the

potential for negative effects created from, for example, additional competition for local housing, exacerbation of local income inequalities, and or gender income inequalities if an above average proportion of the operational workforce is expected to be male.

Estimates for remuneration for direct and indirect roles created during the operation and maintenance stage of the Project can be determined using relevant industry datasets published by the ONS. The indication from the assessment suggest that average earnings for the locally based operational workforce located in Orkney, Caithness, or Sutherland are likely to be, on average, 30%-45% more than the average for full time employees currently in employment in those areas. On this basis, it may be assumed recruited workers residing outside the area that need to relocate to these areas are likely to possess a higher ability to pay for housing compared to many workers already resident in the area.

However, the potential for distortion of local rented property markets is expected to be ameliorated through the deployment of measures guaranteed through embedded mitigation. In particular, embedded mitigation (as summarised in Table 19-31) will target the recruitment of a portion of the permanent workforce from among workers who are already resident in the area. For example, OWPL are committing substantial financial resources (£1.7 million) to local skills developments initiatives. OWPL are also participants in collaborative programmes with Scottish Government, UHI, and other ScotWind developers to promote STEM careers to school children, including in the Highland and Orkney council areas.

These embedded measures would also help to mitigate potential negative distributional effects – such as greater local income inequality – that could be generated if local people are not provided with opportunities to compete successfully for employment and training opportunities created by the Project during the operation and maintenance stage.

The potential for exacerbation of existing gender inequalities in local income distribution would also be ameliorated through measures to enable balanced gender recruitment of the operational workforce, such as recruitment of female graduates, management trainees, and in skilled trades roles. In order to achieve this, OWPL are committed to delivering a skills programme during the Project's development period to support OWPL's ambition to achieve a 50:50 gender balance across all operations from first generation. OWPL has also signed agreements with the University of Highlands & Islands and the Energy Skills Partnership to deliver a series of objectives, including workforce diversity.

With respect to the potential for adverse distribution effects in Caithness during the operation and maintenance stage, it is considered that there is some potential for negative effects in terms of additional demand for housing to the detriment of local residents in the lowest quartile of income distribution. There is also potential for exacerbation of existing levels of gender income inequality, which is already pronounced in the local area compared to national benchmarks.

An additional factor to account for Caithness during the operation and maintenance stage in particular is the likely loss in the longer term of well-paid and highly skilled jobs linked to the ongoing decommissioning of the Dounreay nuclear facility. There are currently around 1,280 direct jobs on-site at Dounreay, plus a further 700 or so jobs onsite

in the supply chain.[36] The arrival of new permanent employment opportunities during the operation and maintenance stage of the Project will help to compensate for the longer-term loss of jobs at Dounreay, and to some extent the potential for the Project to exacerbate distributional inequalities will be ameliorated.

Taking these factors into account, the magnitude for adverse distributional effects during the operation and maintenance stage is concluded to be **Low** for Caithness under the worst case scenario.

The potential for adverse effects in North Sutherland is lower than for Caithness due to the absence of onshore operational infrastructure associated with the Project in this area. The magnitude for adverse distributional effects during the operation and maintenance stage is concluded to be **Low** for North Sutherland under the worst case scenario.

The potential for adverse distributional effects in Orkney is also assessed to be **Low** under the worst case scenario. This is because the number of permanent jobs that stand to be created in Orkney during the operation and maintenance stage – as summarised in Table 19-35 – is relatively small compared to the other areas. It is also the case that there is not proposed to be any major operational infrastructure associated with the Project located in Orkney.

19.6.2.7.1 Evaluation of significance for distributional effects during operation and maintenance

The significance of the potential effects during the operation and maintenance stage on the distributional effects receptor for the worst case scenario varies for each of the areas under consideration:

- Caithness: the combination of a Low sensitivity receptor and a Low magnitude of impact produces a **Negligible** consequence that is **not significant** in EIA terms;
- Sutherland: the combination of a Medium sensitivity receptor and a Low magnitude of impact produces a **Minor** consequence effect that is adverse but **not significant** in EIA terms; and
- Orkney: the combination of a Medium sensitivity receptor and a Low magnitude of impact produces a **Minor** consequence that is adverse but **not significant** in EIA terms.

The evaluation of significance for potential construction stage distributional effects for each area is summarised below.

Area	Sensitivity	Magnitude of impact	Consequence	Significance result
Caithness	Low	Low	Negligible	NOT SIGNIFICANT
Sutherland	Medium	Low	Minor (adverse)	NOT SIGNIFICANT
Orkney	Medium	Low	Minor (adverse)	NOT SIGNIFICANT

[36] *Dounreay Socio-economic Report (External): September 2022*

19.6.3 Potential effects during decommissioning

In general, the scale and type of effects expected during the decommissioning stage could be expected to be similar to those anticipated to occur during the construction stage (in particular, the installation segment of the construction stage).

A high level estimate indicates that overall decommissioning stage expenditure could amount to around 75% of installation stage expenditure (in terms of current prices).

However, the considerable potential for future technological innovation and progress relating to decommissioning activities over the next 30 years or so years means that it is not currently possible to predict the likely duration of expenditure that would be required to decommission the Project.

Another principal source of uncertainty concerns the potential future locations of a decommissioning supply chain that would have the equipment, skills, expertise, and workforce to undertake large-scale offshore decommissioning activities. For this reason it is not possible to predict with any certainty the likely spatial pattern of expenditure required to decommission the Project (and, in turn, the business activity and employment that would stem from this expenditure).

The consequence of these types of uncertainty means that it is not possible to produce quantified estimates of the employment and GVA consequences of a decommissioning stage of the Project in the same way that has been done for the construction and operation and maintenance stage. However, given that decommissioning stage expenditure is likely to be less than construction, the scale of impacts for the various receptors are likely to be commensurately reduced.

In the absence of detailed information regarding decommissioning works, the impacts for employment and GVA during the decommissioning of the offshore Project are considered most likely to be similar to those identified for the construction stage, and specifically the installation stage, but reduced by around 50%-75% in magnitude.

The impacts for employment and GVA during the decommissioning stage would likely be beneficial but with a magnitude of effect that would be anticipated to range between low or medium in the local socio-economics study areas (Caithness and Sutherland; Highland; and Orkney). The consequence for employment and GVA during the decommissioning stage in these areas would likely be Minor and not significant in EIA terms.

The impacts for housing and local services during decommissioning would likely be beneficial with a magnitude of effect that is low or medium in the local socio-economics study areas. The consequence for housing and local services during the decommissioning stage in these areas would likely be Minor and not significant in EIA terms.

The impacts for tourism during decommissioning would likely be adverse with a magnitude of effect that is low or medium in the local socio-economics study areas. The consequence for tourism during the decommissioning stage in these areas would likely be Minor and not significant in EIA terms.

The impacts for onshore activities linked to local commercial fisheries during decommissioning would likely be adverse with a magnitude of effect that is low in the local socio-economics study areas. The consequence for onshore activities

linked to local commercial fisheries during the decommissioning stage in these areas would likely be Minor and not significant in EIA terms.

The impacts for the socio-cultural receptor during the decommissioning stage would likely be adverse but with a magnitude of effect that would be anticipated to be low in the local socio-economics study areas (Caithness; North Sutherland; and Orkney). The consequence for the socio-cultural receptor during the decommissioning stage in these areas would likely be Minor and not significant in EIA terms.

Distributional effects during decommissioning would likely be adverse with a magnitude of effect that is low or negligible in the local socio-economics study areas. The consequence for distributional effects during the decommissioning stage in these areas would likely be Minor and not significant in EIA terms.

19.6.4 Summary of potential effects

A summary of the outcomes of the assessment of potential effects from the construction and operation and maintenance stage of the Project for each area is provided below:

- Table 19-37 provides results for Caithness and Sutherland combined;
- Table 19-38 provides results for Highland;
- Table 19-39 provides results for Orkney;
- Table 19-40 provides results for Caithness (only);
- Table 19-41 provides results for North Sutherland;
- Table 19-42 provides results for Scotland; and
- Table 19-43 provides results for the UK.

Table 19-37 Summary of potential effects: Caithness and Sutherland

POTENTIAL EFFECT	RECEPTOR	SENSITIVITY OF RECEPTOR	MAGNITUDE OF IMPACT	CONSEQUENCE (SIGNIFICANCE OF EFFECT)	SECONDARY MITIGATION REQUIREMENTS	RESIDUAL CONSEQUENCE (SIGNIFICANCE OF EFFECT)
Construction						
Change in employment levels	Employment	High	High	Major (significant, beneficial)	None required above the embedded measures that are in place to maximise this beneficial impact.	Major (significant, beneficial)
Change in GVA levels	GVA	High	High	Major (significant, beneficial)	None required above the embedded measures that are in place to maximise this beneficial impact.	Major (significant, beneficial)
Change in demand for housing and local services	Housing and local services	Low	High	Minor (not significant. beneficial)	None required above the embedded measures that are in place to maximise this beneficial impact.	Minor (not significant, beneficial)
Change in the volume and value of tourism	Tourism	Medium	Low	Minor (not significant)	None required above embedded measures	Minor (not significant)
Change in the value of onshore business activity linked to commercial fishing	Commercial fisheries supply chain or fish processing/wholesaling businesses	Medium	Low	Minor (not significant)	None required above embedded measures	Minor (not significant)

POTENTIAL EFFECT	RECEPTOR	SENSITIVITY OF RECEPTOR	MAGNITUDE OF IMPACT	CONSEQUENCE (SIGNIFICANCE OF EFFECT)	SECONDARY MITIGATION REQUIREMENTS	RESIDUAL CONSEQUENCE (SIGNIFICANCE OF EFFECT)
Operation and maintenance						
Change in employment levels	Employment	High	High	Major (significant, beneficial)	None required above the embedded measures that are in place to maximise this beneficial impact.	Major (significant, beneficial)
Change in GVA levels	GVA	High	High	Major (significant, beneficial)	None required above the embedded measures that are in place to maximise this beneficial impact.	Major (significant, beneficial)
Change in demand for housing and local services	Housing and local services	Low	High	Minor (not significant, beneficial)	None required above the embedded measures that are in place to maximise this beneficial impact.	Minor (not significant, beneficial)
Change in the volume and value of tourism	Tourism	Medium	Low	Minor (not significant)	None required above embedded measures.	Minor (not significant)
Change in the value of onshore business activity linked to commercial fishing	Commercial fisheries supply chain or fish processing/wholesaling businesses	Medium	Low	Minor (not significant)	None required above embedded measures.	Minor (not significant)

Table 19-38 Summary of potential effects: Highland

POTENTIAL EFFECT	RECEPTOR	SENSITIVITY OF RECEPTOR	MAGNITUDE OF IMPACT	CONSEQUENCE (SIGNIFICANCE OF EFFECT)	SECONDARY MITIGATION REQUIREMENTS	RESIDUAL CONSEQUENCE (SIGNIFICANCE OF EFFECT)
Construction						
Change in employment levels	Employment	Medium	Medium	Moderate (significant, beneficial)	None required above the embedded measures that are in place to maximise this beneficial impact.	Moderate (significant, beneficial)
Change in GVA levels	GVA	Medium	Low	Minor (not significant, beneficial)	None required above the embedded measures that are in place to maximise this beneficial impact.	Minor (not significant, beneficial)
Change in demand for housing and local services	Housing and local services	Low	High	Minor (not significant, beneficial)	None required above the embedded measures that are in place to maximise this beneficial impact.	Minor (not significant, beneficial)
Change in the volume and value of tourism	Tourism	Medium	Negligible	Negligible (not significant)	None required above embedded measures.	Negligible (not significant)
Change in the value of onshore business activity linked to commercial fishing	Commercial fisheries supply chain or fish	Medium	Low	Minor (not significant)	None required above embedded measures.	Minor (not significant)

POTENTIAL EFFECT	RECEPTOR	SENSITIVITY OF RECEPTOR	MAGNITUDE OF IMPACT	CONSEQUENCE (SIGNIFICANCE OF EFFECT)	SECONDARY MITIGATION REQUIREMENTS	RESIDUAL CONSEQUENCE (SIGNIFICANCE OF EFFECT)
	processing/wholesaling businesses					
Operation and maintenance						
Change in employment levels	Employment	Medium	Low	Minor (not significant, beneficial)	None required above the embedded measures that are in place to maximise this beneficial impact.	Minor (not significant, beneficial)
Change in GVA levels	GVA	Medium	Medium	Moderate (significant, beneficial)	None required above the embedded measures that are in place to maximise this beneficial impact.	Moderate (significant, beneficial)
Change in demand for housing and local services	Housing and local services	Low	High	Minor (not significant, beneficial)	None required above the embedded measures that are in place to maximise this beneficial impact.	Minor (not significant, beneficial)
Change in the volume and value of tourism	Tourism	Medium	Negligible	Negligible (not significant)	None required above embedded measures.	Negligible (not significant)
Change in the value of onshore business activity linked to commercial fishing	Commercial fisheries supply chain or fish processing/wholesaling businesses	Medium	Low	Minor (not significant)	None required above embedded measures.	Minor (not significant)

Table 19-39 Summary of potential effects: Orkney

POTENTIAL EFFECT	RECEPTOR	SENSITIVITY OF RECEPTOR	MAGNITUDE OF IMPACT	CONSEQUENCE (SIGNIFICANCE OF EFFECT)	SECONDARY MITIGATION REQUIREMENTS	RESIDUAL CONSEQUENCE (SIGNIFICANCE OF EFFECT)
Construction						
Change in employment levels	Employment	Medium	High	Moderate (significant, beneficial)	None required above the embedded measures that are in place to maximise this beneficial impact.	Moderate (significant, beneficial)
Change in GVA levels	GVA	Medium	High	Moderate (significant, beneficial)	None required above the embedded measures that are in place to maximise this beneficial impact.	Moderate (significant, beneficial)
Change in demand for housing and local services	Housing and local services	Medium	High	Moderate (significant, beneficial)	None required above the embedded measures that are in place to maximise this beneficial impact.	Moderate (significant, beneficial)
Change in the volume and value of tourism	Tourism	Medium	Low	Minor (not significant)	None required above embedded measures.	Minor (not significant)
Change in the value of onshore business activity linked to commercial fishing	Commercial fisheries supply chain or fish processing/wholesaling businesses	Medium	Low	Minor (not significant)	None required above embedded measures.	Minor (not significant)

POTENTIAL EFFECT	RECEPTOR	SENSITIVITY OF RECEPTOR	MAGNITUDE OF IMPACT	CONSEQUENCE (SIGNIFICANCE OF EFFECT)	SECONDARY MITIGATION REQUIREMENTS	RESIDUAL CONSEQUENCE (SIGNIFICANCE OF EFFECT)
Change in socio-cultural conditions	Socio-cultural effects	Low	High	Minor (not significant)	None required above embedded measures.	Minor (not significant)
Distributional effects	Distributional effects	Medium	Low	Minor (not significant)	None required above embedded measures.	Minor (not significant)
Operation and maintenance						
Change in employment levels	Employment	High	Medium	Moderate (significant, beneficial)	None required above the embedded measures that are in place to maximise this beneficial impact.	Moderate (significant, beneficial)
Change in GVA levels	GVA	High	Medium	Moderate (significant, beneficial)	None required above the embedded measures that are in place to maximise this beneficial impact.	Moderate (significant, beneficial)
Change in demand for housing and local services	Housing and local services	Medium	High	Moderate (significant, beneficial)	None required above the embedded measures that are in place to maximise this beneficial impact.	Moderate (significant, beneficial)
Change in the volume and value of tourism	Tourism	Medium	Negligible	Negligible (not significant)	None required above embedded measures.	Negligible (not significant)
Change in the value of onshore business activity	Commercial fisheries supply chain or fish	Medium	Low	Minor (not significant)	None required above embedded measures.	Minor (not significant)

POTENTIAL EFFECT	RECEPTOR	SENSITIVITY OF RECEPTOR	MAGNITUDE OF IMPACT	CONSEQUENCE (SIGNIFICANCE OF EFFECT)	SECONDARY MITIGATION REQUIREMENTS	RESIDUAL CONSEQUENCE (SIGNIFICANCE OF EFFECT)
linked to commercial fishing	processing/wholesaling businesses					
Change in socio-cultural conditions	Socio-cultural effects	Low	Medium	Minor (not significant)	None required above embedded measures.	Minor (not significant)
Distributional effects	Distributional effects	Medium	Low	Minor (not significant)	None required above embedded measures.	Minor (not significant)

Table 19-40 Summary of potential effects: Caithness (only)

POTENTIAL EFFECT	RECEPTOR	SENSITIVITY OF RECEPTOR	MAGNITUDE OF IMPACT	CONSEQUENCE (SIGNIFICANCE OF EFFECT)	SECONDARY MITIGATION REQUIREMENTS	RESIDUAL CONSEQUENCE (SIGNIFICANT OF EFFECT)
Construction						
Change in socio-cultural conditions	Socio-cultural effects	Low	High	Minor (not significant)	None required above embedded measures.	Minor (not significant)
Distributional effects	Distributional effects	Low	Low	Negligible (not significant)	None required above embedded measures.	Negligible (not significant)
Operation and maintenance						
Change in socio-cultural conditions	Socio-cultural effects	Low	High	Minor (not significant)	None required above embedded measures.	Minor (not significant)
Distributional effects	Distributional effects	Low	Low	Negligible (not significant)	None required above embedded measures.	Negligible (not significant)

Table 19-41 Summary of potential effects: North Sutherland

POTENTIAL EFFECT	RECEPTOR	SENSITIVITY OF RECEPTOR	MAGNITUDE OF IMPACT	CONSEQUENCE (SIGNIFICANCE OF EFFECT)	SECONDARY MITIGATION REQUIREMENTS	RESIDUAL CONSEQUENCE (SIGNIFICANCE OF EFFECT)
Construction						
Change in socio-cultural conditions	Socio-cultural effects	Medium	Low	Minor (not significant)	None required above embedded measures.	Minor (not significant)
Distributional effects	Distributional effects	Medium	Low	Minor (not significant)	None required above embedded measures.	Minor (not significant)
Operation and maintenance						
Change in socio-cultural conditions	Socio-cultural effects	Medium	Low	Minor (not significant)	None required above embedded measures.	Minor (not significant)
Distributional effects	Distributional effects	Medium	Low	Minor (not significant)	None required above embedded measures.	Minor (not significant)

Table 19-42 Summary of potential effects: Scotland

POTENTIAL EFFECT	RECEPTOR	SENSITIVITY OF RECEPTOR	MAGNITUDE OF IMPACT	CONSEQUENCE (SIGNIFICANCE OF EFFECT)	SECONDARY MITIGATION REQUIREMENTS	INTERCON (SIGNIFICANCE OF EFFECT)
Construction						
Change in employment levels	Employment	Low	Low	Negligible (not significant)	Effects are beneficial and no mitigation is required.	Negligible (not significant)
Change in GVA levels	GVA	Low	Negligible	Negligible (not significant)	Effects are beneficial and no mitigation is required.	Negligible (not significant)
Change in demand for housing and local services	Housing and local services	Medium	Low	Minor (not significant, beneficial)	None required above the embedded measures that are in place to maximise this beneficial impact.	Minor (not significant, beneficial)
Change in the volume and value of tourism	Tourism	Low	Negligible	Negligible (not significant)	None required above embedded measures.	Negligible (not significant)
Change in the value of onshore business activity linked to commercial fishing	Commercial fisheries supply chain or fish processing/wholesaling businesses	Low	Negligible	Negligible (not significant)	None required above embedded measures.	Negligible (not significant)
Operation and maintenance						

POTENTIAL EFFECT	RECEPTOR	SENSITIVITY OF RECEPTOR	MAGNITUDE OF IMPACT	CONSEQUENCE (SIGNIFICANCE OF EFFECT)	SECONDARY MITIGATION REQUIREMENTS	INTERCON (SIGNIFICANCE OF EFFECT)
Change in employment levels	Employment	Low	Negligible	Negligible (not significant)	Effects are beneficial and no mitigation is required.	Negligible (not significant)
Change in GVA levels	GVA	Low	Negligible	Negligible (not significant)	Effects are beneficial and no mitigation is required.	Negligible (not significant)
Change in demand for housing and local services	Housing and local services	Medium	Negligible	Negligible (not significant)	Effects are beneficial and no mitigation is required.	Negligible (not significant)
Change in the volume and value of tourism	Tourism	Low	Negligible	Negligible (not significant)	None required above embedded measures.	Negligible (not significant)
Change in the value of onshore business activity linked to commercial fishing	Commercial fisheries supply chain or fish processing/wholesaling businesses	Low	Negligible	Negligible (not significant)	None required above embedded measures.	Negligible (not significant)

Table 19-43 Summary of potential effects: United Kingdom

POTENTIAL EFFECT	RECEPTOR	SENSITIVITY OF RECEPTOR	MAGNITUDE OF IMPACT	CONSEQUENCE (SIGNIFICANCE OF EFFECT)	SECONDARY MITIGATION REQUIREMENTS	RESIDUAL CONSEQUENCE (SIGNIFICANCE OF EFFECT)
Construction						
Change in employment levels	Employment	Low	Negligible	**Negligible (not significant)**	Effects are beneficial and no mitigation is required.	**Negligible (not significant)**
Change in GVA levels	GVA	Low	Negligible	**Negligible (not significant)**	Effects are beneficial and no mitigation is required.	**Negligible (not significant)**
Change in demand for housing and local services	Housing and local services	High	Negligible	**Negligible (not significant)**	Effects are beneficial and no mitigation is required.	**Negligible (not significant)**
Change in the volume and value of tourism	Tourism	Low	Negligible	**Negligible (not significant)**	None required above embedded measures.	**Negligible (not significant)**
Change in the value of onshore business activity linked to commercial fishing	Commercial fisheries supply chain or fish processing/wholesaling businesses	Low	Negligible	**Negligible (not significant)**	None required above embedded measures.	**Negligible (not significant)**
Operation and maintenance						

POTENTIAL EFFECT	RECEPTOR	SENSITIVITY OF RECEPTOR	MAGNITUDE OF IMPACT	CONSEQUENCE (SIGNIFICANCE OF EFFECT)	SECONDARY MITIGATION REQUIREMENTS	RESIDUAL CONSEQUENCE (SIGNIFICANCE OF EFFECT)
Change in employment levels	Employment	Low	Negligible	**Negligible (not significant)**	Effects are beneficial and no mitigation is required.	**Negligible (not significant)**
Change in GVA levels	GVA	Low	Negligible	**Negligible (not significant)**	Effects are beneficial and no mitigation is required.	**Negligible (not significant)**
Change in demand for housing and local services	Housing and local services	High	Negligible	**Negligible (not significant)**	Effects are beneficial and no mitigation is required.	**Negligible (not significant)**
Change in the volume and value of tourism	Tourism	Low	Negligible	**Negligible (not significant)**	None required above embedded measures.	**Negligible (not significant)**
Change in the value of onshore business activity linked to commercial fishing	Commercial fisheries supply chain or fish processing/wholesaling businesses	Low	Negligible	**Negligible (not significant)**	None required above embedded measures.	**Negligible (not significant)**

19.7 Assessment of cumulative effects

19.7.1 Introduction

Potential impacts from the offshore Project have the potential to interact with those from other developments, plans and activities, resulting in cumulative impacts on socio-economic receptors. The general approach to the cumulative effects assessment is described in chapter 7: EIA methodology and further detail is provided below. There are two broad types of effects that have been considered for cumulative interactions:

- Developments that might compete for supply chain resources; and Developments that might contribute to displacement effects on tourism.

19.7.1.1 Supply chain interactions

Certain types of offshore developments have the potential to compete for available resources and/or the workforce that are relevant to the ability of the potential Scottish and local supply chain to provide content to the Project. If there is a shortage of available supply chain capacity, the proportion of Project content that is assumed to be supplied from Scotland and/or more local areas may be less than the levels assumed in the assessment of the Project alone.

The categories of offshore developments that have been considered in the cumulative assessment include the following types of developments located in northern Scottish waters:

- Other offshore wind farms;
- Other types of marine renewable energy developments;
- Carbon capture and storage infrastructure;
- Oil and gas developments;
- Pipe laying and cable laying developments; and
- Port and harbour developments.

19.7.1.2 Tourism

There is potential for visible onshore and offshore developments within 60 km of the offshore Project to influence Caithness, Sutherland, and Orkney as destinations for outdoor, coastal, and marine-based recreation activities such as walking, cycling, nature-based activities, boating, recreational fishing, kayaking, surfing, etc. A list of these types of developments is provided in Table 19-44 below. The list of is sourced from the list of developments included in the cumulative impact assessment undertaken in chapter 18: Seascape, landscape and visual assessment.

It may be noted that unlike most other topic-specific chapters, the list of developments included in Table 19-44 includes currently operational wind farms. This is in line with the approach taken to the assessment of cumulative impacts undertaken in chapter 18: Seascape, landscape and visual assessment. The rationale for this inclusion of operational wind farms here reflects comments made by stakeholders – in particular, from Visit Scotland as a response to the Scoping Report – regarding the need for consideration of the potential impact on the local visitor economy of the 'proliferation' of wind farm developments in areas that are important for tourism.

Table 19-44 List of onshore and offshore developments considered for the socio-economics cumulative impact assessment for the tourism receptor

LOCATION	DEVELOPMENT TYPE	DEVELOPMENT NAME	DISTANCE TO OAA (KM)	STATUS	NUMBER OF TURBINES
Onshore	Onshore wind	Forss I & II	33	Operational or under construction	6
Onshore	Onshore wind	Strathy North	33	Operational or under construction	33
Onshore	Onshore wind	Baillie	37	Operational or under construction	21
Onshore	Onshore wind	Limekiln	38	Operational or under construction	21
Onshore	Onshore wind	Strathy South	36	Consented	13
Onshore	Onshore wind	Limekiln extension	38	Consented	35
Onshore	Onshore wind	Hoy Community	38	Consented	5
Offshore	Offshore wind farm	Pentland Floating Offshore Wind Farm (PFOWF)[37]	23	Application	7
Onshore	Onshore wind	Armadale	29	Application	12
Onshore	Onshore wind	Forss III	35	Application	2
Onshore	Onshore wind	Kirkton	34	Application	11
Onshore	Onshore wind	Cairnmore Hill	37	Application	5

[37] *Pentland Floating Offshore Wind Farm (PFOWF) will incorporate the currently consented Pentland Floating Offshore Wind Demonstrator turbine, and hence PFOWF only has been considered. The PFOWF Section 36 Consent and Marine Licence was granted for 10 years. However, the cumulative effects assessment has been based on the Project Design Envelope, as specified within the EIA, and therefore, an operational life of up to 30 years for the PFOWF has been considered. Since consent was granted in June 2023, PFOWF have submitted a Screening Report to MD-LOT with the intention to request a variation to the Section 36 Consent. This variation will incorporate refinements to the Project Design Envelope and to extend the operational life to 25 years.*

19.7.2 Construction stage cumulative effects

All receptors have been taken forward for consideration in the cumulative impact assessment for the construction stage. The following sections summarise the nature of the cumulative effects that might be expected to arise.

19.7.2.1 Potential cumulative effects on employment and GVA receptors during construction

The potential cumulative effects on employment and GVA receptors during the construction stage depends on the extent to which the Project may need to compete for resources, supply chain capacity, and workforce sourced from within the socio-economics study area with demand for similar resources required for the developments included in the cumulative assessment.

For example, there is potential for competition for resources – such as access to ports/harbours, vessels, and skilled workers – between the Project and other offshore wind farm developments, in particular those whose respective construction stages have the potential to overlap with that for the Project.

Competition for resources has the potential to create an additional local supply-side constraint. If this occurs, then a greater proportion of resources required by the Project may need to be sourced from elsewhere. This in turn could mean that the estimates for job and GVA creation presented in section 19.6 may not be realised in full.

However, the scale of the current and future pipeline of offshore wind energy developments also provides a potential for the further development of and investment in the domestic (UK and Scottish) supply chain relevant to the Project. That is, the availability of a sufficiently strong pipeline of proposed offshore renewable energy developments has the potential to encourage the private sector to commit to additional investment in national, regional, and local supply chain capacity. Such investment could include investment in production facilities and equipment, and/or investment in local workforce recruitment, training, and capacity.

Indeed, the potential for this stimulatory effect is offered as a rationale for UK and Scottish Government policy support for the offshore wind power sector, as highlighted in the policy review in section 19.2 and also in Chapter 2: Need for the Project.

In section 19.5 reference was made to a number of commitments and programmes (i.e., embedded mitigation measures) that OWPL has initiated or is contributing to financially in order to enhance local supply chain capabilities and develop workforce skills. These measures are contained in the SCDS that OWPL has agreed with Crown Estates Scotland. This £105 million investment programme includes the following, a portion of which will benefit potential suppliers in Caithness and Orkney:

- £9.3 million investment in infrastructure in ports and harbours located in Caithness and Orkney;
- Multi million to fund collaborative Design and Supply studies with Scottish and other UK suppliers;
- Significant local skills development programme;
- £33.5 million supply chain investment fund to enhance key supplier capability and competitiveness; and
- Multi million pre-FID capital investment to support key supplier investment and readiness.

Another factor is that there are substantial areas of overlap between the technologies, materials, and skills required for offshore oil and gas extraction and those relevant to offshore renewable energy exploitation. The expected future decline of the Scottish offshore oil and gas industry has the potential, therefore, to release industrial and workforce capacity that could augment the existing domestic supply chain for offshore wind farm developments. This potential is acknowledged in Scottish Government policy documents summarised in section 19.2 (for example, in Scotland's National Strategy for Economic Transformation, where the offshore renewables sector is identified as being important in helping Scotland to replace thousands of jobs that will be lost following the decline of the offshore oil and gas sector).

The principal considerations pertaining to the cumulative assessment for employment and GVA receptors can be summarised as follows:

- There are inherent uncertainties in predicting in quantitative terms the likely scale and spatial pattern of procurement that would be associated with the list of developments included in cumulative assessment;
- There is also a large amount of uncertainty concerning the potential timing of construction of the cumulative assessment developments – especially for those that are not yet consented – and therefore in estimating the potential for overlap (i.e. competition for resources) with the Project;
- There is also uncertainty regarding the potential future expansion and development of the locally based supply chain relevant to the Project's construction stage, especially given that a substantial augmentation of the existing Scottish supply chain is an important and consistently stated priority for the Scottish Government; and
- OWPL is currently involved in negotiations and/or discussions with potential local suppliers who have the potential to supply content to the Project. The fostering of relationships with such suppliers could potentially help to insulate the Project from competition for supply chain capacity from other developments.

Various uncertainties prevent precise quantification of the scale of the potential cumulative impacts during the construction stage. Competition from other types of development has the potential to diminish the scale of net additional impacts on receptors such as employment and GVA within the various spatial areas. Conversely, efforts by the private sector and/or Scottish Government to enhance supply chain capacity could be reasonably expected to increase the potential scale of (beneficial) impact.

Given this, the most likely outcome of cumulative effects on employment and GVA receptors during the construction stage is that the results lie within the range of Low/High results set out in section 19.6. The worst case outcome, however, is that the results tend towards the lower end of this scale for estimated potential GVA and employment outcomes.

The conclusion of the significance of effects for employment and GVA reported in section 19.6 are therefore unlikely to change as a result of cumulative effects being taken into consideration. That is:

- Consequences for Caithness and Sutherland for both the employment and GVA receptors are assessed to remain Major (beneficial) and are Significant;
- Consequences for Highland and Orkney for the employment receptor are assessed to remain Moderate (beneficial) and are Significant;
- Consequences for Orkney for the GVA receptor are assessed to remain Moderate (beneficial) and are Significant;

- Consequences for Highland for the GVA receptor are assessed to remain Minor (beneficial) but are Not significant; and
- Consequences for Scotland and the UK for both the employment and the GVA receptors are assessed to remain Negligible and are Not Significant.

19.7.2.2 Potential cumulative effects on housing and local services receptors during construction

The potential cumulative effects on the employment receptor outlined above also have the potential to influence the results for the housing and local services receptors. Increased competition from other developments could result in lower additional demand for housing and local services in local areas than the levels identified in the assessment of the Project alone. This could occur if local supply constraints mean that a greater proportion of Project content is required to be sourced from suppliers located outside of the Caithness and Sutherland, Highland, and/or Orkney areas.

If this occurs, then the scale of additional demand identified in the Project assessment in section 19.6 may not occur in full. However, it is considered likely that the scale of beneficial effects on the housing and local services receptors would still be within the range of the Low/High results set out in section 19.6.

However, even in the unlikely event of a substantially reduced level of demand for housing and local services as a result of cumulative effects, this would not affect the conclusion of the significance of effects presented in section 19-6. That is:

- Consequences for Orkney for the housing and other local services receptor are assessed to remain Moderate (beneficial) and are Significant;
- Consequences for both Caithness and Sutherland, Highland, and Scotland areas for the housing and other local services are assessed to remain Minor (beneficial) but are Not Significant; and
- Consequences for the UK are not expected to change but these are Negligible and Not Significant.

19.7.2.3 Potential cumulative effects on demand for tourism receptors during construction

The assessment of cumulative effects considers the results of the cumulative assessment contained in chapter 18: Seascape, landscape and visual assessment. In particular, the results of this assessment were that there could be adverse visual impact effects ranging from Low-to-Moderate on small parts of the North Coast 500 and on parts of the Scrabster-Stromness ferry link, both of which are important routes used by visitors to the area.

- North Coast 500: The offshore Project would be visible simultaneously with the Forss group (of offshore windfarms) and the PFOWF close to Crosskirk. The magnitude of change attributable to the offshore Project would be reduced due to its appearance as a subsidiary distant feature behind the PFOWF.
- Ferry route between Scrabster and Stromness: Wind Farms in planning such as Forss III and Cairnmore Hill and PFOWF would appear more prominent on the approach to Scrabster, due to the linear nature of the route and the magnitude of change attributable to the offshore Project along this section of the route would reduce to Low.

However, the affected parts of the routes are small, and the cumulative assessment carried out in chapter 18 does not suggest that the effect would dominate the overall experience of visitors on these routes in within the wider study area.

The assessment of the effects of the Project alone on tourism also considers the potential effects generated by competition for accommodation from the construction workforce. The potential for displacement of visitors from tourist accommodation could, in turn, generate knock-on effects on other tourism businesses (such as visitor attractions) that are dependent on visitor expenditure. However, as was described in the Project alone assessment, this issue would be managed by OWPL through embedded mitigation measures such as the use of bespoke construction workforce accommodation. In addition, tourist accommodation would be used in the tourism off-season as part of agreements with local hoteliers and other providers of serviced accommodation. There might also be use made of private rented housing stock, although this would be expected to be very limited.

The potential effect of additional demand for local workforce resources from the cumulative impact list of developments would likely be to increase the need to accommodate a visiting construction workforce. In addition, competition for resources from other developments could also increase competition for tourist bedspaces to provide accommodation for construction stage workforces needed for other developments.

If either (or both) of these effects occurs, there would be an increased need for the temporary accommodation requirement generated by the Project to be met through an expanded use of a bespoke temporary accommodation facility, in accordance with the Local Accommodation Strategy to be developed and implemented for the Project. It is expected that the embedded mitigation measures implemented for the Project would be sufficiently flexible to deal with this occurrence.

Overall, the most likely outcome of cumulative effects on tourism accommodation receptors during the construction stage is that the results would lie within the range of Low/High results set out for the Project alone assessment in section 19.6. That is:

- Consequences for (1) Caithness and Sutherland and (2) Orkney for the tourism receptor are assessed to remain Minor (adverse) but are Not Significant; and
- Consequences for all other areas are not expected to change but these are Negligible and Not Significant.

19.7.2.4 Potential cumulative effects on commercial fishing receptors during construction

The Project alone assessment within chapter 14: Commercial fisheries concluded – following secondary mitigation measures related to creelers in the OAA – that there were no significant adverse cumulative socio-economic effects on the local commercial fishing industry expected during the construction stage of the Project.

The cumulative assessment also undertaken in chapter 14: Commercial fisheries concluded that there were no significant adverse cumulative economic effects on the local commercial fishing industry expected during the construction stage.

Given these results, the conclusion of the Project alone assessment for potential effects on business activity linked to commercial fishing – such as the onshore supply chain and/or onshore fish processing activity – is assessed to also apply to consideration of cumulative impacts. That is:

- For Caithness and Sutherland, Orkney, and Highland areas the consequences are expected to remain Minor (adverse) and are Not Significant; and
- Consequences for all other areas are not expected to change but these are Negligible and Not Significant.

19.7.2.5 Potential cumulative effects on socio-cultural receptors during construction

The worst case scenario from the perspective of socio-cultural receptors during Project construction is linked to the number of jobs expected to be created during the construction stage. This is because for the two issues where local communities appear to have most concern about the effects of the Project (displacement effects on tourism and potential effects on crime and anti-social behaviour), the potential extent of such effects is likely to be correlated to a larger construction workforce needed to be accommodated in the area during the construction stage. The magnitude of any such effects are likely to be larger under the High Case scenario.

As discussed above with respect to the cumulative assessment for the employment receptor, competition from other developments could mean that a greater proportion of Project content being supplied from outside the Socio-economics study areas (e.g., from outside the UK).

Therefore, the most likely outcome of additional competition for supply chain capacity from the cumulative list of developments can be expected to be a reduction in the overall size of the locally-based workforce. For this reason, the predicted effect on socio-cultural receptors is that there would be no increase compared to levels predicted in the Project alone assessment (and, if anything, the potential for any adverse effects linked to a visiting workforce would probably be reduced).

Overall it is not considered likely that the additional potential for increased competition for workforce resources from cumulative effects will alter the conclusion of the significance of effects on socio-cultural receptors presented in section 19.6.

That is, for Caithness, North Sutherland, and Orkney, the consequences for the cumulative assessment are assessed to remain Minor (adverse) and are Not Significant.

19.7.2.6 Potential cumulative effects on distributional receptors during construction

The worst case scenario from the perspective of the distributional effects receptor is mainly associated with the estimated number of jobs expected to be created during the construction stage under the High Case scenario. This is because the greater is the number of additional jobs created locally, then potentially greater is the potential for negative effects created from, for example, additional competition for local housing, exacerbation of local income inequalities, and/ or gender income inequalities if an above average proportion of the construction workforce is expected to be male.

The result of the Project alone assessment was that the potential for adverse effects in Orkney is potentially greater than for the other local areas during the construction stage. This is because the local labour market in Orkney is tighter than for Caithness and Sutherland, and it is more likely that a greater proportion of workers will need to be brought to the area to meet recruitment needs. In addition, there already exist greater income inequalities and housing affordability is a more acute problem than, for example, Caithness.

Competition for supply chain resources and workforce would likely be greater when cumulative effects are considered. For example, if other developments seek local resources (such as local workforce and/or private rented accommodation to house visiting workers), then the potential cumulative effect on issues such as local housing affordability could be worsened compared to the situation predicted to occur in the Project alone assessment.

However, embedded mitigation measures deployed during the construction stage of the Project are expected to be sufficiently flexible to address this threat. That is, the expected response from OWPL would be to deploy additional bespoke temporary accommodation resources during the construction stage. Use of additional bespoke temporary accommodation resources would result in lower levels of additional pressure on local housing markets (whilst also reducing the potential for an adverse effect on the provision of tourist accommodation in the local areas).

For these reasons, it is not considered likely that the additional potential for increased competition for workforce resources from cumulative effects will alter the conclusion of the significance of effects on distributional receptors presented in section 19.6. That is:

- For North Sutherland and Orkney, the consequences are expected to remain Minor (adverse) and are Not Significant; and
- For Caithness the consequence is expected to remain Negligible and Not Significant.

19.7.3 Cumulative operation and maintenance effects

All receptors have been taken forward for consideration in the cumulative impact assessment for the operation and maintenance stage. The following sections summarise the nature of the cumulative effects that might be expected to arise.

19.7.3.1 Potential cumulative effects on employment and GVA receptors during operation and maintenance

The potential cumulative effects for employment and GVA receptors during the operation and maintenance stage depends on the extent to which the Project may need to compete for workforce and other resources sourced from within the socio-economics study area with demand for similar resources required for the developments included in the cumulative assessment.

Competition for skilled workers and other resources has the potential to create an additional local supply-side constraint. If this occurs, then a greater proportion of resources required by the Project may need to be sourced from elsewhere. This in turn could mean that the estimates for job and GVA creation during the operation and maintenance stage presented in section 19.6 may not be realised in full.

However, it is relevant to note that a number of embedded mitigation measures are relevant to this scenario. In particular, OWPL has made commitments and investment in programmes to develop workforce skills. This includes £1.7 million committed to a local skills development programme, as well as resources committed to a collaborative strategy (with Scottish Government, UHI, and other ScotWind developers) to promote STEM careers to school children in northern Scotland, including in the Highland and Orkney council areas.

Given these efforts, the most likely outcome of cumulative effects on employment and GVA receptors during the operation and maintenance stage is that the results lie within the range of Low/High results set out in section 19.6. The worst case outcome, however, is that the results tend towards the lower end of this scale for both GVA and employment.

The conclusion of the significance of effects for employment and GVA reported in section 19.6 are therefore unlikely to change as a result of cumulative effects being taken into consideration for the operation and maintenance stage. That is:

- Consequences for Caithness and Sutherland for both the employment and GVA receptors are assessed to remain Major (beneficial) and are Significant;
- Consequences for Orkney for the employment and GVA receptor are assessed to remain Moderate (beneficial) and are Significant;
- Consequences for Highland for the GVA receptor are assessed to remain Moderate (beneficial) and are Significant;
- Consequences for Highland for the employment receptor are assessed to remain Minor (beneficial) and are Not Significant; and
- Consequences for all other areas are not expected to change but these are Negligible and Not Significant.

19.7.3.2 Potential cumulative effects on housing and local services receptors during operation and maintenance

The potential cumulative effects on the employment receptor outlined above also have the potential to influence the results for the housing and local services receptors during the operation and maintenance stage. For example, increased competition from other developments could result in a greater proportion of Project content being sourced from suppliers located outside of the Caithness, Highland, and/or Orkney areas. This could result in lower additional demand for a local workforce, implying in turn lower levels of demand for housing and local services in local areas compared to levels predicted in the Project alone assessment.

If this occurs, then the scale of additional demand for the operation and maintenance stage identified in the Project assessment in Section 19.6 may not occur in full. However, it is considered likely that the scale of beneficial effects on the housing and local services receptors would still be within the range of the Low/High results set out in section 19.6.

However, even in the unlikely event of a substantially reduced level of demand for housing and local services as a result of cumulative effects, this would not affect the conclusion of the significance of effects presented in section 19.6 for the operation and maintenance stage. That is:

- Consequences for Orkney for the housing and local services receptor are assessed to remain Moderate (beneficial) and are Significant;

- Consequences for Caithness and Sutherland for the housing and local services receptor are assessed to remain Minor (beneficial) and are Not Significant; and
- Consequences for all other areas are not expected to change but these are Negligible and Not Significant.

19.7.3.3 Potential cumulative effects on demand for tourism receptors during operation and maintenance

The assessment of cumulative effects during the operation and maintenance stage takes into account the results of the cumulative assessment contained in chapter 18: Seascape, landscape and visual assessment. In particular, the results of this assessment were that there could be Moderate (adverse) visual impact effects on small parts of the North Coast 500 and the Scrabster-Stromness ferry link, both of which are important routes used by visitors to the area. However, the affected parts of the routes are small, and the assessment does not suggest that the cumulative effect would dominate the overall experience of visitors on these routes in within the wider study area.

The assessment of the Project alone effects on tourism also considers the potential effects generated by competition for accommodation from the operational workforce. However, the operational workforce is much smaller than the construction stage workforce, and most workers will reside permanently in the area. There may be a small residual need for specialists or managers normally based outside the area, but this would be relatively few in number and would be episodic.

Overall, the most likely outcome of cumulative effects on tourism accommodation receptors during the operation and maintenance stage is that the results would lie within the range of Low/High results set out for the Project alone assessment in section 19.6. That is:

- Consequences for Caithness and Sutherland for the tourism receptor are assessed to remain Minor (adverse) and are Not Significant; and
- Consequences for all other areas are not expected to change but these are Negligible and are Not Significant.

19.7.3.4 Potential cumulative effects on commercial fishing receptors during operation and maintenance

The assessment for chapter 14: Commercial fisheries has not identified any significant adverse cumulative effects on the local commercial fishing industry during the operation and maintenance stage of the Project.

For this reason, the result of the Project alone assessment for potential effects on business activity linked to commercial fishing – such as the onshore supply chain and/or onshore fish processing activity – is also unchanged for the operation and maintenance stage.

Therefore, the result of the cumulative assessment for the socio-economics topic with respect to the onshore business activity linked to commercial fisheries during the operation and maintenance stage is that:

- The consequence for the commercial fishing (onshore) receptors in Caithness and Sutherland, Highland, and Orkney will remain Minor (adverse) and Not Significant; and

- In Scotland and the UK the result remains that the consequence will be Negligible and Not Significant.

19.7.3.5 Potential cumulative effects on socio-cultural receptors during operation and maintenance

The worst case scenario from the perspective of socio-cultural receptors during the operation and maintenance stage is linked to the number of jobs expected to be created during the operation and maintenance stage. Competition from other developments could mean that a greater proportion of the permanent Project workforce migrating into the local area from other parts of Scotland, the UK or internationally. The magnitude of any such effects are likely to be larger under the High Case scenario.

Many of the employment opportunities created during the operation and maintenance stage are expected to require high levels of skills and/or professional qualifications. The jobs created are expected to be relatively well paid, and attract long-term residents to the area, including families. For these reasons, the permanent employment opportunities are not expected to generate significant additional levels of crime and antisocial behaviour, either in 'Project alone' terms or in combination with the cumulative effects of other plans and projects (developments).

Therefore, it is not considered likely that the additional potential for increased competition for workforce resources from cumulative effects during the operation and maintenance stage will alter the conclusion of the significance of effects on socio-cultural receptors presented in section 19.6.

That is, consequences for Caithness, North Sutherland, and Orkney are expected to remain Minor (adverse) and are Not Significant.

19.7.3.6 Potential cumulative effects on distributional receptors during operation and maintenance

The worst case scenario from the perspective of the distributional effects receptor is mainly associated with the estimated number of jobs expected to be created during the operation and maintenance stage under the High Case scenario. This is because the greater is the number of additional jobs created locally, then potentially greater is the potential for negative effects created from, for example, additional competition for local housing and the exacerbation of income inequalities.

As discussed with respect to other receptors, competition for a skilled workforce could be higher when cumulative effects are considered. This implies that the potential cumulative effect on issues such as local housing affordability could be greater compared to the situation predicted to occur in the Project alone assessment.

However, through embedded mitigation measures OWPL would expend significant levels of resource to encourage and facilitate local recruitment of workers from the local resident population in the Highland and Orkney council areas. There are also opportunities for the operational workforce required to be located in Caithness to recruit from the workforce expected to be released from Dounreay as the decommissioning of that facility progresses.

For these reasons, it is not considered likely that the additional potential for increased competition for local workforce resources from cumulative effects will alter the conclusion of the significance of effects on distributional receptors presented in section 19.6 during the operation and maintenance stage. That is:

- Consequences for North Sutherland, and Orkney would remain **Minor** (adverse) and are **Not Significant**; and
- Consequences for Caithness would remain **Negligible** and **Not Significant**.

19.7.4 Cumulative decommissioning effects

As there is limited information on the decommissioning of the offshore Project and that of other developments, it is not possible to provide a meaningful cumulative assessment. However, the cumulative effects are expected to be less than or equal to the construction stage. Moreover, the decommissioning of multiple other developments would not be expected to occur at the same time as the decommissioning stage of the offshore Project.

A Decommissioning Programme will be developed pre-construction to address the principal decommissioning measures for the offshore and onshore aspects of Project and will be written in accordance with applicable guidance.

- A Decommissioning Programme (offshore) will detail the environmental management, and schedule for decommissioning and will be reviewed and updated throughout the lifetime of the offshore Project to account for changing best practices; and
- The Decommissioning Restoration and Aftercare Plan (onshore) will provide the equivalent management plan for the onshore environment and will likewise be reviewed and updated throughout the lifetime of the onshore Project to account for changing best practices.

19.7.5 Summary of cumulative effects

A summary of the outcomes of the assessment of cumulative effects for the construction, operation and maintenance and decommissioning stages of the offshore Project is provided in the set of tables overleaf:

- Table 19-45 provides cumulative effect results for Caithness and Sutherland;
- Table 19-46 provides cumulative effect results for Highland;
- Table 19-47 provides cumulative effect results for Orkney;
- Table 19-48 provides cumulative effect results for Caithness (only);
- Table 19-49 provides cumulative effect results for North Sutherland;
- Table 19-50 provides cumulative effect results for Scotland; and
- Table 19-51 provides cumulative effect results for the UK.

Table 19-45 Summary of assessment of cumulative effects: Caithness and Sutherland

POTENTIAL EFFECT	RECEPTOR	SENSITIVITY OF RECEPTOR	MAGNITUDE OF IMPACT	CONSEQUENCE (SIGNIFICANCE OF EFFECT)	SECONDARY MITIGATION REQUIREMENTS	RESIDUAL CONSEQUENCE (SIGNIFICANCE OF EFFECT)
Construction						
Change in employment levels	Employment	High	High	Major (significant, beneficial))	None required above the embedded measures that are in place to maximise this beneficial impact.	Major (significant, beneficial)
Change in GVA levels	GVA	High	High	Major (significant, beneficial)	None required above the embedded measures that are in place to maximise this beneficial impact.	Major (significant, beneficial)
Change in demand for housing and local services	Housing and local services	Low	High	Minor (not significant, beneficial)	None required above the embedded measures that are in place to maximise this beneficial impact.	Minor (not significant, beneficial)
Change in the volume and value of tourism	Tourism	Medium	Low	Minor (not significant)	None required above embedded measures.	Minor (not significant)
Change in the value of onshore business activity linked to commercial fishing	Commercial fisheries supply chain or fish processing/wholesaling businesses	Medium	Low	Minor (not significant)	None required above embedded measures.	Minor (not significant)

POTENTIAL EFFECT	RECEPTOR	SENSITIVITY OF RECEPTOR	MAGNITUDE OF IMPACT	CONSEQUENCE (SIGNIFICANCE OF EFFECT)	SECONDARY MITIGATION REQUIREMENTS	RESIDUAL CONSEQUENCE (SIGNIFICANCE OF EFFECT)
Operation and maintenance						
Change in employment levels	Employment	High	High	Major (significant, beneficial)	None required above the embedded measures that are in place to maximise this beneficial impact.	Major (significant, beneficial)
Change in GVA levels	GVA	High	High	Major (significant, beneficial)	None required above the embedded measures that are in place to maximise this beneficial impact.	Major (significant, beneficial)
Change in demand for housing and local services	Housing and local services	Low	High	Minor (not significant, beneficial)	None required above the embedded measures that are in place to maximise this beneficial impact.	Minor (not significant, beneficial)
Change in the volume and value of tourism	Tourism	Medium	Low	Minor (not significant)	None required above embedded measures.	Minor (not significant)
Change in the value of onshore business activity linked to commercial fishing	Commercial fisheries supply chain or fish processing/wholesaling businesses	Medium	Low	Minor (not significant)	None required above embedded measures.	Minor (not significant)

Table 19-46 Summary of assessment of cumulative effects: Highland

POTENTIAL EFFECT	RECEPTOR	SENSITIVITY OF RECEPTOR	MAGNITUDE OF IMPACT	CONSEQUENCE (SIGNIFICANCE OF EFFECT)	SECONDARY MITIGATION REQUIREMENTS	RESIDUAL CONSEQUENCE (SIGNIFICANCE OF EFFECT)
Construction						
Change in employment levels	Employment	Medium	Medium	Moderate (significant, beneficial)	None required above the embedded measures that are in place to maximise this beneficial impact.	Moderate (significant, beneficial)
Change in GVA levels	GVA	Medium	Low	Minor (not significant, beneficial)	None required above the embedded measures that are in place to maximise this beneficial impact.	Minor (not significant, beneficial)
Change in demand for housing and local services	Housing and local services	Low	High	Minor (not significant, beneficial)	None required above the embedded measures that are in place to maximise this beneficial impact.	Minor (not significant, beneficial)
Change in the volume and value of tourism	Tourism	Medium	Negligible	Negligible (not significant)	None required above embedded measures.	Negligible (not significant)
Change in the value of onshore business activity	Commercial fisheries supply chain or fish	Medium	Low	Minor (not significant)	None required above embedded measures.	Minor (not significant)

POTENTIAL EFFECT	RECEPTOR	SENSITIVITY OF RECEPTOR	MAGNITUDE OF IMPACT	CONSEQUENCE (SIGNIFICANCE OF EFFECT)	SECONDARY MITIGATION REQUIREMENTS	RESIDUAL CONSEQUENCE (SIGNIFICANCE OF EFFECT)
linked to commercial fishing	processing/wholesaling businesses					
Operation and maintenance						
Change in employment levels	Employment	Medium	Low	Minor (not significant, beneficial)	None required above the embedded measures that are in place to maximise this beneficial impact.	Minor (not significant, beneficial)
Change in GVA levels	GVA	Medium	Medium	Moderate (significant, beneficial)	None required above the embedded measures that are in place to maximise this beneficial impact.	Moderate (significant, beneficial)
Change in demand for housing and local services	Housing and local services	Low	High	Minor (not significant, beneficial)	None required above the embedded measures that are in place to maximise this beneficial impact.	Minor (not significant, beneficial)
Change in the volume and value of tourism	Tourism	Medium	Negligible	Negligible (not significant)	None required above embedded measures.	Negligible (not significant)
Change in the value of onshore business activity linked to commercial fishing	Commercial fisheries supply chain or fish processing/wholesaling businesses	Medium	Low	Minor (not significant)	None required above embedded measures.	Minor (not significant)

Table 19-47 Summary of assessment of cumulative effects: Orkney

POTENTIAL EFFECT	RECEPTOR	SENSITIVITY OF RECEPTOR	MAGNITUDE OF IMPACT	CONSEQUENCE (SIGNIFICANCE OF EFFECT)	SECONDARY MITIGATION REQUIREMENTS	RESIDUAL CONSEQUENCE (SIGNIFICANCE OF EFFECT)
Construction						
Change in employment levels	Employment	Medium	High	Moderate (significant, beneficial)	None required above the embedded measures that are in place to maximise this beneficial impact.	Moderate (significant, beneficial)
Change in GVA levels	GVA	Medium	High	Moderate (significant, beneficial)	None required above the embedded measures that are in place to maximise this beneficial impact.	Moderate (significant, beneficial)
Change in demand for housing and local services	Housing and local services	Medium	High	Moderate (significant, beneficial)	None required above the embedded measures that are in place to maximise this beneficial impact.	Moderate (significant, beneficial)
Change in the volume and value of tourism	Tourism	Medium	Low	Minor (not significant)	None required above embedded measures.	Minor (not significant)
Change in the value of onshore business activity	Commercial fisheries supply chain or fish	Medium	Low	Minor (not significant)	None required above embedded measures.	Minor (not significant)

POTENTIAL EFFECT	RECEPTOR	SENSITIVITY OF RECEPTOR	MAGNITUDE OF IMPACT	CONSEQUENCE (SIGNIFICANCE OF EFFECT)	SECONDARY MITIGATION REQUIREMENTS	RESIDUAL CONSEQUENCE (SIGNIFICANCE OF EFFECT)
linked to commercial fishing	processing/wholesaling businesses					
Change in socio-cultural conditions	Socio-cultural effects	Low	High	Minor (not significant)	None required above embedded measures.	Minor (not significant)
Distributional effects	Distributional effects	Medium	Low	Minor (not significant)	None required above embedded measures.	Minor (not significant)
Operation and maintenance						
Change in employment levels	Employment	High	Medium	Moderate (significant beneficial)	None required above the embedded measures that are in place to maximise this beneficial impact.	Moderate (significant beneficial)
Change in GVA levels	GVA	High	Medium	Moderate (significant, beneficial)	None required above the embedded measures that are in place to maximise this beneficial impact.	Moderate (significant, beneficial)
Change in demand for housing and local services	Housing and local services	Medium	High	Moderate (significant, beneficial)	None required above the embedded measures that are in place to maximise this beneficial impact.	Moderate (significant, beneficial)

POTENTIAL EFFECT	RECEPTOR	SENSITIVITY OF RECEPTOR	MAGNITUDE OF IMPACT	CONSEQUENCE (SIGNIFICANCE OF EFFECT)	SECONDARY MITIGATION REQUIREMENTS	RESIDUAL CONSEQUENCE (SIGNIFICANCE OF EFFECT)
Change in the volume and value of tourism	Tourism	Medium	Negligible	Negligible (not significant)	None required above embedded measures.	Negligible (not significant)
Change in the value of onshore business activity linked to commercial fishing	Commercial fisheries supply chain or fish processing/wholesaling businesses	Medium	Low	Minor (not significant)	None required above embedded measures.	Minor (not significant)
Change in socio-cultural conditions	Socio-cultural effects	Low	Medium	Minor (not significant)	None required above embedded measures.	Minor (not significant)
Distributional effects	Distributional effects	Medium	Low	Minor (not significant)	None required above embedded measures.	Minor (not significant)

Table 19-48 Summary of assessment of cumulative effects: Caithness (only)

POTENTIAL EFFECT	RECEPTOR	SENSITIVITY OF RECEPTOR	MAGNITUDE OF IMPACT	CONSEQUENCE (SIGNIFICANCE OF EFFECT)	SECONDARY MITIGATION REQUIREMENTS	RESIDUAL CONSEQUENCE (SIGNIFICANCE OF EFFECT)
Construction						
Change in socio-cultural conditions	Socio-cultural effects	Low	High	Minor (not significant)	None required above embedded measures.	Minor (not significant)
Distributional effects	Distributional effects	Low	Low	Negligible (not significant)	None required above embedded measures.	Negligible (not significant)
Operations and Maintenance						
Change in socio-cultural conditions	Socio-cultural effects	Low	High	Minor (not significant)	None required above embedded measures.	Minor (not significant)
Distributional effects	Distributional effects	Low	Low	Negligible (not significant)	None required above embedded measures.	Negligible (not significant)

Table 19-49 Summary of assessment of cumulative effects: North Sutherland

POTENTIAL EFFECT	RECEPTOR	SENSITIVITY OF RECEPTOR	MAGNITUDE OF IMPACT	CONSEQUENCE (SIGNIFICANCE OF EFFECT)	SECONDARY MITIGATION REQUIREMENTS	RESIDUAL CONSEQUENCE (SIGNIFICANCE OF EFFECT)
Construction						
Change in socio-cultural conditions	Socio-cultural effects	Medium	Low	Minor (not significant)	None required above embedded measures.	Minor (not significant)
Distributional effects	Distributional effects	Medium	Low	Minor (not significant)	None required above embedded measures.	Minor (not significant)
Operation and maintenance						
Change in socio-cultural conditions	Socio-cultural effects	Medium	Low	Minor (not significant)	None required above embedded measures.	Minor (not significant)
Distributional effects	Distributional effects	Medium	Low	Minor (not significant)	None required above embedded measures.	Minor (not significant)

Table 19-50 Summary of assessment of cumulative effects: Scotland

POTENTIAL EFFECT	RECEPTOR	SENSITIVITY OF RECEPTOR	MAGNITUDE OF IMPACT	CONSEQUENCE (SIGNIFICANCE OF EFFECT)	SECONDARY MITIGATION REQUIREMENTS	RESIDUAL CONSEQUENCE (SIGNIFICANT OF EFFECT)
Construction						
Change in employment levels	Employment	Low	Low	Negligible (not significant)	None required above embedded measures.	Negligible (not significant)
Change in GVA levels	GVA	Low	Negligible	Negligible (not significant)	None required above embedded measures.	Negligible (not significant)
Change in demand for housing and local services	Housing and local services	Medium	Low	Minor (not significant, beneficial)	None required above the embedded measures that are in place to maximise this beneficial impact.	Minor (not significant, beneficial)
Change in the volume and value of tourism	Tourism	Low	Negligible	Negligible (not significant)	None required above embedded measures.	Negligible (not significant)
Change in the value of onshore business activity linked to commercial fishing	Commercial fisheries supply chain or fish processing/wholesaling businesses	Low	Negligible	Negligible (not significant)	None required above embedded measures.	Negligible (not significant)
Operation and maintenance						

POTENTIAL EFFECT	RECEPTOR	SENSITIVITY OF RECEPTOR	MAGNITUDE OF IMPACT	CONSEQUENCE (SIGNIFICANCE OF EFFECT)	SECONDARY MITIGATION REQUIREMENTS	RESIDUAL CONSEQUENCE (SIGNIFICANT OF EFFECT)
Change in employment levels	Employment	Low	Negligible	Negligible (not significant)	None required above embedded measures.	Negligible (not significant)
Change in GVA levels	GVA	Low	Negligible	Negligible (not significant)	None required above embedded measures.	Negligible (not significant)
Change in demand for housing and local services	Housing and local services	Medium	Negligible	Negligible (not significant)	None required above embedded measures.	Negligible (not significant)
Change in the volume and value of tourism	Tourism	Low	Negligible	Negligible (not significant)	None required above embedded measures.	Negligible (not significant)
Change in the value of onshore business activity linked to commercial fishing	Commercial fisheries supply chain or fish processing/wholesaling businesses	Low	Negligible	Negligible (not significant)	None required above embedded measures.	Negligible (not significant)

Table 19-51 Summary of assessment of cumulative effects: United Kingdom

POTENTIAL EFFECT	RECEPTOR	SENSITIVITY OF RECEPTOR	MAGNITUDE OF IMPACT	CONSEQUENCE (SIGNIFICANCE OF EFFECT)	SECONDARY MITIGATION REQUIREMENTS	RESIDUAL CONSEQUENCE (SIGNIFICANCE OF EFFECT)
Construction						
Change in employment levels	Employment	Low	Negligible	Negligible (not significant)	None required above embedded measures.	Negligible (not significant)
Change in GVA levels	GVA	Low	Negligible	Negligible (not significant)	None required above embedded measures.	Negligible (not significant)
Change in demand for housing and local services	Housing and local services	High	Negligible	Negligible (not significant)	None required above embedded measures.	Negligible (not significant)
Change in the volume and value of tourism	Tourism	Low	Negligible	Negligible (not significant)	None required above embedded measures.	Negligible (not significant)
Change in the value of onshore business activity linked to commercial fishing	Commercial fisheries supply chain or fish processing/wholesaling businesses	Low	Negligible	Negligible (not significant)	None required above embedded measures.	Negligible (not significant)
Operation and maintenance						

POTENTIAL EFFECT	RECEPTOR	SENSITIVITY OF RECEPTOR	MAGNITUDE OF IMPACT	CONSEQUENCE (SIGNIFICANCE OF EFFECT)	SECONDARY MITIGATION REQUIREMENTS	RESIDUAL CONSEQUENCE (SIGNIFICANCE OF EFFECT)
Change in employment levels	Employment	Low	Negligible	Negligible (not significant)	None required above embedded measures.	Negligible (not significant)
Change in GVA levels	GVA	Low	Negligible	Negligible (not significant)	None required above embedded measures.	Negligible (not significant)
Change in demand for housing and local services	Housing and local services	High	Negligible	Negligible (not significant)	None required above embedded measures.	Negligible (not significant)
Change in the volume and value of tourism	Tourism	Low	Negligible	Negligible (not significant)	None required above embedded measures.	Negligible (not significant)
Change in the value of onshore business activity linked to commercial fishing	Commercial fisheries supply chain or fish processing/wholesaling businesses	Low	Negligible	Negligible (not significant)	None required above embedded measures.	Negligible (not significant)

19.8 Inter-related effects

Inter-related effects are the potential effects of multiple impacts, affecting one receptor or a group of receptors. Inter-related effects include interactions between the impacts of the different stages of the offshore Project (i.e. interaction of impacts across construction, operation and maintenance and decommissioning), as well as the interaction between impacts on a receptor within an offshore Project stage. The potential inter-related effects for socio-economics receptors are described below.

19.8.1 Inter-related effects between offshore Project stages

The successive Project stages have some potential to generate impacts on certain socio-economics receptors.

In particular, investment in infrastructure, supply chain capacity, and workforce skills within Scotland would be expected to enable the efficient delivery of the construction stage for the Project may also contribute to the generation of socio-economic benefits in subsequent Project stages. For example:

- Skills and expertise developed in the development stage of the Project relevant to surveys and environmental monitoring will also be required during the construction, operations and maintenance, and decommissioning stages of the Project;
- Development of additional harbour capacity for construction stage activities could also be relevant to activities required during Project decommissioning; and
- Development of industrial capacity and skills in the supply chain for equipment and components used in the fabrication and installation stages is also likely to be utilised during the operation and maintenance stage as components and parts require replacement due to normal wear and tear or failure.

With respect to demand for housing and local services, the potential for inter-related effects between Project stages is considered to be minimal.

With respect to the tourism receptor, the potential for inter-related effects between Project stages is considered to be minimal.

The conclusion of the Commercial Fisheries topic assessment is that there is limited potential for inter-related effects between Project stages and the various commercial fisheries receptors. With respect to onshore business activities linked to commercial fishing activity (such as supply chain activity or onshore processing of locally landed fish), the potential for onshore inter-related socio-economics effects between Project stages is also likely to be minimal.

19.8.2 Inter-related effects within an offshore Project stage

There are various inherent inter-related effects between different socio-economics receptors during each Project stage. For example, as has been mentioned on several occasions already in this chapter, there are very likely to be inter-related effects between the employment receptor (i.e. the recruitment of the Project workforce) and:

- The local market for housing and demand for local services such as healthcare and education;
- The workings of the local market for tourism accommodation;

- Effects on socio-cultural receptors, in terms of issues such as community character and concerns among local residents of the potential effect on crime and anti-social behaviour; and
- Effects on distributional receptors, such as impacts on local property values and housing affordability.

However, these various inter-related effects are inherent to the assessment, and they have been considered throughout the assessment of the Project on socio-economics receptors. There is not considered to be any residual potential for inter-related effects within Project stages that have not yet been taken into account.

19.9 Whole Project assessment

The assessment presented in this chapter is a whole Project assessment which considers both onshore and offshore aspects of the Project (see section 19.1). Therefore, no sperate whole Project assessment is required.

19.10 Transboundary effects

The Project has the potential to generate positive economic benefits for businesses and workforces based outside the UK, especially in other European countries. This is because a significant proportion of Project expenditure – especially during the construction stage – is expected to accrue to businesses and workforces located outside the UK. For example, WTGs are expected to be sourced from European suppliers. On this basis, the potential transboundary effects on employment and GVA from the Project are expected to be beneficial.

The potential for transboundary effects on demand for housing and local services in the countries that benefit from Project expenditure cannot be quantified but are highly unlikely to be significant.

There are not expected to be any transboundary effects relating to tourism activity in non-UK countries that benefit from Project expenditure.

There are not expected to be any transboundary effects relating to socio-cultural conditions in non-UK countries that benefit from Project expenditure.

There are not expected to be any transboundary effects relating to distributional issues in non-UK countries that benefit from Project expenditure.

Based on the findings above and the Scoping Opinion agreement that Transboundary effects can be scoped out of the assessment, the implications of Transboundary effects have not been considered further.

19.11 Summary of mitigation and monitoring

Embedded mitigation relevant to the socio-economics assessment is summarised in Table 19-31. No secondary mitigation is proposed with respect to socio-economics receptors.

Monitoring arrangements covering key performance indicators across all socio-economic topic areas will be designed and implemented as a core part of Project implementation activities.

The SCDS for the Project has been designed in collaboration with stakeholders, with the objective of enhancing the level of participation of UK, Scottish and local suppliers within the supply chain for the Project. There are also allied investments and collaborative initiatives that will promote offshore renewable energy as a career destination for university, college, and school leavers, thereby increasing the potential of the Project to contribute to national and local economic development and skills development objectives. Project developers are required to produce a Contracted Position Statement (CPS) at the end of the Development stage of the project which will set out the actual expenditure incurred and the future expenditure which is covered by finalised and well advanced contracts. The CPS will be assessed by Crown Estate Scotland against the SCDS (including any updates made to it since it was first provided) to gauge the extent to which applicants have delivered the commitments they set out in their SCDS. This is expected around the time that major construction contracts are signed, and just before a seabed lease is requested. Without this CPS, developers will not be granted the lease they require to build their project. If the SCDS commitments have not been achieved the applicant faces contractual remedies. The presence of remedies means the SCDS commitments can be regarded with a degree of confidence by stakeholders.

Key performance indicators will be established within the Construction Environmental Management Plan and consistently monitored from the outset of construction activity and on into the operation and maintenance stage. Some indicators may require to be updated and/or modified as the Project is implemented. Any changes would be agreed between the Project team and other stakeholders, such as the Scottish Government and its agencies, THC, OIC, and other relevant bodies.

OPWL would work with THC, OIC, and other local stakeholders to devise appropriate monitoring arrangements. OWPL would also ensure that adequate resources are made available to collect data and information to track progress towards predicted beneficial effects. This information would also be used to monitor and manage mitigation measures relevant to the socio-economics topic.

ScotMER

The Socio-economic ScotMER Receptor Group which is concerned with evidence gaps[38] related to any potential social and economic impacts of offshore renewable developments, has set out the following key themes associated with the socio-economics aspects of planning and consenting processes for offshore wind:

- What are the impacts of offshore renewable energy developments?
- Who is impacted?
- Where do impacts occur?
- How can we improve the SEIA process?
- How can we mitigate impacts and enhance benefits?

The work undertaken to date by OWPL, which has included novel approaches (compared to traditional socio-economic assessments for offshore wind EIA) to inform the EIA, e.g. community questionnaire survey and establishment of a Socio-economic Working Group, together with the proposed monitoring provides useful input to inform the key themes and associated evidence gaps.

[38] https://www.gov.scot/publications/social-and-economic-specialist-receptor-group/#:~:text=The%20Socioeconomic%20ScotMER%20Receptor%20Group%20is%20concerned%20with,social%20and%20economic%20impacts%20of%20offshore%20renewable%20developments.

19.12 References

Caithness STEAM report, 2018-2019. Provided following a request made to The Highland Council.

Highlands and Islands Council (2012). Highland-wide Local Development Plan | Highland-wide Local Development Plan | The Highland Council [Accessed April 2023].

Highlands and Islands Council (2020). Housing Need and Demand Assessment Second Submission (Highland). Housing Land Information | HNDA Third Submission December 2021 (highland.gov.uk) [Accessed January 2022].

Highland STEAM report, 2009-2020. Provided following a request made to The Highland Council.

Highlands and Islands Enterprise (2022). My Life in the Highlands and Islands survey reports. Accessed at: My life survey | Highlands and Islands Enterprise | HIE [Accessed November 2022].

HM Treasury (2022). GDP Price Deflators at Market Prices. Available at: GDP deflators at market prices, and money GDP September 2022 (Quarterly National Accounts) - GOV.UK (www.gov.uk). [Accessed January 2023].

Marine Analytical Unit (MAU) of Marine Scotland (June 2022).. *Defining 'local area' for assessing impact of offshore renewables and other marine developments* Available at: Defining 'local area' for assessing impact of offshore renewables and other marine developments: guidance principles - gov.scot (www.gov.scot) [Accessed September 2022].

MMO (2020). MMO Vessel Monitoring System (VMS) 2017 - 2020. Available online at: https://environment.data.gov.uk/[Accessed 04/04/2023].

National Records for Scotland, Population Projections for Scotland (2018-based). Accessed at: Population Projections Scotland | National Records of Scotland (nrscotland.gov.uk) [Accessed December, 2022].

Office for National Statistics (2020). Population estimates for local authority areas. https://www.nomisweb.co.uk/query/construct/summary.asp?mode=construct&version=0&dataset=2002 [Accessed September 2022 - January 2023].

Office for National Statistics (July 2020-June 2021). Labour supply for Highland and Orkney local authority areas. https://www.nomisweb.co.uk/reports/lmp/la/1946157421/report.aspx [Accessed September 2022 - January 2023].

Office for National Statistics (2019-2021). Business Register and Employment Survey. https://www.nomisweb.co.uk/query/construct/summary.asp?mode=construct&version=0&dataset=189 [Accessed September 2022 - January 2023].

Office for National Statistics (2019-2021). Annual Survey of Hours and Earnings. https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/earningsandworkinghours/bulletins/annualsurveyofhoursandearnings/2021 [Accessed January 2023].

Office for National Statistics (2018 and 2019). Regional Gross Value Added (balanced) by Industry; all NUTS level regions. https://www.ons.gov.uk/economy/grossvalueaddedgva/datasets/nominalandrealregionalgrossvalueaddedbalancedbyindustry [Accessed October 2022 - January 2023].

Office for National Statistics (2019). Regional Gross Value Added (balanced) by Industry; local authorities (Scotland). https://www.ons.gov.uk/economy/grossvalueaddedgva/datasets/regionalgrossvalueaddedbalancedlocalauthoritiesbynuts1region [Accessed October 2022 - January 2023].

Office for National Statistics (2020). UK Business Demography datasets. https://www.ons.gov.uk/businessindustryandtrade/business/activitysizeandlocation/datasets/businessdemographyreferencetable [Accessed October 2022].

Orkney Islands Council (2022). Orkney Islands Regional Marine Plan. Accessed at: https://www.orkney.gov.uk/Service-Directory/D/orkney-islands-regional-marine-plan.htm#:~:text=It%20is%20anticipated%20that%20the,be%20widely%20publicised%20when%20available. [Accessed September 2023].

Orkney Local Housing Strategy 2017-2022. Accessed at Local Housing Strategy 2017-2022 (orkney.gov.uk) [Accessed November 2022].

OIC (2017). Orkney Local Development Plan. Accessed at: Orkney Local Development Plan [Accessed November, 2022].

Orkney STEAM report, 2019. Provided following a request made to Orkney Islands Council.

Offshore Wind Power Limited (OWPL) (2022). West of Orkney Windfarm Community Engagement Plan (CEP). June 2022. Document: 100-WOW-CON-K-GA-0002-01.

OWPL (2023). Pre-Application Consultation Report. July 2023. Document: WO1-WOW-CON-EV-LI-0001.

Scottish Government (2014). National Planning Framework 3. Available at: National Planning Framework 3 - gov.scot (www.gov.scot).

Scottish Government (2015). *National Marine Plan*. https://www.gov.scot/publications/scotlands-national-marine-plan/ [Accessed November 2022].

Scottish Government (2017). Scotland's Energy strategy: The Future of Energy in Scotland. Available at: https://www.gov.scot/binaries/content/documents/govscot/publications/strategy-plan/2017/12/scottish-energy-strategy-future-energy-scotland-9781788515276/documents/00529523-pdf/00529523-pdf/govscot:document/00529523.pdf [Accessed November 2022].

Scottish Government (2019). *Offshore wind energy – draft sectoral marine plan: social and economic impact assessment.* https://www.gov.scot/publications/draft-sectoral-marine-plan-social-econimic-impact-assessment/documents/ [Accessed November 2022].

Scottish Government (2020a). Securing a green recovery on a path to net zero: climate change plan 2018-2032 update. Available at: https://www.gov.scot/publications/securing-green-recovery-path-net-zero-update-climate-change-plan-20182032/ [Accessed November 2022].

Scottish Government (2020b). Sectorial Marine Plan for Offshore Wind Energy. Available at: https://www.gov.scot/publications/sectoral-marine-plan-offshore-wind-energy/documents/ [Accessed November 2022].

Scottish Government (2020c). Scotland offshore wind policy statement. Available at: https://www.gov.scot/publications/offshore-wind-policy-statement/ [Accessed November 2022].

Scottish Government. Scottish Index of Multiple Deprivation (2020d). Accessed at: Scottish Index of Multiple Deprivation 2020 - gov.scot (www.gov.scot) [Accessed October 2022].

Scottish Government (2021). Just Transition – A Fairer, Greener Scotland: Scottish Government response. Available at: https://www.gov.scot/publications/transition-fairer-greener-scotland/ [Accessed November 2022].

Scottish Government (2022a). National Planning Framework 4 - Revised Draft. Available at: National Planning Framework 4: revised draft - gov.scot (www.gov.scot).

Scottish Government (2022b). Scotland's National Strategy for Economic Transformation. Available at: https://www.gov.scot/publications/scotlands-national-strategy-economic-transformation/

Scottish Government (2022c). *Public Perceptions of Offshore Wind Farm developments in Scotland*. Accessed at: Offshore wind farm developments - public perceptions: survey - gov.scot (www.gov.scot).

Scottish Government (2023). Draft Energy Strategy and Just Transition Plan – delivering a fair and secure zero carbon energy system for Scotland. January 2023. ISBN 9781804358054. Available at: https://www.gov.scot/publications/draft-energy-strategy-transition-plan/documents/ [Accessed 16/01/2023].

Skills Development Scotland (2020). Climate Emergency Skills Action Plan. Available at: https://www.skillsdevelopmentscotland.co.uk/media/47336/climate-emergency-skills-action-plan-2020-2025.pdf [Accessed October 2022].

Socio-economic ScotMER Receptor Group: https://www.gov.scot/publications/social-and-economic-specialist-receptor-group/ [Accessed October 2022].

19.13 Abbreviations

ACRONYM OR ABBREVIATION	DEFINITION
ALARP	As Low as Reasonably Practicable
APS	Annual Population Survey
ASHE	Annual Survey of Hours and Earnings
BRES	Business Register and Employment Survey
CaSPlan	Caithness and Sutherland Local Development Plan
CEP	Community Engagement Plan (for the Project)
CES	Crown Estate Scotland
CfD	Contracts for Difference
ECC	Export Cable Corridor
EIA	Environmental Impact Assessment
FTE	Full-time Equivalent (jobs)
GB	Great Britain
GP	General Practitioner
GVA	Gross Value Added
HIE	Highlands and Islands Enterprise
HNDA	Housing Need and Demand Assessment
ICES	International Council for the Exploration of the Sea
ICIA	Island Community Impact Assessment

ACRONYM OR ABBREVIATION	DEFINITION
IZ	Intermediate Zone
km	Kilometre
LQ	Location Quotient
MAU	Marine Analytical Unit
MMO	Marine Management Organisation
MS	Marine Scotland
MD-LOT	Marine Directorate - Licensing Operations Team
MS-LOT	Marine Scotland - Licensing Operations Team
NSA	National Scenic Area
NMP	National Marine Plan
NPF3	Scotland's Third National Planning Framework
NPF4	Scotland 2045: Fourth National Planning Framework
NVQ	National Vocational Qualification
OIC	Orkney Islands Council
OLDP	Orkney Local Development Plan
ONS	Office for National Statistics
OWPL	Offshore Wind Power Limited
PAC	Pre-Application Consultation
PFOWF	Pentland Floating Offshore Wind Farm

ACRONYM OR ABBREVIATION	DEFINITION
RSPB	Royal Society for the Protection of Birds
SCDS	Supply Chain Development Statement
SEWG	Socio-Economic Working Group
SIC	Standard Industrial Classification
SIMD	Scottish Index of Multiple Deprivation
SPP	Scottish Planning Policy
STEAM	Scarborough Tourism Economic Activity Monitor
STEM (subjects and careers)	Science, Technology, Engineering, and Maths.
THC	The Highland Council
WTG	Wind Turbine Generator

19.14 Glossary

TERM	DEFINITION
Direct employment and Gross Value Added	Employment and Gross Value Added (see below) which is associated with the first round of capital expenditure (e.g., Project expenditure with OWPL and/or prime contractors) within each impact area of the assessment.
Gross Value Added (GVA)	The measure of the value of goods and services produced in an area, by an industry, or by an individual company.
Indirect employment and Gross Value Added	Employment and Gross Value Added associated with the supply of goods and services to main contractors by other companies located within each impact area of the assessment.
Induced employment and Gross Value Added	Further economic activity (beyond direct and indirect effects) that occur with each spatial impact area, which are associated with additional local income effects and local supplier purchases.
Location Quotient (LQ)	A measure of an area's specialisation relative to a larger area (such as Great Britain or the United Kingdom). An LQ of less than 1.0 means that an area is less specialised in that activity than the benchmark area, whereas an LQ greater than 1.0 means it is more specialised.