



Chapter 19

Socioeconomics, Tourism and Recreation

Offshore EIA Report: Volume 1

Revision history

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Table of Contents

CHAPTER 19: Offshore Socioeconomics, Tourism and Recreation	1
19.1 Introduction	1
19.2 Green Volt Beneficial Economic Contribution	1
19.3 Legislation, Guidance and Policy	3
19.4 Consultation	4
19.5 Assessment Methodology	15
19.6 Scope	18
19.7 Existing Environment	20
19.8 Potential Impacts	34
19.9 Assessment of Potential Impacts	37
19.10 Assessment of Cumulative Impacts	45
19.11 Transboundary Impacts	58
19.12 Inter-relationships	58
19.13 Summary	58
References	61

Table of Tables

Table 19.1 Consultation Responses	5
Table 19.2 Definitions of receptor value used in the socioeconomics and tourism impact assessment	15
Table 19.3 Definitions for magnitude levels used in the socioeconomics and tourism impact assessment	16
Table 19.4 Effect Significance Matrix for Socioeconomics, tourism and recreation receptors	17
Table 19.5 Effect significance definitions	17
Table 19.6 Offshore socioeconomics and tourism data sources	18
Table 19.7 Total and working age population (WAP) for relevant council regions and nationally, 2020. Source: ONS, 2020, 'Mid-year Population Estimates'	22
Table 19.8 Headline performance on key labour market indicators for relevant council regions and nationally, 2021. Source: ONS (Oct 2020-Sep 2021) 'Annual Population Survey'	22
Table 19.9 Unemployment rates for relevant council regions and nationally, 2021. Source: ONS (Oct 2020-Sep 2021) 'Annual Population Survey'	22
Table 19.10 Education levels of working age adults by SVQ level, other and no qualifications for relevant council regions and nationally, 2021. Source: ONS (Oct 2020-Sep 2021) 'Annual Population Survey'	22
Table 19.11 Employment by standard occupation classification for relevant council regions and nationally, 2021. Source: ONS (Oct 2020-Sep 2021) 'Annual Population Survey'	23

Table 19.12 Median weekly gross pay for full-time employees and residents of relevant council regions and nationally, 2021. Source, ONS (2021) 'ONS annual survey of hours and earnings - resident analysis'	23
Table 19.13 GVA performance for relevant council regions and nationally, 2017. Source: ONS, 2018	28
Table 19.14 Regional Tourism Statistics for 2019 (Visit Scotland, 2020)	34
Table 19.15 Potential impacts scoped in or out of the EIA for socioeconomics, tourism and recreation	35
Table 19.16 Summary of potential impacts to offshore social-economics and tourism	35
Table 19.17 Estimates of the Employment Generated by the Construction Phase of the Project	38
Table 19.18 Estimates of the Employment Generated by the Operation Phase of the Project	41
Table 19.19 Estimates of the Number of Workers Required for the Decommissioning Phase of the Project	43
Table 19.20 Potential Socioeconomics and Tourism Cumulative Impacts	45
Table 19.21 Summary of Projects considered for the CIA in Relation to the Topic	49
Table 19.22 Socioeconomics, Tourism and Recreation inter-relationships	58
Table 19.23 Potential Impacts Identified for Socioeconomics, Tourism and Recreation Receptors	59

Table of Figures

Figure 19.1 Population projections for A) Scotland and B) Aberdeenshire and Aberdeen City Council areas, based on 2018 data. Data sourced from National Statistics, 2020b.	20
Figure 19.2 Mid-year estimates for population by age group for Aberdeenshire and Aberdeen City Council areas and Scotland in 2000 and 2020. Data sourced from National Statistics, 2020a.	21
Figure 19.3 The percentage of the total working age population employed in different standard occupation classifications in Oct 2020-Sep 2021 in the local Council areas and in Scotland. Source: ONS (Oct 2020-Sep 2021) 'Annual Population Survey'	23
Figure 19.4 Current experience and commercial track record in offshore wind of Scottish companies active in other industries. Total survey respondents = 326. Figure sourced from Scottish Renewables (2022).	26
Figure 19.5 Current experience and commercial track record in offshore wind of O&G companies relative to their O&G experience/track record. Figure sourced from Scottish Renewables (2022).	27
Figure 19.6 Recreational Marine Users	30
Figure 19.7 Recreational Activities	31
Figure 19.8 Marine tourism GVA (left) and employment (headcount) (right) by Scottish Marine Region, 2017. Source: Marine Scotland. Scottish Government (2019).	33
Figure 19.9 Proposed Project timeline	35

Appendices (Volume 2)

Appendix 1.1 Scoping Opinion

Appendix 1.2 Offshore Scoping Report

Appendix 14.1 Anatec - Navigational Risk Assessment

Acronyms

Acronym	Description
ACCSS	Acorn Carbon Capture and Storage Site
AIS	Automatic Identification System
BEIS	Department for Business, Energy and Industrial Strategy
BPA	British Ports Association
CEMP	Construction Environmental Management Plan
CIA	Cumulative Impact Assessment
COM	Construction, Operation and Maintenance
CTV	Crew Transfer Vessel
EIA	Environmental Impact Assessment
EU	European Union
FTE	Full-time Equivalent
GEN	General Policy
GVA	Gross value added
GW	Gigawatt
HDD	Horizontal Directional Drilling
HVAC	High Voltage Alternative Current
HVDC	High Voltage Direct Current
INTOG	Innovation and Targeted Oil & Gas
ITIA	Independent Tourism Impact Assessment
MHWS	Mean High Water Springs
MPS	Marine Policy Statement

MS-LOT	Marine Scotland Licensing Operations Team
MS-MAU	Marine Scotland Marine Analytical Unit
NLB	National Lighthouse Board
NPS	National Policy Statement
NtM	Notifications to Mariners
O&G	Oil and gas
O&M	Operation and Maintenance
ONS	Office for National Statistics
PAC	Pre-Application Consultation
PSV	Platform Supply Vessel
RAF	Royal Air Force
RYA	Royal Yachting Association
SCDS	Supply Chain development Statement
SMRTS	Scottish Marine Recreation & Tourism Survey
SOV	Service Operation Vessel
SOWEC	Scottish Offshore Wind Energy Council
SUP	Stand up Paddleboarding
SVQ	Scottish Vocational Qualification
UK	United Kingdom
UKHO	United Kingdom Hydrographic Office
WAP	Working Age Population
WTG	Wind Turbine Generator

Glossary

Term	Description
Applicant	Green Volt Offshore Windfarm Ltd.
Buzzard	Buzzard Platform Complex.
Buzzard Export Cable Corridor	The area in which the export cables will be laid, from the perimeter of the Windfarm Site to Buzzard Platform Complex.
Green Volt Offshore Windfarm	Offshore windfarm including associated onshore and offshore infrastructure development (Combined On and Offshore Green Volt Projects).
Horizontal Directional Drilling	Mechanism for installation of export cable at landfall.
Inter-array cables	Cables which link the wind turbines to each other and the offshore substation platform.
Landfall Export Cable Corridor	The area in which the export cables will be laid, from the perimeter of the Windfarm Site to landfall.
Mean High Water Springs	At its highest and 'Neaps' or 'Neap tides' when the tidal range is at its lowest. The height of Mean High Water Springs (MHWS) is the average throughout the year, of two successive high waters, during a 24-hour period in each month when the range of the tide is at its greatest (Spring tides).
Moorings	Mechanism by which wind turbine generators are fixed to the seabed.
NorthConnect Parallel Export Cable Corridor Option	Landfall Export Cable Corridor between NorthConnect Parallel Landfall and point of separation from St Fergus South Export Cable Corridor Option.
NorthConnect Parallel Landfall	Southern landfall option where the offshore export cables come ashore.
Offshore Development Area	Encompasses i) Windfarm Site, including offshore substation platform ii) Offshore Export Cable Corridor to Landfall, iii) Export Cable Corridor to Buzzard Platform Complex.
Offshore export cables	The cables which would bring electricity from the offshore substation platform to the Landfall or to the Buzzard Platform Complex.
Offshore infrastructure	All of the offshore infrastructure, including wind turbine generators, offshore substation platform and all inter-array and export cables.
Offshore substation platform	A fixed structure located within the Windfarm Site, containing electrical equipment to aggregate the power from the wind turbine generators and convert it into a more suitable form for export to shore.
Onshore Export Cable Corridor	The proposed onshore area in which the export cables will be laid, from landfall to the onshore substation.
Project	Green Volt Offshore Windfarm project as a whole, including associated onshore and offshore infrastructure development.

Safety zones	An area around a structure or vessel which must be avoided.
St Fergus South Export Cable Corridor Option	Landfall Export Cable Corridor between St Fergus South Landfall and point of separation from NorthConnect Parallel Export Cable Corridor Option.
St Fergus South Landfall	Northern landfall option where the offshore export cables come ashore.
Windfarm Site	The area within which the wind turbine generators, offshore substation platform and inter-array cables will be present.

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CHAPTER 19: Offshore Socioeconomics, Tourism and Recreation

19.1 Introduction

1. This chapter describes the socioeconomic, tourism and recreation baseline conditions, identifies potential impacts, and assesses the significance of effects which may arise from the construction, and operation of the Project (the Project refers to the offshore elements of the Green Volt Offshore Windfarm only, up to Mean High Water Springs (MHWS)). Where required, mitigation measures to avoid, reduce or offset potential adverse effects or further enhance potential beneficial effects are identified.
2. This chapter of the **Offshore Environmental Impact Assessment (EIA) Report** has been written by Royal HaskoningDHV. Appropriately qualified and experienced marine technical specialists from Royal HaskoningDHV have completed the impact assessment with reference to the relevant guidance (e.g. Scottish Government, 2008).
3. The impacts assessed on socioeconomic and tourism have potential interactions with the following offshore environment chapters:
 - **Chapter 13: Commercial Fisheries;**
 - **Chapter 14: Shipping and Navigation;**
 - **Chapter 15: Offshore Archaeology and Cultural Heritage; and**
 - **Chapter 17: Infrastructure and Other Marine Users.**
4. The main impacts of the Project on the abovementioned receptors (e.g. commercial fisheries) are covered in their dedicated chapters and are not re-assessed here.
5. This chapter considers *offshore* socioeconomic, tourism and recreation impacts only. For onshore impacts, please refer to the separate **Onshore EIA Report**, where they are appropriately addressed. It is recognised that the onshore EIA assessment will be undertaken later than the submission of the Offshore EIA Report. To enable consideration of the on and offshore elements of the Project as a whole, an additional document has been prepared. This additional document is called the Summary of Offshore and Onshore Environmental Impact Assessments and provides a summary of the Offshore EIA Report and the predicted summary of the onshore EIA. It will be submitted to the Scottish Ministers along with the offshore application documents and will be available on the Green Volt website¹. If required, it will be updated upon completion of the Onshore EIA Report.

19.2 Green Volt Beneficial Economic Contribution

6. As discussed in **Chapter 3: Policy and Legislative Context**, the Scottish Government has set in place targets to reduce greenhouse gas emissions, which are set out in the Climate Change (Emissions Reduction Targets) (Scotland) Act 2019. This Act aims to ensure Scotland contributes appropriately to the world's efforts to deliver on the Paris Agreement, reached at the 21st Conference of the Parties of the United Nations Framework Convention on Climate Change. The Emissions Reduction Targets include a reduction of all greenhouse gases to net zero by 2045 at the latest, with interim targets for reductions of at least 56% by 2020, 75% by 2030 and 90% by 2040.
7. Scotland's Offshore Wind Policy Statement (Scottish Government, 2020) further develops Scotland's offshore wind ambitions, with aims to secure 11 Gigawatt (GW) of offshore wind capacity in Scottish

¹ <https://greenvoltoffshorewind.com>

waters by 2030. The policy statement also recognises the “huge” economic opportunity provided by floating wind technology. Crown Estate Scotland (2018) estimates that the United Kingdom (UK) floating offshore wind market has potential to support 17,000 jobs and £33.6 billion of Gross Value Added (GVA), with particular potential for deployment in Scotland’s 462,000 km² of waters, much of which are more than 60m in depth. Globally, the market is set to grow to at least 4 GW of capacity by 2030 and 55 GW by 2050, offering an export opportunity to Scotland’s supply chain which is estimated at around £550 million per annum by 2050. Scotland has recently concluded the competitive offshore wind leasing round, ScotWind, which announced the successful projects in January 2022. The ScotWind tender process awarded a total of 26 GW of offshore wind projects, 10.4 GW of fixed offshore wind and 14.6 GW of floating offshore wind.

8. The UK and Scottish governments are currently encouraging the development of floating offshore wind as a method of reducing the greenhouse gas emissions generated from the operations of oil and gas (O&G) facilities. The North Sea Transition Deal, established by the UK Department for Business, Energy and Industrial Strategy (2021), sets out the UK government’s commitment to working with the O&G sector to deliver the skills, innovation and new infrastructure required to decarbonise North Sea O&G production as well as other carbon intensive industries. The Project resultingly falls firmly within the overarching aim of the North Sea Transition Deal. Crown Estate Scotland has established the Innovation and Targeted Oil & Gas (INTOG) leasing round to encourage developers to submit tenders to develop floating offshore wind projects which will specifically power renewable electricity for offshore O&G facilities (Crown Estate Scotland, 2021). These areas designated in the leasing round are situated next to O&G facilities which are actively seeking to diversify their operations with renewable electricity production to reduce greenhouse gas emissions. The creation of the INTOG leasing round alongside the development of floating offshore wind technology is expected to increase the number of floating offshore wind projects that power renewable electricity to O&G facilities. In addition, the Scottish government has begun the process of drafting an INTOG Sectoral Marine Plan, which aims to identify areas of seabed where opportunities exist for projects targeting O&G decarbonisation (Marine Scotland, 2022). For more details on INTOG, see **Chapter 2: Need for the Project**.
9. Offshore windfarm developments require significant economic investment during development and construction. Whether the demands created by this investment can be met by the supply chains in the local Study Area (e.g. local business winning contracts) depends on a range of factors, including the strength and capacity of the supply chain, the level of skilled workers available, and wider economic development factors in the area. Green Volt Offshore Windfarm Ltd (the Applicant) is committed to the development of a local supply chain and the importance of a just transition for the UK energy sector workforce. The Applicant is currently seeking ways to maximise UK participation in this project. A number of local and Scottish Contractors and Consultants are already working on the Project. The Project will help develop and secure long term investment and job growth in Scotland. This supply chain engagement in Scotland has already begun and will be built on substantially throughout 2023. If contracts are not won locally, then work and materials may be sourced from elsewhere in Scotland, or internationally. The Supply Chain Development Statement (SCDS) for Green Volt would be developed following the offer of an INTOG Exclusivity Agreement by Crown Estate Scotland. The SCDS would be provided to Crown Estate Scotland in advance of any Option Agreement being executed.
10. The GVA impact associated with the Project is estimated to be £3.76 billion over the lifetime of the Project. This is deemed to be of minor positive beneficial significance.
11. If the Project proceeds, it is estimated to generate 138 Full-time equivalent (FTE) jobs over the lifetime of the Project. This is deemed to be of moderate beneficial impact.

19.3 Legislation, Guidance and Policy

12. The following General Policies (GEN) of Scotland's National Marine Plan (Scottish Government, 2015) also have relevance to socioeconomic and tourism impacts of offshore renewable developments:

- *GEN 2 Economic benefits: Sustainable development and use which provides economic benefit to Scottish communities is encouraged when consistent with the objectives and policies of this Plan.*
- *GEN 3 Social benefits: Sustainable development and use which provides social benefits is encouraged when consistent with the objectives and policies of this Plan.*

13. Also of relevance is the following recreation and tourism policy of Scotland's National Marine Plan (Scottish Government, 2015):

The following key factors should be taken into account when deciding on uses of the marine environment and the potential impact on recreation and tourism:

- *The extent to which the proposal is likely to adversely affect the qualities important to recreational users, including the extent to which proposals may interfere with the physical infrastructure that underpins a recreational activity.*
- *The extent to which any proposal interferes with access to and along the shore, to the water, use of the resource for recreation or tourism purposes and existing navigational routes or navigational safety.*
- *Where significant impacts are likely, whether reasonable alternatives can be identified for the proposed activity or development.*
- *Where significant impacts are likely and there are no reasonable alternatives, whether mitigation, through recognised and effective measures, can be achieved at no significant cost to the marine recreation or tourism sector interests.*

14. The Aberdeen City and Shire Strategic Development Plan 2020 (Aberdeenshire Council, 2020), aims to:

- *Provide a strong framework for investment decisions which will help to grow and diversify the regional economy in a sustainable manner;*
- *Promote the need to use resources more efficiently and effectively whilst protecting and where appropriate enhancing our assets; and*
- *Take on the urgent challenges of climate change.*

15. A number of key strategic growth areas are identified for the Aberdeenshire region, including Aberdeen City and the coastal area following the trunk road between Aberdeen City and Peterhead.

16. The Aberdeenshire Regional Economic Strategy 2018-2023 is an investment action plan for the region and outlines the following action points:

- *Investment in Infrastructure action XIII): Identify regeneration opportunities for commercial and industrial areas across the region, ensuring land and infrastructure is available in strategic growth areas and corridors, and aligned to capitalise on development of new technologies and supply chain opportunities (eg: CCS, Decommissioning).*
- *Innovation action VII): Maximise supply chain development in alternative energies (including renewables and carbon capture & storage/hydrogen action plan, and support innovation in other fuel technologies.*

17. The Economic Impacts of Wind Farms on Scottish Tourism (Scottish Government, 2008) research project generates the following recommendations for impact assessing the impact of wind farms on Scottish tourism:

This research has found that the negative impact of wind farms on tourism at national level is small and any reduction in employment in tourism will be less than the numbers currently directly employed in the wind power industry. However planning authorities may wish to consider the following factors to ensure that any adverse local impacts on tourism are minimised:

- *The number of tourists travelling past enroute to 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 or VisitScotland.*
18. The assessment of socioeconomic, tourism or recreational impacts of the Project is guided by UK-wide policy and guidance, including the National Policy Statements (NPS), designated under the Planning Act 2008, and the Marine Policy Statement (MPS), published in March 2011. Whilst the NPS are a consideration for Scottish offshore energy installations; Scottish Ministers are ultimately responsible for planning decisions.
19. The Overarching NPS for Energy (NPS EN-1) (DECC, 2011a) has guidance for socioeconomic impacts that should be considered in the EIA process for energy infrastructure, which are as follows:
- *The creation of jobs and training opportunities;*
 - *The provision of additional local services and improvements to local infrastructure, including the provision of educational and visitor facilities;*
 - *Effects on tourism;*
 - *The impact of a changing influx of workers during the different construction, operation and decommissioning phases of the energy infrastructure. This could change the local population dynamics and could alter the demand for services and facilities in the settlements nearest to the construction work (including community facilities and physical infrastructure such as energy, water, transport and waste). There could also be effects on social cohesion depending on how populations and service provision change as a result of the development; and*
 - *Cumulative effects – if development consent were to be granted to a number of projects within a region and these were developed in a similar timeframe, there could be some short-term negative effects, for example a potential shortage of construction workers to meet the needs of other industries and major projects within the region.*

19.4 Consultation

20. The Applicant has framed its assessment of potential effects on socioeconomics and tourism through consultation with key stakeholders.
21. **Table 19.1** details the key issues raised in relation to socioeconomics and tourism in the **Scoping Opinion** (received April 2022) (MS-LOT, 2022) (**Appendix 1.1**) and summarises other issues / concerns that have been raised during additional consultation activities undertaken as part of the EIA process and how these have been addressed in the preparation of this **Offshore EIA Report**.

Table 19.1 Consultation Responses

Consultee	Date / Document	Comment	Response / where addressed in the EIA Report
Marine Scotland Licensing Operations Team (MS-LOT)	April 2022, Marine Scotland - Licensing Operations Team: Scoping Opinion for Green Volt Offshore Windfarm	[Ref: 5.18.1] Offshore Social-Economics and Tourism: With regards to the study area, the Scottish Ministers are broadly content with the baseline information outlined by the Developer in Table 7.13 of the Scoping Report to be used during the EIA process.	Noted.
MS-LOT	April 2022, Marine Scotland - Licensing Operations Team: Scoping Opinion for Green Volt Offshore Windfarm	[Ref: 5.18.2] Offshore Social-Economics and Tourism: The Scottish Ministers advise that a full Socioeconomic Impact Assessment ("SEIA") must be included in the EIA Report. It is recommended that the socioeconomic implications for all impacts described in the human environment are considered and assessed in the SEIA.	This chapter considers offshore socioeconomic, tourism and recreation impacts. For onshore impacts, please refer to the separate Onshore EIA Report , where they are appropriately addressed.
MS-LOT	April 2022, Marine Scotland - Licensing Operations Team: Scoping Opinion for Green Volt Offshore Windfarm	[Ref: 5.18.2] Offshore Social-Economics and Tourism: The Scottish Ministers advise that more information must be provided regarding opportunities listed in Section 7.5.4.1 of the Scoping Report in the EIA Report and that the resulting socioeconomic effects are addressed in the SEIA.	<p>The Applicant are seeking to engage with the floating offshore wind supply chain through industry-specific networks such as that offered by the Scottish Offshore Wind Energy Council (SOWEC). Flotation Energy attended the SOWEC Offshore Wind Supply Chain Summit held in Aberdeen on 22 August 2022.</p> <p>The Green Volt Offshore Windfarm website also enables those interested in supply chain opportunities to register their interest in the Project - https://greenvoltoffshorewind.com/#supply</p>
MS-LOT	April 2022, Marine Scotland - Licensing Operations Team: Scoping Opinion for Green Volt Offshore Windfarm	[Ref: 5.18.3] Offshore Social-Economics and Tourism: The Scottish Ministers broadly agree with the impacts scoped in and out of the EIA Report in Table 7.15 of the Scoping Report. However, in Section 7.5.1 of the Scoping Report the Developer states it will collect baseline data on the importance of the area for recreation and tourism, but the Developer has proposed to scope out increased tourism/business interest to Scotland and local area for assessment in the EIA Report. The Scottish Ministers do not agree with the Developer's proposal to scope out increased tourism/business interest to Scotland and local area, in line with the VisitScotland representation and MAU advice. The Scottish Ministers advise this impact must be scoped in to the EIA Report and also addressed and explored further within the SEIA.	<p>The socioeconomic and tourism impacts of offshore workers in transit to and from the offshore work areas are addressed in Sections 19.9.1.3; 19.9.2.3; and 19.9.3.4. The socioeconomic and tourism impacts of onshore elements of the Project e.g. increased onshore traffic and congestion are appropriately addressed in the Onshore EIA Report.</p> <p>Changes to tourism/business interest as a result of the offshore component of the Project are captured in the following assessed impacts: 'Increase in demand for local private services and goods' and 'Impact on marine tourism'</p>
MS-LOT	April 2022, Marine Scotland - Licensing Operations Team: Scoping Opinion for Green Volt Offshore Windfarm	[Ref: 5.18.4] Offshore Social-Economics and Tourism: The Scottish Ministers are content that an Independent Tourism Impact Assessment ("ITIA") is not required in contrary to the VisitScotland representation. The Scottish Ministers sought clarification from MAU on this point and based on the advice note provided MAU, concluded that an ITIA is not required for this project due to the distance from shore.	Noted.

Consultee	Date / Document	Comment	Response / where addressed in the EIA Report
MS-LOT	April 2022, Marine Scotland - Licensing Operations Team: Scoping Opinion for Green Volt Offshore Windfarm	[Ref: 5.18.5] Offshore Social-Economics and Tourism: The SFF notes that the commercial fishing industry would have presumed to regain access to the two former hydrocarbon fields post-oil production. It therefore states that the commercial fishing industry's reduction in access to the proposed location and the potential economic and socioeconomic impacts of this should be scoped in to the EIA Report. The Scottish Ministers agree and advise that this must be fully addressed by the Developer.	Noted. These impacts are addressed in Chapter 13: Commercial Fisheries
MS-LOT	April 2022, Marine Scotland - Licensing Operations Team: Scoping Opinion for Green Volt Offshore Windfarm	[Ref: 5.18.6] Offshore Social-Economics and Tourism: Additionally on potential socioeconomic impacts of the Proposed Development, the Scottish Ministers draw the Developer's attention to the MAU advice which recommends that these impacts should be assessed across the whole boundary of the Wind Farm Area, including the South-Eastern corner which currently remains within this area. Moreover, it states that there remains a significant number of active commercial fishers to consider even if this corner is removed from the Wind Farm Area. The Scottish Ministers agree and advise that this must be fully addressed by the Developer in the EIA Report.	The southeastern corner has been removed from the Windfarm Area. Impacts of the Project on commercial fishers are addressed in Chapter 13: Commercial Fisheries .
Marine Scotland Marine Analytical Unit (MS-MAU)	April 2022 Representation to MS-LOT during consultation on Offshore Scoping Opinion	In the Scoping Report potential impacts as a result of the construction, operation and maintenance, and decommissioning phases of the project are detailed for each activity in subsections. The scoping report does not detail how the knock-on effects that these impacts could have on socioeconomic factors will be assessed.	Noted. Impact assessment methods are described in Section 19.5 .
MS-MAU	April 2022 Representation to MS-LOT during consultation on Offshore Scoping Opinion	It is recommended that the potential socioeconomic implications for all impacts described in the Human Environment are considered and, where relevant, assessed in the SEIA. We would expect to see descriptions of methods, data collection, and the overall approach to assess these impacts. Annexes 1 and 2 and may offer some indication of what we would expect.	Noted.
MS-MAU	April 2022 Representation to MS-LOT during consultation on Offshore Scoping Opinion	However, this southeast corner remains in the current Project Area boundary and it is our recommendation that the socioeconomic impacts of the development be considered across the whole boundary. Furthermore, a 40% reduction in the number of vessels suggests that there is still a significant number of active fishers to consider across the rest of the boundary.	The southeast corner has been removed from the Windfarm Area. Impacts of the Project on commercial fishers are addressed in Chapter 13: Commercial Fisheries .
MS-MAU	April 2022 Representation to MS-LOT during consultation on Offshore Scoping Opinion	The possible socioeconomic impacts on commercial fishing may not be limited to fishing activity that takes place directly within the site, as the development may also impact vessels transiting through. For example, increased steaming times to alternative fishing grounds may have	Given that no significant impacts of the Project on fishing activity have been determined in Chapter 13: Commercial Fisheries , no significant impacts on socioeconomic aspects of fishing can occur.

Consultee	Date / Document	Comment	Response / where addressed in the EIA Report
		knock-on socioeconomic implications for commercial fishers, such as increased fuel costs or changes to working pattern, and these should be explored.	
MS-MAU	April 2022 Representation to MS-LOT during consultation on Offshore Scoping Opinion	It is therefore our recommendation that the socioeconomic impact of any reduction, displacement or disruption to commercial fisheries across the whole project area boundary is scoped into the SEIA.	Impacts of the Project on commercial fishers identified in that have relevant socioeconomic aspects are considered within Section 13.8 of Chapter 13: Commercial Fisheries . These impacts are further considered in this chapter in Sections 19.9.1.7; 19.9.2.7; and 19.9.3.7 .
MS-MAU	April 2022 Representation to MS-LOT during consultation on Offshore Scoping Opinion	On page 176, the report outlines 'several opportunities which could be considered to enhance the positive impacts' and goes on to list these specific opportunities. However, it is unclear from this text whether the development is going to take up these opportunities and to what extent. It would be helpful if the developer could provide more information about the extent to which these opportunities are going to be realised and the resulting socioeconomic impact of this in the SEIA. For example, this may include details of the percentage of locally manufactured content that is going to be used throughout each stage of the project, the number of staff likely to be cross-trained from sectors such as O&G and the number of local people expected to be employed and trained.	<p>The Applicant are seeking to engage with the floating offshore wind supply chain through industry-specific networks such as that offered by the Scottish Offshore Wind Energy Council (SOWEC). Flotation Energy attended the SOWEC Offshore Wind Supply Chain Summit held in Aberdeen on 22 August 2022.</p> <p>The Green Volt Offshore Windfarm website also enables those interested in supply chain opportunities to register their interest in the Project - https://greenvoltoffshorewind.com/#supply</p> <p>Expected spending at local, regional and national levels is outlined in Section 19.7.1.2.</p>
MS-MAU	April 2022 Representation to MS-LOT during consultation on Offshore Scoping Opinion	The report has scoped out 'increased tourism/business interest to Scotland and local area'. While it is appreciated that the development will not be visible from the Scottish coastline, it is possible that there could be both negative and positive impacts on tourism as a result of the development. For example, accommodation normally used by tourists maybe used by workers, thus depriving other tourism businesses of custom, and increased congestion due to the transport of goods and people to the site may alter the character of the area. It is therefore our recommendation that this is scoped into the SEIA and explored further.	<p>The socioeconomic and tourism impacts of offshore workers in transit to and from the offshore work areas are addressed in Sections 19.9.1.3; 19.9.2.3; and 19.9.3.4. The socioeconomic and tourism impacts of onshore elements of the Project e.g. increased onshore traffic and congestion are appropriately addressed in the Onshore EIA Report.</p> <p>Changes to tourism/business interest as a result of the offshore component of the Project are captured in the following assessed impacts: 'Increase in demand for local private services and goods' and 'Impact on marine tourism'</p>
MS-MAU	April 2022 Representation to MS-LOT during consultation on Offshore Scoping Opinion	Included table stating types of socioeconomics from Glasson J (2017a) "Socioeconomic impacts 2: Overview and economic impacts" in Therivel R and Wood G (eds.), Methods of Environmental and Social Impact Assessment, Abingdon: Routledge	The table of the types of potential socioeconomic impacts of projects provided by MS-MAU has been consulted. These impacts relate to infrastructure projects in general, and those relating to the offshore infrastructure of a floating offshore windfarm have been taken forward for further assessment. These are Direct employment; supply chain impacts; demand of local private services and goods; interference with planned infrastructure improvements; impacts on marine tourism; disturbance of recreational activities; and impacts on steaming times of fishing vessels to fishing grounds.

Consultee	Date / Document	Comment	Response / where addressed in the EIA Report
MS-MAU	April 2022 Representation to MS-LOT during consultation on Offshore Scoping Opinion	<p>"Key components of a socioeconomic impact assessment Participatory approach Creating participatory processes and a deliberative space to facilitate community discussions about desired futures, the acceptability of likely negative impacts and proposed benefits, and community input into the SEIA process.</p> <ul style="list-style-type: none"> Assess community capacity to engage – capacity building may be necessary Appoint Community Liaison Officer(s) for each affected community Set up governance structures so that communities feel they can voice opinions and be listened to Begin community engagement as soon as possible, brief communities on project with as much detail as possible so that they can prepare Ensure that community engagement is done with sensitivity to avoid causing stress or anxiety 	<p>Stakeholders have been engaged through the Scoping Process and the Pre-Application Consultation Event held on 20/09/2022. Where responses from stakeholders relevant to this socioeconomics, tourism and recreation chapter have been received, they are presented and addressed within this table.</p> <p>As the Project moves into the procurement phase it will seek to maximise local content, where possible. Supply chain events in Scotland will be held to enable local businesses to engage with the Project. These is a supply chain contact form available on the Green Volt website to enable local suppliers to contact the Project.</p> <p>As the Project evolves, the Applicant will ensure that up to date information is provided to local communities and other stakeholders on progress. The Applicant will endeavour to make the information accessible to those that may be affected. The Project website will be used to share information and alternatives for reaching the appropriate audiences will be considered, as necessary. The Project's website includes a contact form to enable feedback to be provided to the Project at any time or else emails can be sent to hello@greenvoltoffshorewind.com.</p> <p>the Applicant has undertaken some consultation activities prior to the submission of the Offshore EIA Report and equivalent events will be held prior to submitting the onshore planning application.</p>
MS-MAU	April 2022 Representation to MS-LOT during consultation on Offshore Scoping Opinion	<p>"Baseline 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.</p> <ul style="list-style-type: none"> Develop social and economic profile of the area including: <ul style="list-style-type: none"> history, culture and context Industrial structure i.e. existing businesses in the area Socioeconomic 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.: <ul style="list-style-type: none"> Employment and unemployment levels 	<p>Stakeholders have been engaged through the scoping process and the Pre-Application Consultation (PAC) Event held on 20/09/2022. Where responses from stakeholders relevant to the socioeconomics, tourism and recreation chapter have been received, they are presented and addressed within this table.</p> <p>A socioeconomics baseline has been characterised in terms of employment, tourism, industries present, local planning policies. Indicators such as structure of working age population, skills, qualifications and GVA are also considered. See Section 19.7.1.</p>

Consultee	Date / Document	Comment	Response / where addressed in the EIA Report
		<ul style="list-style-type: none"> ▪ Structure of working age population/skills/qualifications ▪ GVA ▪ Wellbeing ▪ Community cohesion • Engage with community 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-MAU	April 2022 Representation to MS-LOT during consultation on Offshore Scoping Opinion	<p>"Prediction or Appraisal 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.</p> <ul style="list-style-type: none"> • Identify potential/anticipated socioeconomic impacts including: <ul style="list-style-type: none"> ▪ Impacts related to GVA <ul style="list-style-type: none"> ▪ 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 community to check predictions and assign significance to predicted impacts • Impact prediction should include <ul style="list-style-type: none"> ▪ Assessment of different phases of the project (development, construction, operation & maintenance, decommissioning) and phases within phases (early construction, peak construction) ▪ 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. • Other economic considerations may include: <ul style="list-style-type: none"> • 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 	The magnitude of changes according to economics factors such as employment and expenditure have been estimated for different phases of the Project and considered at local, regional and national levels. Impacts relating to social factors have also been considered, such as disruption, or perceived disruption to tourism and recreation activities (See Section 19.9).

Consultee	Date / Document	Comment	Response / where addressed in the EIA Report
		<ul style="list-style-type: none"> 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 " 	
MS-MAU	April 2022 Representation to MS-LOT during consultation on Offshore Scoping Opinion	<ul style="list-style-type: none"> "Mitigation and enhancement Identifying ways of mitigating potential negative impacts and maximising positive opportunities. Engage with community to develop strategy for enhancing benefits and mitigating against impacts This may involve Community Benefit Agreement (CBA) <input type="checkbox"/> Care should be taken to ensure that CBA and any associated funds should have accessible application procedures so that allocated funds can be used" 	<p>Stakeholders have been engaged through the Scoping Process and the PAC Event held on 20/09/2022. Where responses from stakeholders relevant to this socioeconomic, tourism and recreation chapter have been received, they are presented and addressed within this table.</p> <p>As the Project moves into the procurement phase it will seek to maximise local content, where possible. Supply chain events in Scotland will be held to enable local businesses to engage with the Project. These is a supply chain contact form available on the Green Volt website to enable local suppliers to contact the Project.</p>
MS-MAU	April 2022 Representation to MS-LOT during consultation on Offshore Scoping Opinion	<p>"Monitoring and management Developing a monitoring and management plan to track and manage implementation, success of mitigation actions, and any unanticipated social changes, especially negative impacts.</p> <ul style="list-style-type: none"> Develop management plan and monitoring strategy Engage with community – especially with regard to both <ul style="list-style-type: none"> Community 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 community can continue to engage with the project" 	<p>Given the distance from shore of the Windfarm Site and the outcomes of the impact assessment (Sections 19.9.1; 126; and 19.9.3), with no significant adverse effects found, a monitoring plan specific to offshore-related socioeconomic, tourism or recreation receptors is deemed unnecessary. If a monitoring plan is deemed necessary for onshore elements of the Project, this will be detailed in the Onshore EIA Report.</p> <p>Community consultation will continue as appropriate.</p>
MS-MAU	April 2022 Representation to MS-LOT during consultation on Offshore Scoping Opinion	We recommend that a full Socioeconomic Impact Assessment be scoped into the Environmental Impact Assessment.	This chapter considers offshore socioeconomic, tourism and recreation impacts. For onshore impacts, please refer to the separate Onshore EIA Report , where they are appropriately addressed.

Consultee	Date / Document	Comment	Response / where addressed in the EIA Report
MS-MAU	April 2022 Representation to MS-LOT during consultation on Offshore Scoping Opinion	Other economic considerations may include: <ul style="list-style-type: none"> 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 	Of these additional considerations that may be included, cumulative impacts have been taken forward for further consideration as relevant to this Project, see Section 19.10 .
MS-MAU	April 2022 Representation to MS-LOT during consultation on Offshore Scoping Opinion	Mitigation and enhancement Identifying ways of mitigating potential negative impacts and maximising positive opportunities. <ul style="list-style-type: none"> Engage with community 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 	Stakeholders have been engaged through the Scoping Process and PAC Event held on 20/09/2022. Where responses from stakeholders relevant to this socioeconomics, tourism and recreation chapter have been received, they are presented and addressed within this table. As the Project moves into the procurement phase it will seek to maximise local content, where possible. Supply chain events in Scotland will be held to enable local businesses to engage with the Project. There is a supply chain contact form available on the Green Volt website to enable local suppliers to contact the Project.
Visit Scotland	13 th December 2021 Representation to MS-LOT during consultation on Offshore Scoping Opinion	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 document suggested by Visit Scotland has been reviewed, the key points are outlined in Section 19.3 , and the guidance has been used to inform the impact assessing of the Project on tourism throughout this chapter.
Visit Scotland	13 th December 2021 Representation to MS-LOT during consultation on Offshore Scoping Opinion	Planning authorities should also consider the following factors to ensure that any adverse local impacts on tourism are minimised: <ul style="list-style-type: none"> 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 The views of tourist organisations, i.e. local tourist businesses 	The factors highlighted are given due consideration. The socioeconomic and tourism impacts of offshore workers in transit to and from the offshore work areas are addressed in Section 19.9.1.3; 19.9.2.3; and 19.9.3.3 . The socioeconomic and tourism impacts of onshore elements of the Project e.g. increased onshore traffic and congestion will be appropriately addressed in the Onshore EIA Report .

Consultee	Date / Document	Comment	Response / where addressed in the EIA Report
Visit Scotland	13 th December 2021 Representation to MS-LOT during consultation on Offshore Scoping Opinion	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.	<p>The turbines will be sited 80 km from shore and will not be visible from land.</p> <p>The socioeconomic and tourism impacts of offshore workers in transit to and from the offshore work areas are addressed in Sections 19.9.1.3; 19.9.2.3; and 19.9.3.3. The socioeconomic and tourism impacts of onshore elements of the Project e.g. increased onshore traffic and congestion are appropriately addressed in the Onshore EIA Report.</p> <p>In line with the MS-LOT Scoping Opinion (Appendix 1.1), an Independent Tourism Impact Assessment (ITIA) is not required due to the distance of the Project from shore.</p>
Visit Scotland	13 th December 2021 Representation to MS-LOT during consultation on Offshore Scoping Opinion	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 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.	In line with the MS-LOT Scoping Opinion (Appendix 1.1) , an ITIA is not required due to the distance of the Project from shore.
Visit Scotland	13 th December 2021 Representation to MS-LOT during consultation on Offshore Scoping Opinion	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	<p>Noted. The impacts of the Project on coastal and marine tourism are assessed in Sections 19.9.1.5; 19.9.2.5; and 19.9.3.5.</p> <p>In line with the MS-LOT Scoping Opinion (Appendix 1.1), an ITIA is not required due to the distance of the Project from shore.</p> <p>The socioeconomic and tourism impacts of onshore elements of the Project e.g. increased onshore traffic and congestion will be appropriately addressed in the Onshore EIA Report.</p>
Sport Scotland	9 th December 2021 Representation to MS-LOT during consultation on Offshore Scoping Opinion	Having consulted RYAS, I understand they will be providing comments on the offshore infrastructure scoping report on likely impact on recreational craft. I have also reviewed the offshore infrastructure documents and confirm that Sport Scotland has no comments to make.	Recreational craft are considered within Appendix 14.1: Navigational Risk Assessment and in Chapter: 14 Shipping and Navigation . Also refer to Section 19.7.3 of this technical chapter.
Royal Yachting Association Scotland	21 st December 2021 Representation to MS-LOT during consultation on Offshore Scoping Opinion	Although the current version of the UK Coastal Atlas of Recreational Boating published by the RYA has poor coverage of the sea at the proposed site, tracks can be seen heading towards the site. We estimate that a quarter of recreational vessels crossing the northern North Sea transmit an AIS signal and consider that their routes are typical of those of the other vessels.	Recreational craft are considered within Appendix 14.1: Navigational Risk Assessment and in Chapter: 14 Shipping and Navigation . Also refer to Sections 19.7.3, 19.9.1.6, 19.9.2.6 and 19.9.3.6 of this technical chapter.

Consultee	Date / Document	Comment	Response / where addressed in the EIA Report
Royal Yachting Association Scotland	21 st December 2021 Representation to MS-LOT during consultation on Offshore Scoping Opinion	In terms of the proposed landfall sites, Peterhead is one of the termini of the planned SEGL 2 HVDC link from Peterhead to Drax in Yorkshire which may lead to a cumulative impact.	Eastern Green Link 2 (SEGL-2) is included in the Cumulative Impact Assessment. Recreational craft are considered within the Appendix 14.1 Navigational Risk Assessment and in Chapter 14: Shipping and Navigation . Also refer to Sections 19.7.3, 19.9.1.6, 19.9.2.6 and 19.9.3.6 of this technical chapter.
Scottish Surfing Federation	Pre Application Consultation 2 nd August 2022	<p>The impact of the wind farm on North Sea swell as it passes from low pressure areas many miles away through the wind farm complex and on to the surfable coastline.</p> <p>What studies have been done on the effect of the wind farm on passing swells? I realise the project is 80km offshore but none the less there may, in association with the other proposed wind farms in the area, be an effect on the swell and we at the SSF would like to know what that is likely to be and what your predictive models show.</p>	The Applicant has considered the potential effect of the Project on the baseline wave climate in Chapter 5 (The Physical Environment) of the Offshore Scoping Report and scoped out from further assessment. Wave data was collated and reviewed from available sources, including undertaking an 'extremes analysis' and it was concluded that the limited number of floating wind turbines (up to 35) is likely to have, at worst, only a very small impact on the wave climate and only limited to a localised area (<1 km), and was therefore scoped out of further assessment. The floating wind turbines will be anchored in position so there will only be very small and very localised direct impact on the incoming wave climate from the installed infrastructure. Long-period swell waves will not be affected by such local interruptions. Due to the long-period nature of swell waves, we do not envisage that these will be affected adversely by the wind farm which is situated some 80 km from shore. Given the <1 km impact range around turbines located 80 km offshore, there is no pathway for effects on surfers near-shore and this impact is not assessed further here.
Scottish Surfing Federation	Pre Application Consultation 2 nd August 2022	<p>The impact of the cable landfall on surfing beaches in and around Peterhead. The proposal shows the landfall of the cables will involve horizontal direct drilling and this should minimise the impact on the coast, both visually and from a surfing point of view. We have seen this undertaken when the cables were brought ashore from Neart na Gaoithe in East Lothian. In practice there was no disruption to the surf as the drilling started inland and surfaced roughly 1km offshore well away from any waves. Can you confirm that the construction of the landfall at Peterhead will follow a similar pattern? What are your proposals regarding on shore construction work and will this cause restrictions in accessing the coastline?</p>	<p>The landfall of the cables will involve horizontal directional drilling (HDD). This installation method is intended to minimise the impact on the coast, both visually, ecologically and in terms of coastal processes (waves, tides, sediment transport) (Chapter 7: Marine Geology, Oceanography and Physical Processes). Drilling at the 'entry point' is planned to start inland of the coast and the 'exit point' will surface between 1 km and 1.3km offshore. This is well away from any surf waves and so it will not cause disruption to the surfing beaches in the vicinity.</p> <p>Potential impacts associated with onshore construction works will be fully considered within the Onshore EIA Report. Consultation with stakeholders will continue during the development of the onshore EIA to ensure any potential impacts are understood, assessed and minimised to within acceptable levels.</p>

Consultee	Date / Document	Comment	Response / where addressed in the EIA Report
			A draft Construction Environmental Management Plan (CEMP) will accompany the planning application. The CEMP sets out the general approach of environmental management and mitigation of impacts associated with the construction works. The appointed Construction Contractor will update and finalise the CEMP and will be responsible for ensuring that any adverse effects from the construction phase are minimised.
Aberdeenshire Council	Stakeholder engagement meeting 1 st June 2021	What about the supply chain process for the project, what thoughts have gone into this so far? How can supply chain development be supported?	<p>The Applicant is seeking to engage with the floating offshore wind supply chain through industry-specific networks such as that offered by the Scottish Offshore Wind Energy Council (SOWEC). Flotation Energy attended the SOWEC Offshore Wind Supply Chain Summit held in Aberdeen on 22 August 2022.</p> <p>The Project website also enables those interested in supply chain opportunities to register their interest - https://greenvoltoffshorewind.com/#supply</p> <p>Expected spending at local, regional and national levels is outlined in Section 19.7.1.2.</p>
Aberdeenshire Council	Pre Application Consultation 15 th August 2022	<p>Our Environment Planner welcomes the proposal to bring cables ashore using the HDD method, avoiding trenching, which would minimise/remove adverse impacts upon public access.</p> <p>We appreciate being involved with the pre-application stage of the development and would welcome further contact should you have additional queries or updates.</p>	Noted. The Applicant will continue to engage with Aberdeenshire Council throughout the life of the Project.
Scottish Government	Stakeholder engagement 27 th May 2022	<p>Floating is a big opportunity for Scotland and therefore a stepping stone project is very much of interest. Ministers are keen to ensure that local opportunities for production of the floating wind systems are maximised.</p> <p>It would be very good to summarise how the project will support economic benefits for Scotland.</p>	A Supply Chain Development Statement will be developed post-consent outlining the approach to sustainable offshore wind development in Scotland. Chapter 19: Socioeconomics, Tourism and Recreation provides further details on socioeconomic benefits anticipated, as well as Chapter 2: Need for the Project which outlines economics benefits.
NatureScot	Stakeholder engagement 14 th February 2022	Marine Scotland are currently developing tool kits to enable developers to undertake socio economic assessments which will be available in the near future. Key contact is Kay Barkley.	Noted. Tool not available at time of EIA submission.

19.5 Assessment Methodology

19.5.1 Impact Assessment Methodology

22. The methodology for the evaluation of the socioeconomic impacts of the Project is based on previous experience of similar developments, professional judgement, statutory requirements and Government advice. The assessment considers how the Project will affect the socioeconomic and tourism baseline conditions, during construction, operational and decommissioning phases. Given the nature of the development, quantitative and qualitative impacts have been considered where appropriate, including employment and tourism disruption during the construction phase.
23. This impact assessment has been conducted in the line with the high-level guidance provided by MS-LOT and VisitScotland in the **Scoping Opinion (Appendix 1.1)**. The significance of the socioeconomic and tourism effects of the Project is based on defined assessment criteria, in line with standard EIA methodology, as set out below. The methodology in this chapter differs slightly to that outlined in **Chapter 6: EIA Methodology**, as the methods described below are more suitable for assessing socioeconomic and tourism impacts.

19.5.1.1 Value

24. Standard EIA methodology has been applied in terms of assessing the value of receptors, the magnitude of any potential effect and the resulting significance of effect. Terminology and approach has broadly followed the process as set out within **Chapter 6: EIA Methodology**. **Table 19.2** displays the criteria used to define value for socioeconomic and tourism receptors.

Table 19.2 Definitions of receptor value used in the socioeconomics and tourism impact assessment

Value	Definition
International	International effects
National	Effects on Scotland or the United Kingdom
Regional	Effects on the Aberdeenshire region
High local	Effects on the Buchan area
Moderate local	Effects on neighbouring villages or towns e.g. Boddam, Buchanhaven or Peterhead
Low local	Effects on the immediate vicinity and on rural residences

19.5.1.2 Magnitude of Impact

25. The definitions of magnitude of impact for socioeconomic and tourism receptors are provided in **Table 19.3**. Note that employment impacts (marked with a *) are taken immediately to the effects level, as they act at local, regional and national levels simultaneously. This means that **Table 19.2** and **Table 19.4** are not applied to employment impacts.
26. The analysis of employment and GVA effects focuses on direct and indirect economic effects during construction, and operation and maintenance (O&M) phases:
- Direct economic impact:
 - During construction, effects occur wholly, and directly, as a result of the construction of the Project. Direct effects include the jobs and GVA resulting from the capital expenditure which the Applicant will spend directly with its suppliers.
 - For operation and maintenance, the direct effects result from the employment and GVA that is directly associated with operation and maintenance activities. For example, employees engaged in monitoring or maintenance activities.

- Indirect economic impact, capturing the employment and GVA effects of the Project in the supply chain:
 - For construction, the indirect effects are derived from the expenditure on goods and services that companies directly supplying the Project would spend on their own supply chains.
 - For operation and maintenance, the indirect effects capture the jobs and GVA associated with all supply chain spend required during the operation and maintenance phase.

Table 19.3 Definitions for magnitude levels used in the socioeconomics and tourism impact assessment

Magnitude	Definition
High	A permanent or long-term measurable effect on the economy A short-term large effect on the economy A permanent substantial increase/decrease in recreational activities/facilities *A permanent increase/decrease in employment by ≥ 20 Full Time (FTE). *A short term increase/decrease in employment by ≥ 150 FTE.
Medium	A permanent or long-term effect on the economy. A short-term moderate effect on the economy. Permanent increase/decrease in recreational facilities. *A permanent increase/decrease in employment by > 5 FTE. *A short-term increase/decrease in employment by ≥ 50 FTE.
Low	A short term effect on the economy. Short-term increase/decrease in recreational facilities. *A permanent increase/decrease in employment by 1-5 FTE. *A short-term increase/decrease in employment by ≥ 5 FTE.
Negligible	No discernible change

19.5.1.3 Impact Significance

27. The value and magnitude of each impact are combined for each receptor to determine the significance of the effect using an effect significance matrix, as shown in **Table 19.4**.
28. In order to assess the significance of the potential effects of the Project on socioeconomic and tourism receptors, professional judgement and interpretation has been applied.
29. For the purposes of this EIA, major and moderate adverse effects are deemed to be significant. These must therefore be given further attention and specific mitigation measures are to be applied to ensure appropriate minimisation of the significance.
30. In addition, whilst minor effects are not significant in their own right, it is important to distinguish these from other non-significant effects as they may contribute to significant effects cumulatively or through interactions.

Table 19.4 Effect Significance Matrix for Socioeconomics, tourism and recreation receptors

		Negative Magnitude				Beneficial Magnitude			
		High	Medium	Low	Negligible	Negligible	Low	Medium	High
Value	International	Major	Major	Moderate	Minor	Minor	Moderate	Major	Major
	National	Major	Moderate	Minor	Negligible	Negligible	Minor	Moderate	Major
	Regional	Moderate	Moderate	Minor	Negligible	Negligible	Minor	Moderate	Moderate
	Moderate Local/ High Local	Moderate	Minor	Minor	Negligible	Negligible	Minor	Minor	Moderate
	Low local	Minor/ Negligible	Minor/ Negligible	Minor/ Negligible	Negligible	Negligible	Minor/ Negligible	Minor/ Negligible	Minor/ Negligible

31. The definitions for each effect significance category used in **Table 19.4** are shown in **Table 19.5**.

Table 19.5 Effect significance definitions

Effect Significance	Definition
Major	Very large or large change in receptor condition, either adverse or beneficial, which are likely to be important considerations at a regional or national level because they contribute to achieving national, regional, or local objectives, or could result in exceedance of statutory objectives and / or breaches of legislation.
Moderate	Intermediate change in receptor condition, either adverse or beneficial. Impacts are more likely to be important considerations at a local level
Minor	Small change in receptor condition, either adverse or beneficial, which may be raised as local issues but are unlikely to be important in the decision making process.
Negligible	No discernible change, either adverse or beneficial, in receptor condition.
No Impact	No impact, either adverse or beneficial, therefore no change in receptor condition.

19.5.2 Cumulative Impact Assessment

32. The assessment of cumulative impacts for socioeconomics and tourism draws on the methodology and the list of relevant projects outlined in **Chapter 6: EIA Methodology**.
33. Both in-combination effects and additive effects of other relevant projects are considered.
34. Value, magnitude and significance are defined in the same way for cumulative impacts as described above in **Sections 19.5.1.1, 19.5.1.2 and 19.5.1.3**.

19.5.3 Transboundary Impact Assessment

35. The distance of the Project from other countries is such that offshore tourism receptors in other countries will be unaffected by activities associated with the Project.
36. Some infrastructure and labour is likely to be procured from other European Economic Area (EEA) states, especially with regards to elements of the offshore supply chain. Although this is known, until the procurement process is undertaken it is not possible to estimate what the specific non-UK input would be. Therefore, it is not possible to assess the extent of the Project's effect on downstream

supply chains at an international scale. It is unlikely that employment as a result of international procurement would lead to indirect adverse socioeconomic transboundary effects. Furthermore, the offshore supply chain is likely to originate in European Union (EU) countries such as Germany, the Netherlands, or Spain. As such environmental impacts as a result of manufacturing and employment are unlikely to be significant because they would be subject to relevant national regulations derived from EU Directives. The onshore construction elements of the Project are entirely present within the UK so it is not anticipated that significant direct adverse socioeconomic effects on neighbouring countries will arise. Given the above, transboundary impacts are therefore not considered further within this assessment.

19.6 Scope

19.6.1 Study Area

37. The local socioeconomic Study Area covers the Offshore Development Area and coastline authorities (Aberdeen and Aberdeenshire Councils). It is linked to the selection of construction, and operation and maintenance ports and the supply of a range of inputs and services for the Project.
38. A larger regional socioeconomic Study Area has also been defined to reflect the wider reach of Scottish GVA, supply chain implications, impacts on the connected oil platforms and employment impacts that are likely to materialise through the development of the Project. This regional Study Area is defined following review of the results of the socioeconomic assessment being undertaken.

19.6.2 Data Sources

39. The data sources used to inform the impact assessment on socioeconomic and tourism impact receptors are listed in **Table 19.6**.

Table 19.6 Offshore socioeconomic and tourism data sources

Data	Year	Coverage	Confidence
National Statistics Mid-2020 Population estimates	2020	This statistical report provides population estimates for Scotland, its council areas and NHS boards, by sex and age.	High
National Statistics Population Projections for Scottish Areas 2018-based	Projections from 2018 onwards	This statistical report includes the 2018-based Population Projections for Scottish Areas, including council areas, NHS boards, national parks and strategic development plan areas.	Medium
Office for National Statistics Labour Market Profile - Aberdeenshire	Oct 2020- Sep 2021	These data give employment in terms of absolute numbers and percentage contribution by sex, age and sector	High
Office for National Statistics - Annual Population Survey	Oct 2020-Sep 2021	The Annual Population Survey (APS) is a continuous household survey, covering the UK. The topics covered include employment and unemployment, as well as housing, ethnicity, religion, health and education.	High
Aberdeenshire Council Aberdeenshire Profile 2021	2021	This report collates and summarises population, economy and housing data and trends for Aberdeenshire and Scotland	High
Aberdeenshire Council Buchan Profile 2021	2021	This report collates and summarises population, economy and housing data and trends for Buchan and Aberdeenshire	High
Visit Scotland Grampian tourism data	2019	This report provides a summary of data on tourism in Scotland's Grampian region including Aberdeen City, Aberdeenshire and Moray. It gathers information from a suite of tourism monitors managed by VisitScotland's	High

Data	Year	Coverage	Confidence
		Insight Department, and other national statistics and commissioned research.	
The Royal Yachting Association (RYA) Coastal Atlas of Recreational Boating	2004 - 2019	GIS dataset of recreational boating activity around the UK, comprising spatial data including indicators of intensity of use, general boating areas, as well as the locations of clubs, training centres, and marinas.	High
Keep Scotland Beautiful (KSB) Beach Awards and previous Blue Flag and Seaside Awards	Blue Flag and Seaside Awards: 2012-2015 Beach awards: 2016 - present	GIS dataset covering all beaches in Scotland that have received either KSB Beach awards or the historical Blue Flag/Seaside Awards	High
Economic impacts of wind farms on Scottish tourism: research findings	2008	<p>Glasgow Caledonian University was commissioned in June 2007 to assess whether Government priorities for wind farms in Scotland are likely to have an economic impact - either positive or negative - on Scottish tourism. The objectives of the study were to:</p> <ul style="list-style-type: none"> • Discuss the experiences of other countries with similar characteristics. • Quantify the size of any local or national impacts in terms of jobs and income. • Inform tourism, renewables and planning policy. 	High
Recreational Vessels	2017	Throughout coastal waters of UK and North Sea	High

19.6.3 Assumptions and Limitations

40. The assessment of impacts and the significance of effects has been carried out against a benchmark of the current community and socioeconomic baseline conditions prevailing around the Project. As with any dataset, these may be subject to change over time, which may influence the findings of the assessment. However, there is enough information available to make a sufficiently robust assessment of significance.
41. From a socioeconomic impact perspective, there are limitations associated with the assessment. The lowest level of baseline data available is at the level of Buchan (a 547 km² administrative area of the Aberdeenshire Council area), however most socioeconomic datasets can only be broken down to the level of Aberdeenshire Council area or Aberdeen City. Despite this, the datasets used have provided comprehensive metrics covering current demographics and labour market characteristics in the Council area. This is covered in **Section 19.7**.
42. Some input data used in the socioeconomic assessment, in particular the estimates for employment numbers resulting from the Project have been provided by the Applicant.
43. The assessment is based on project design information presented in **Chapter 5: Project Description**.

19.7 Existing Environment

44. This section presents an overview of the key socioeconomic and tourism indicators within the local and Scotland Study Areas. The key sources of data used to assess the baseline environment in the local, and Scotland Study Areas include relevant national datasets from the Office for National Statistics (ONS), which provide intelligence on population, labour market and employment base conditions at both national and local level. Additional local data has been sourced from Aberdeenshire Council. The characterisation of the existing environment is undertaken using data sources listed in **Table 19.6**, plus other relevant literature. These are the most up-to-date sources of data available in 2022, although the year that the data relates to varies according to the release calendar for each dataset.

19.7.1 Socioeconomics

19.7.1.1 Population Structure

Demographics

45. The population of Aberdeenshire in 2020 was 260,780, representing a decrease of 0.5% from 2015, which represents 4.8% of the Scottish population when compared to the 2020 Mid-Year Population Estimates for Scotland (National Statistics, 2020a). Between 2018 and 2040 the population of Aberdeenshire is projected to increase from 261,470 to 267,912, an increase of 2.5% from 2018 (Figure 19.1) (National Statistics, 2020b).

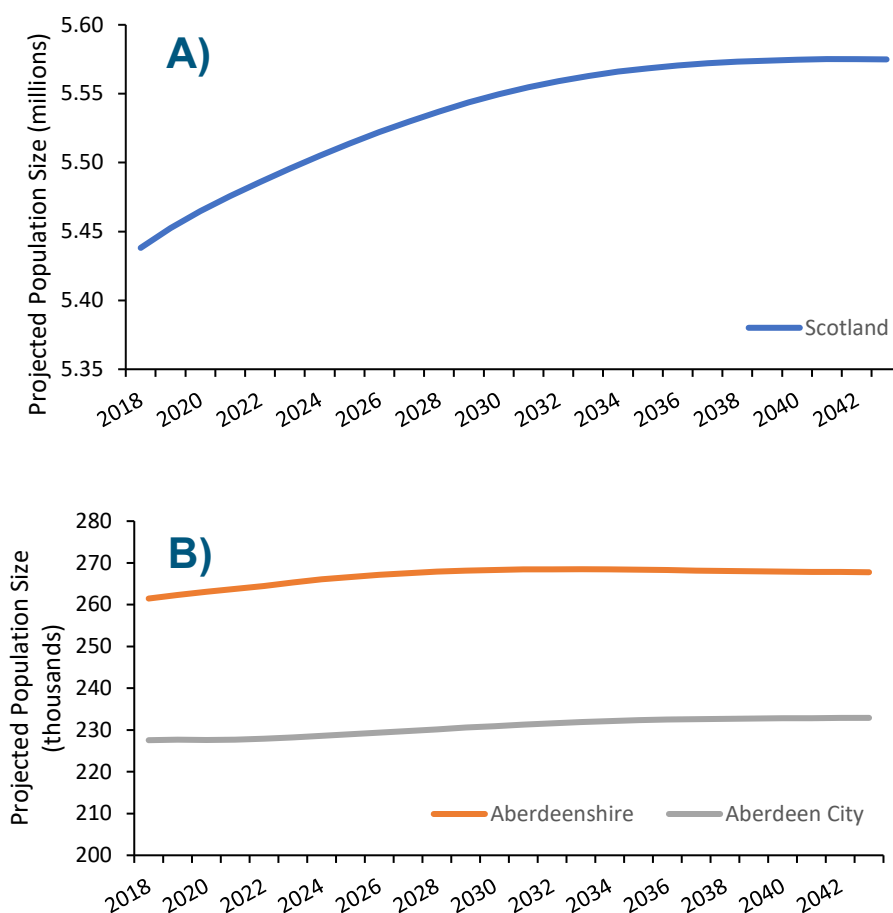


Figure 19.1 Population projections for A) Scotland and B) Aberdeenshire and Aberdeen City Council areas, based on 2018 data. Data sourced from National Statistics, 2020b.

46. The median age for Aberdeenshire is 36. When split into age group, the highest percentage of people in Aberdeenshire are of the age 45-64 (29%), higher than the 27% national average. Aberdeenshire holds a significantly lower population aged 16-24 and 25-44 compared to the Scottish average (8.6% and 23.6% compared to 10.4% and 26.2% respectively) (**Figure 19.2**) (National Statistics, 2020a). Aberdeen City and Aberdeenshire's working age populations (WAP) are similar in terms of absolute numbers, but Aberdeen City has a higher WAP as a percentage of total population in comparison to both Aberdeenshire and Scotland as a whole (**Table 19.7**).

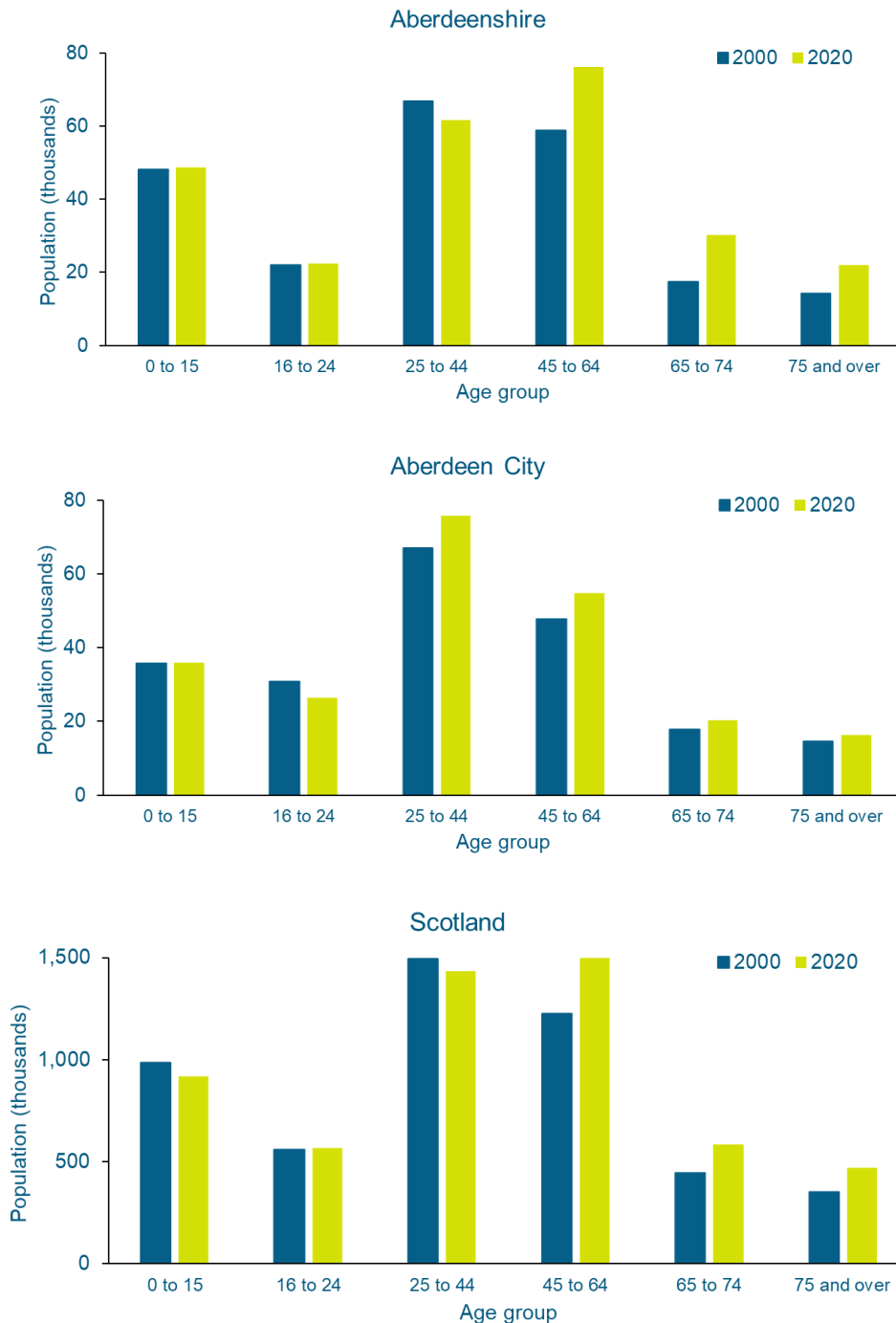


Figure 19.2 Mid-year estimates for population by age group for Aberdeenshire and Aberdeen City Council areas and Scotland in 2000 and 2020. Data sourced from National Statistics, 2020a.

Table 19.7 Total and working age population (WAP) for relevant council regions and nationally, 2020. Source: ONS, 2020, 'Mid-year Population Estimates'

Geographical Region	Total Population (000s)	WAP Population (000s)	%WAP
Aberdeen City	229	157	68.6
Aberdeenshire	261	160	61.3
Scotland	5,466	3,493	63.9

Employment

47. The employment levels in Scotland in 2020-2021 were 74.1%, whilst Aberdeenshire and Aberdeen City had higher employment levels of 76%. When analysed by gender, Aberdeenshire has the one of the highest regional male employment rates of 80.9% (compared to the 75.3% national average), whereas female employment rates are 71.2%, which is more in line with the 70.6% national average (ONS, 2021) (**Table 19.8**).

Table 19.8 Headline performance on key labour market indicators for relevant council regions and nationally, 2021. Source: ONS (Oct 2020-Sep 2021) 'Annual Population Survey'

Geographical Region	Economically active		In employment		Economically inactive	
	No. (000s)	% WAP	No. (000s)	% WAP	No. (000s)	% WAP
Aberdeen City	129	80.6	121	76.0	30	19.4
Aberdeenshire	137	79.2	131	76.0	34	20.8
Scotland	2,758	77.4	2,646	74.1	773	22.6

48. Aberdeen City has a higher unemployment rate than the wider Aberdeenshire region and the national average (4.4% compared to 3.2% and 4.1% respectively). In terms of unemployed residents, there are a total of 10,000 across the council regions adjacent to the Project (**Table 19.9**).

Table 19.9 Unemployment rates for relevant council regions and nationally, 2021. Source: ONS (Oct 2020-Sep 2021) 'Annual Population Survey'

Geographical Region	Number unemployed (000s)	Unemployment rate
Aberdeen City	6	4.4
Aberdeenshire	4	3.2
Scotland	112	4.1

49. Aberdeen City and Aberdeenshire's level of education performs strongly against the national average, with more than half of all residents in these regions having attained Scottish Vocational Qualifications (SVQ) level four or above, compared to the national average of 49% (**Table 19.10**).

Table 19.10 Education levels of working age adults by SVQ level, other and no qualifications for relevant council regions and nationally, 2021. Source: ONS (Oct 2020-Sep 2021) 'Annual Population Survey'

Geographical Region	SQV 4 and above		Other qualifications		No qualifications	
	No. (000s)	% WAP	No. (000s)	% WAP	No. (000s)	% WAP
Aberdeen City	81	52	9	5.9	10	6.5
Aberdeenshire	90	54.5	10	6.0	8	4.9
Scotland	1,678	49.0	197	5.7	277	8.1

50. The higher level of educational training in Aberdeenshire, compared to the national average, is not reflected in the type of occupations that residents are engaged in, with relatively lower representation of employment in higher managerial and professional occupations (Group 1-3) compared to levels observed nationally. Conversely, Aberdeen City has higher levels of the WAP employed in Group 1-3 sectors compared to national levels (**Figure 19.3** and **Table 19.11**).



Figure 19.3 The percentage of the total working age population employed in different standard occupation classifications in Oct 2020-Sep 2021 in the local Council areas and in Scotland. Source: ONS (Oct 2020-Sep 2021) 'Annual Population Survey'

Table 19.11 Employment by standard occupation classification for relevant council regions and nationally, 2021. Source: ONS (Oct 2020-Sep 2021) 'Annual Population Survey'

Geographical Region	Group 1 - 3 (Management)		Group 4 - 5 (Administration)		Group 6 - 7 (Support workers)		Group 8 - 9 (Elementary occupations)	
Aberdeen City	62	51.4	16	13.1	19	15.6	24	20.0
Aberdeenshire	56	43.2	35	26.4	19	14.2	21	16.1
Scotland	1,238	48.0	483	18.7	462	17.9	399	15.5

51. **Table 19.12** demonstrates the gap in earnings between the council regions closest to the Project and Scotland as a whole.

Table 19.12 Median weekly gross pay for full-time employees and residents of relevant council regions and nationally, 2021. Source, ONS (2021) 'ONS annual survey of hours and earnings - resident analysis'

Geographical Region	Working resident's gross weekly pay (£GBP)
Aberdeen City	587.4
Aberdeenshire	584.6
Scotland	622.0

Supply Chain Capacity and Capability

52. An overview of the offshore wind supply chain by Renewable UK (2016) in the local Study Area has highlighted several businesses which provide key services across the different phases of the offshore wind farm life cycle from initial site surveys and investigations, through environmental and engineering consultancy and wind farm design, project management and procurement, construction and installation, through to operations and maintenance services.
53. Scotland, and in particular the local Study Area, has a rich heritage in the O&G industry. Significant opportunities for the diversification of the industry into offshore wind energy have been identified. A report by the Scottish Enterprise has identified nine areas of high potential for O&G industry businesses to diversify into offshore wind energy (Scottish Enterprise, 2016):
 1. Project management;
 2. Array cables;
 3. Substation structures;
 4. Turbine foundations;
 5. Secondary steelwork;
 6. Cable installation;
 7. Installation equipment;
 8. Installation support services; and
 9. Maintenance and inspection services.
54. Each of these nine areas exhibit a high level of synergy between the offshore wind and O&G sectors, with the offshore wind sector in a good position to benefit from the expertise and capabilities of the O&G supply chain.
55. The Scottish Energy Ports Capability Directory (BPA, 2022) has identified several ports in the local area which have the potential to contribute to the offshore wind construction and operation and maintenance supply chain. These include:
 - Fraserburgh Harbour. As Fraserburgh Harbour has the ready-made provision of deep water berthing and adjacent industrial ground for onshore development within the port as well as ship repair facilities and associated local support service expertise, this port offers a suitable location for a maintenance and repair hub for offshore wind operation and maintenance vessels and also as a potential base for smaller vessels during the construction phase of windfarms.
 - Port of Peterhead. Peterhead is a key O&G supply base, second only in Scotland to Aberdeen. Oil and gas related traffic represents 90% of overall commercial traffic (i.e. 45% of total traffic with the balance being fishing related activity). Activity is split between logistics operations and subsea, with a growing business associated with handling decommissioning of subsea infrastructure.
 - Aberdeen Harbour. Aberdeen Harbour is the most comprehensive port providing every single aspect of service requirement for the offshore O&G sector, decommissioning, offshore energy and cruise activity. The harbour provides alongside direct piped fuels, muds, waste, cements, bulks, minerals, water. The harbour has extensive tankage which accommodates fuels, bulks and wastes. Local Tenants / Operators have self-propelled modular transporters, Heavy Mobile Cranes, naturally occurring radioactive material handling capability, waste and scrap management services, supported by direct rail connection into the Harbour and pipeline culverts to facilitate expansion of facilities. Crew Transfer Vessels, towage and (Platform Supply Vessels) PSV support and ship repair facilities/ dry dock are all available.

- Montrose Port. Montrose Port offers 1000 metres of quayside on both the north and south side of the port and provide a sheltered harbour almost half a mile long and berths up to a depth of 8.5m. The quaysides are fully equipped to provide support for project work from chain and anchor inspections to decommissioning activities and offshore wind projects.
56. Scottish Renewables (2022) surveyed Scottish companies (326 survey respondents, 179 of which were located in the northeast) to determine how many representatives active in different industries had already developed a commercial track record in offshore wind. The results indicate that many companies (approximately 50%) have already developed a track record in offshore wind (**Figure 19.4**), with up to 60% well-established oil and gas companies already having begun work in the offshore wind sector (**Figure 19.5**).

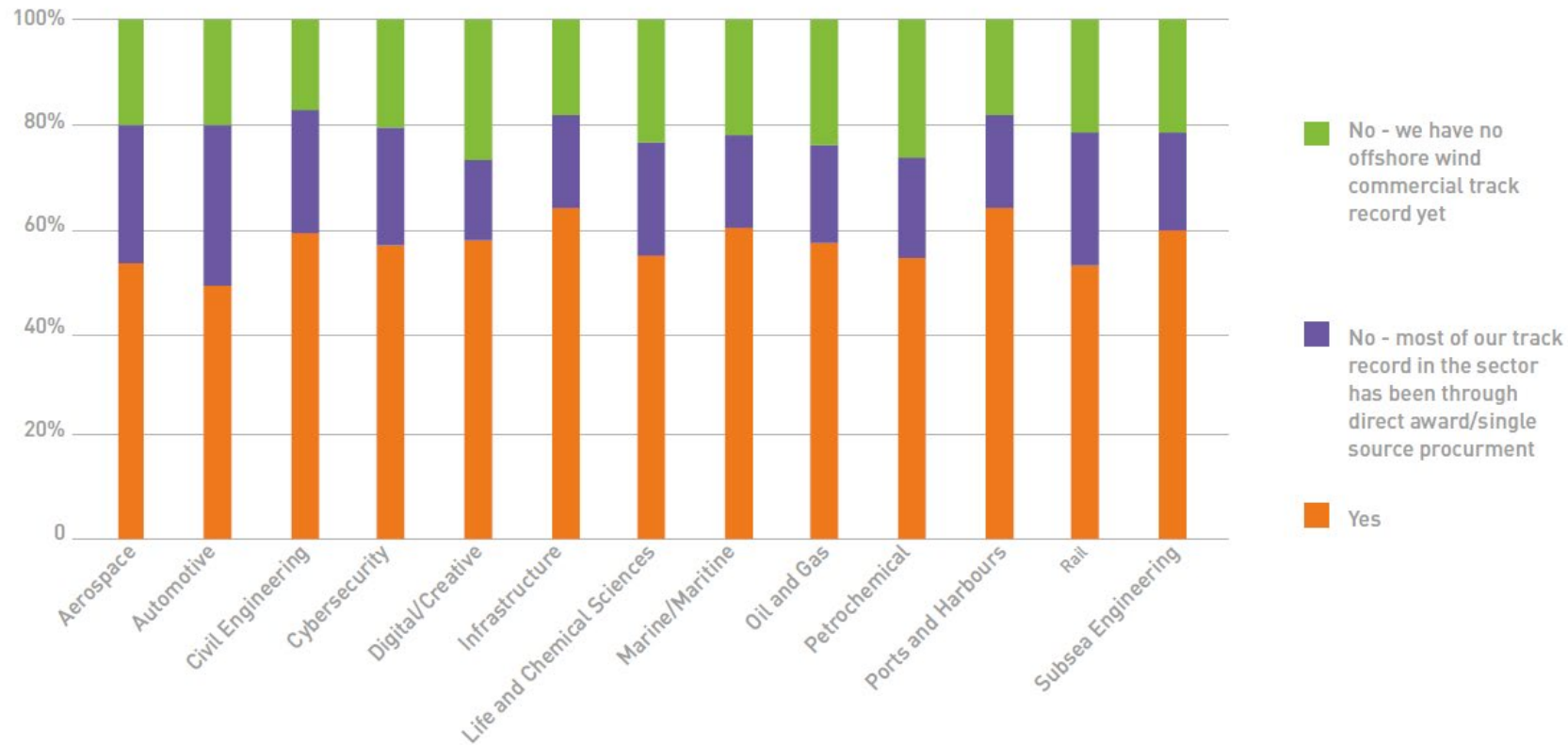


Figure 19.4 Current experience and commercial track record in offshore wind of Scottish companies active in other industries. Total survey respondents = 326. Figure sourced from Scottish Renewables (2022).

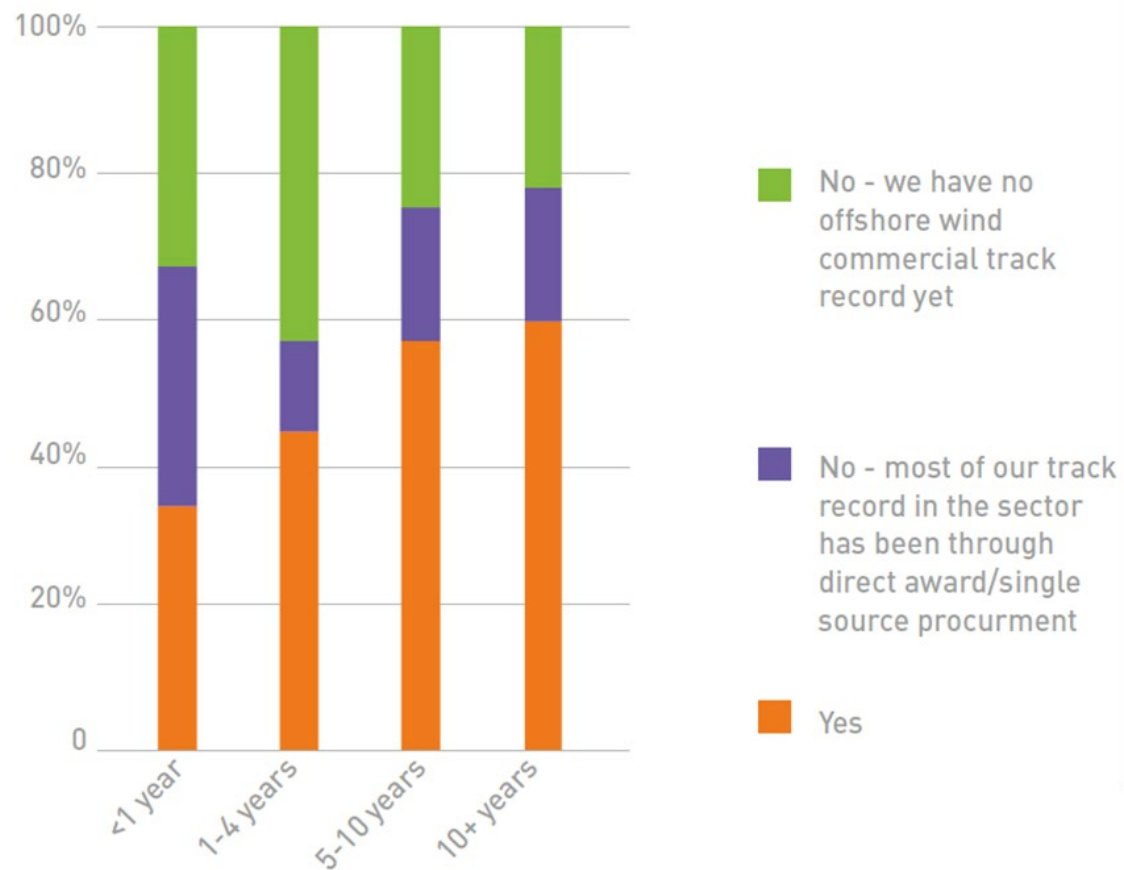


Figure 19.5 Current experience and commercial track record in offshore wind of O&G companies relative to their O&G experience/track record. Figure sourced from Scottish Renewables (2022).

Local Settlements

57. Buchan, the administrative area of Aberdeenshire containing landfall locations for the Project, represents 9% of Aberdeenshire's land area and 16% of its population. Buchan had a 5.1% unemployment rate in 2021, compared to 4% in Aberdeenshire and a 7.4% Scottish national rate. The median household income of Buchan is £31,726, compared to £37,853 in Aberdeenshire and £30,666 nationally (Aberdeenshire Council, 2021c).
58. The proposed NorthConnect Parallel Cable Landfall is closest (0.6 km) to the settlement of Boddam, which had a population of 1,270 in 2016 (Aberdeenshire Council, 2016). Boddam serves largely as a commuter settlement for Aberdeen and Peterhead, with low levels of tourism.
59. The village of Buchanhaven lies approximately 0.9 km to the south of the southernmost section of the St Fergus South Landfall Cable Corridor. Buchanhaven is itself approximately 1 km northwest of Peterhead town centre. The expansion of both Peterhead and Buchanhaven over time has led to the disappearance of a clear boundary or separation between the two settlements. Peterhead is the major town in Buchan with a population of 19,270 in 2016 (Aberdeenshire Council, 2019).

Key Local Industries

60. Peterhead relies heavily on fishing and the O&G sector for local employment, while the harbour facilities are also now starting to provide support to the rapidly expanding renewable energy industry. Peterhead has been identified as a potential location for development to support renewables within Scotland, building on its experience in supporting the O&G industry of the North Sea (Aberdeenshire Council, 2016b).
61. As with Peterhead, Boddam grew during the 18th century due to the local fishing industry, however, in the 1800s, the local fleet outgrew the harbour and many vessels moved to use the expanding Peterhead harbour instead. Quarrying was also an important local industry, with 'Peterhead granite' being exported both around the UK and overseas. The town was also the location of a former Royal Air Force (RAF) base, and a railway branch, both now closed, although the RAF Buchan Ness radar station still maintains a small operations staff of around 30 people made up of military and civilian personnel. In the present day, Boddam is a commuter settlement for workers in Aberdeen or Peterhead, with some inshore fishing still based here, primarily fishing for crab, lobster and mackerel.
62. In 2020, UK vessels landed 623 thousand tonnes of sea fish into the UK and abroad with a value of £831 million. Compared to 2019, this is a slight increase in the quantity of sea fish landed and a 16 per cent decrease in value landed. Peterhead is the largest port in the UK, in terms of fisheries landings and value, with 146.1 thousand tonnes of fish and shellfish landed in 2020 which accounts for a value of £159.3 million at first sale. In comparison, the next largest port Lerwick had landings weighing 35.6 thousand tonnes, accounting for a value of £44.3 million in 2020 (Marine Management Organisation, 2021).

19.7.1.2 GVA

63. GVA in Aberdeen City and Aberdeenshire was £20.0 billion, equating to 14.3% of total GVA in Scotland. Productivity in the region is also higher than the national average (if using GVA per capita as a proxy), with Aberdeen City and Aberdeenshire showing a 58% increased GVA per capita compared to Scotland as a whole (£40,667 and £25,685 respectively) (**Table 19.13**). This is predominantly due to the impact of the O&G industry in these two council areas.

Table 19.13 GVA performance for relevant council regions and nationally, 2017. Source: ONS, 2018

Geographical Region	GVA (£ million)	GVA per capita (£)
Aberdeen City and Aberdeenshire	19,951	40,667
Scotland	139,338	25,685

19.7.1.3 The Renewable Energy Sector

64. The renewable energy sector has grown steadily in Scotland over the past few years, with an annual capacity increase of 800 MW between 2009 to 2019 (Scottish Renewables, 2020). Turnover from the renewable energy sector was £5,340 million in 2019, of which £889 million was related to the offshore wind sector (Scottish Renewables, 2020). A survey in 2019 suggest that around 22,260 full -time employees in the Scottish renewable energy sector which includes direct, indirect and induced jobs. The Fraser of Allander Institute report (Fraser of Allander Institute, 2021) estimated that approximately 4,700 were within the offshore wind segment alone and that this number is expected to grow significantly over the next decade. This was therefore equal to the entire Scottish commercial fishing industry (4,860) (Scotland's marine economic statistics 2018).

19.7.1.4 Construction, Operation and Maintenance Base Selection

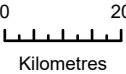
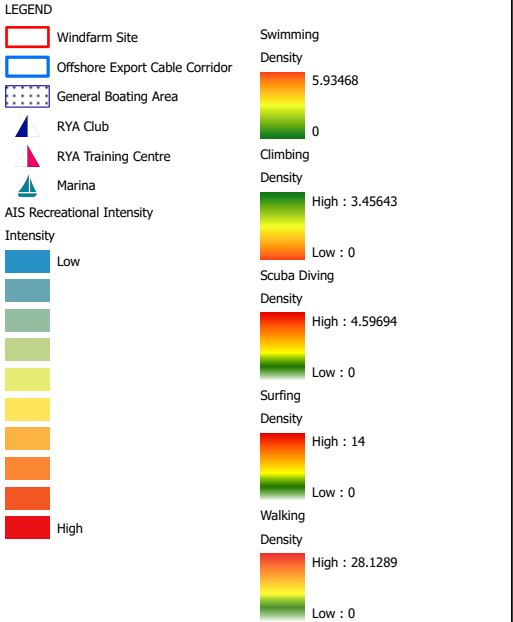
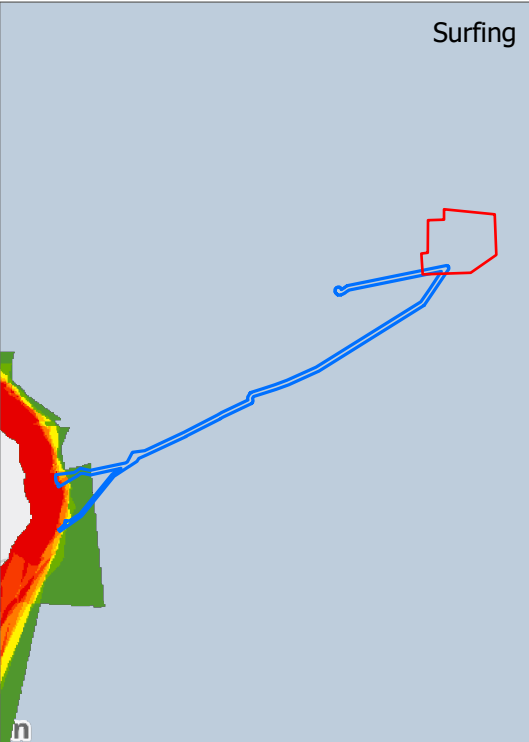
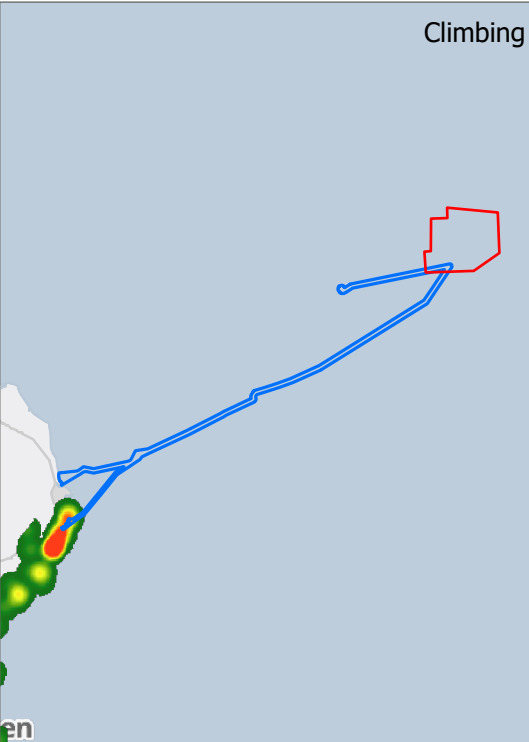
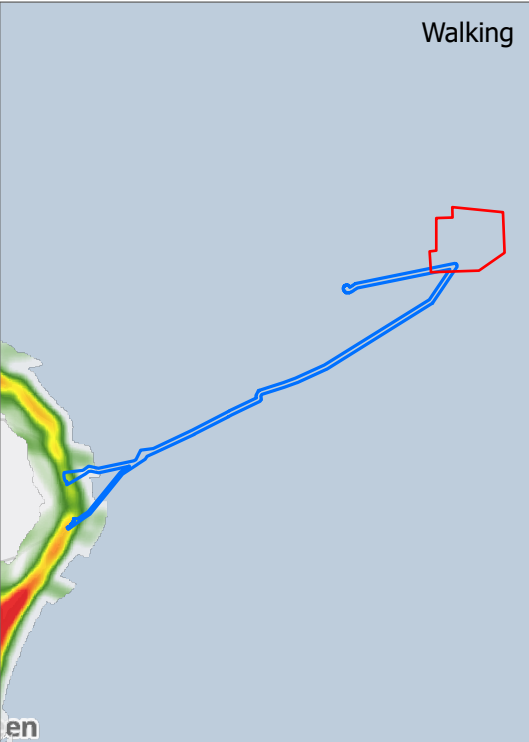
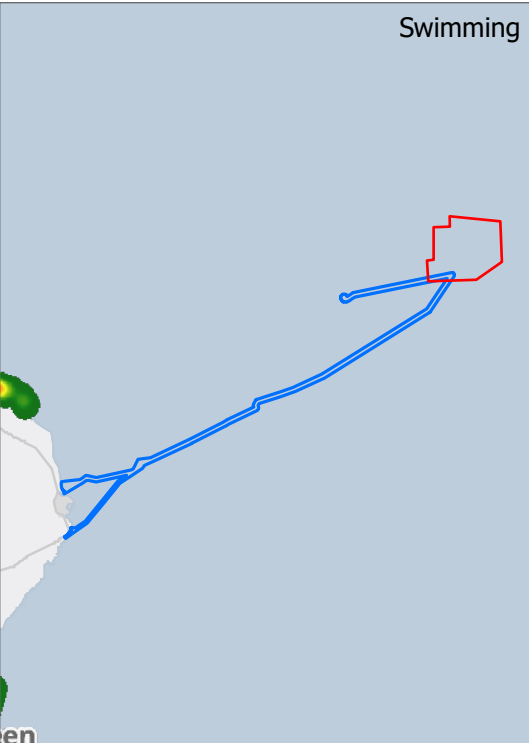
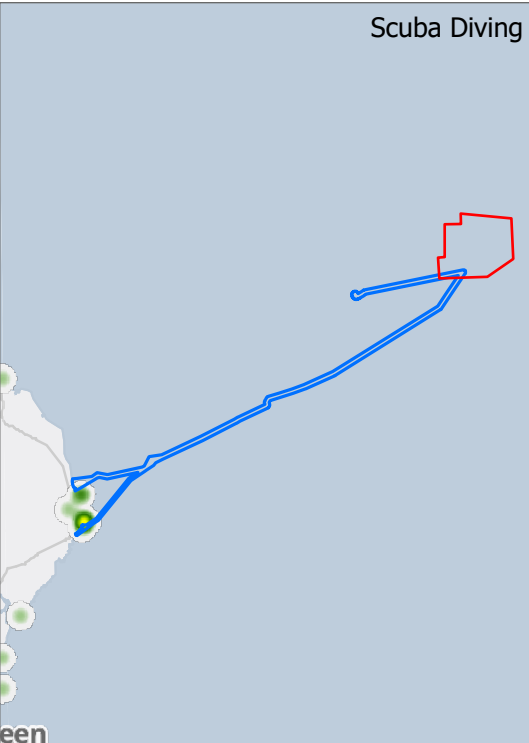
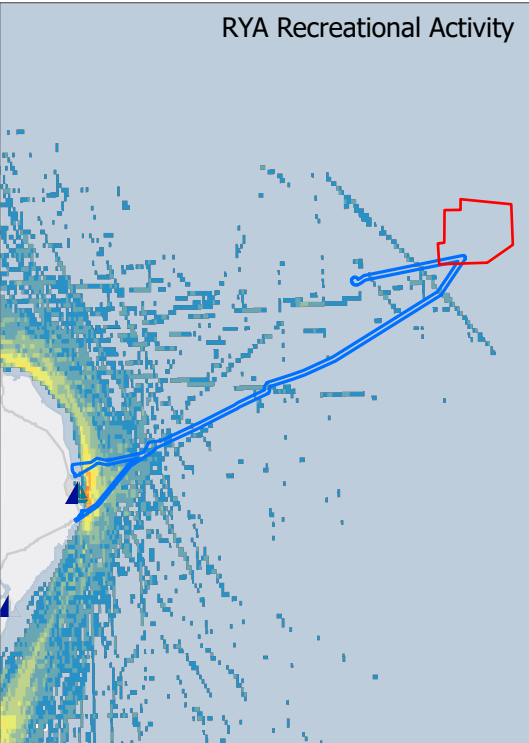
65. The construction work is likely to be undertaken at a port or harbour in a region of Scotland that has the appropriate facilities, capacity and staff resources. The selection of technologies will consider the need for final manufacturing and assembly, along with the availability of skills associated with this activity. Further, the installation methods adopted at the wind farm location will draw upon existing oil & gas technology and services active in Scotland. An operations and maintenance base will also be established at a port or harbour in the northeast of Scotland to ensure that the wind farm is easily accessible. There are already a number of operations and maintenance bases set-up in ports along the northeast coast of Scotland supporting operating offshore wind farms and oil and gas activity. The Project's operations will incrementally add to these activities and the project team have engaged with several ports to allow strategic discussions around expansion opportunities.
66. Potential Construction, Operation and Maintenance (COM) bases for the Project are currently under evaluation, with the selection including reducing the environmental impact, in part by minimising the distance from the wind farm. The northeast ports of Aberdeen, Peterhead and Montrose are currently under consideration, as well as potentially those in the Moray Firth area; Ardesier, Nigg and Cromarty Firth. The outcome of this decision-making process will affect the distribution of localised socioeconomic impacts resulting from the Project's COM phases.
67. As the Project moves into the procurement phase it will seek to maximise local content, where possible. Supply chain events in Scotland will be held to enable local businesses to engage with the Project. There is a supply chain contact form available on the Project website to enable local suppliers to contact the Project (<https://greenvoltoffshorewind.com/#supply>).

19.7.2 Tourism

68. Marine tourism (in this case defined as an activity that is hosted or focused on the water, comprising boating, kayaking, stand up paddleboarding (SUP) and swimming) plays an increasingly important role in Scotland's tourism sector, with ambitions set out in the Second Strategic Framework Scotland's Marine Tourism Sector to growing the industry's overall economic contribution to over £500 million by 2025 (British Marine Scotland, 2020).
69. The Scottish Government estimate that marine tourism generated £594 million GVA and employment for 28,300 people in 2017. This represents 14% of the £4.1 billion GVA from all Scottish tourism (Scottish Government, 2020). The North East Marine Region, which encompasses the local Study Area, contributed £47 million GVA and 2000 jobs to the marine tourism sector (**Figure 19.8**).

19.7.3 Recreational Marine Users

70. There is a selection of marine recreational activities which are supported within the North Sea of the Study Area of this assessment. These activities include sailing, scuba diving, beaches, climbing, walking and surfing. **Figure 9.6** and **Figure 19.7** present the locations of these sites in relation to the Offshore Development Area.



Data: RYA 2021, Scottish Government 2022, Esri, HERE, Garmin, Esri, HERE, Contains OS data © Crown Copyright and database right 2022, Contains data from OS Zoomstack

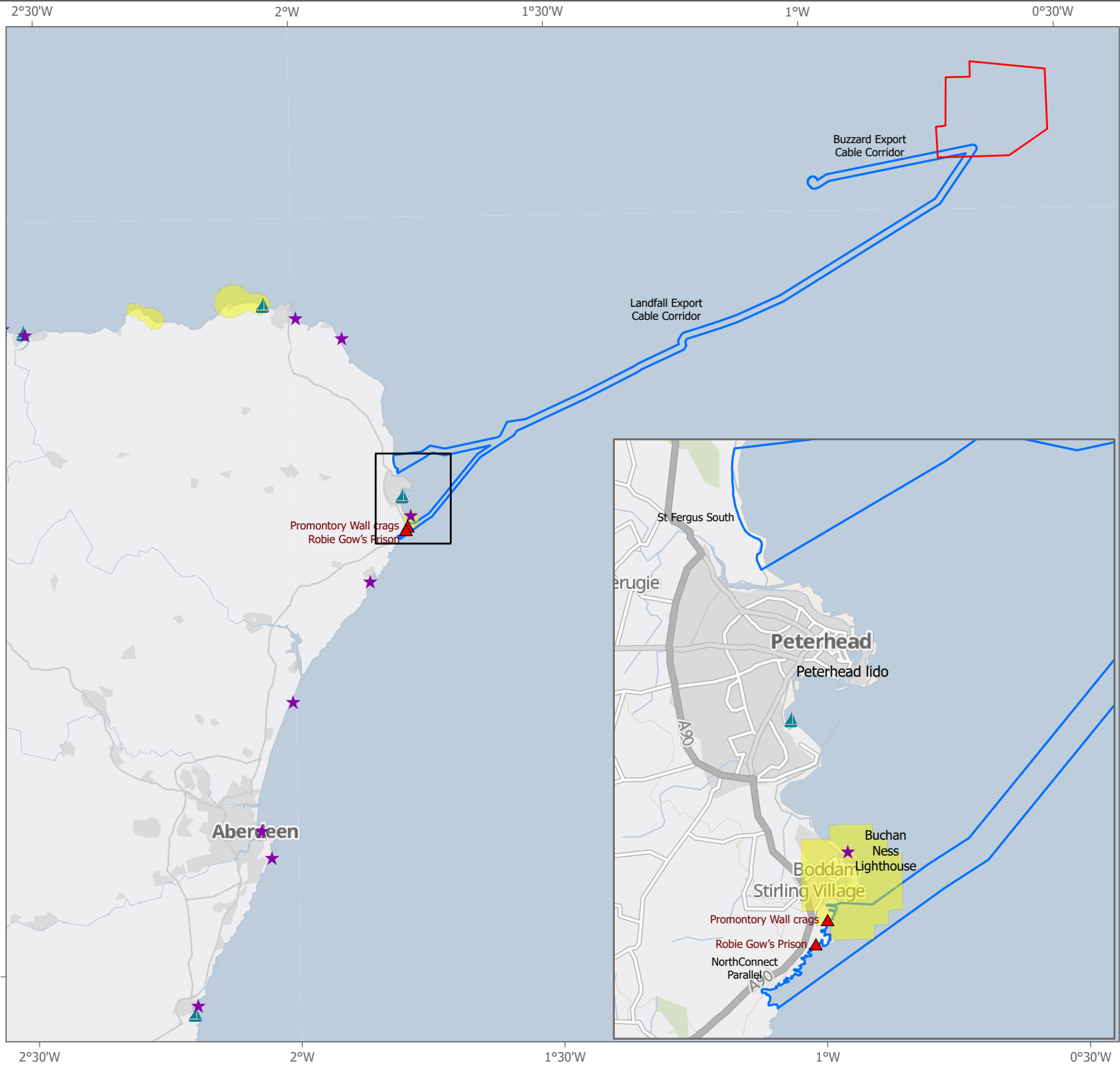
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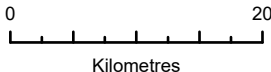
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- LEGEND**
- Windfarm Site
 - Offshore Export Cable Corridor
 - ▲ Marina
 - ★ Surf spots
 - Dive spots
 - ▲ Sea cliff climbing



Data: Magic Seaweed, RYA 2021, Scottish Government 2022, Esri, HERE, Garmin, USGS
Esri, HERE
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Contains data from OS Zoomstack

PROJECT: GREEN VOLT

TITLE: Figure 19.7 Recreation Activities

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71. During the consultation process, the Royal Yachting Association (RYA) confirmed that Automatic Identification System (AIS) information indicated that private yachts and motorboats have transit route marks in the direction of the Windfarm Site. The Windfarm Site is located 80 km from shore and therefore there is very limited recreational use associated with the Windfarm Site. The density of recreational vessels was found to be highest in the coastal waters off Peterhead, with far fewer crossings of the Landfall Export Cable Corridor beyond the limit of the inshore region at 12 nm (**Chapter 14: Shipping and Navigation**). The Windfarm Site is outside of indicative areas of general recreational boating identified by the RYA, which mainly relate to club training and racing areas. Peterhead harbour offers excellent shelter for recreational vessels in all weather. It is also home to a sailing club (Peterhead Sailing Club), a Sea Cadet Unit and three RYA training centres. It is likely that this activity will increase in the summer months when the weather is more favourable for yachting expeditions. Impacts on recreational vessels are assessed within **Chapter 14: Shipping and Navigation** and **Appendix 14.1: Navigational Risk Assessment**.
72. No wildlife watching boat tours operate in the vicinity of the Offshore Development Area. The nearest tour operates out of Banff, with the wildlife watching boat travelling around Troup Head before returning, so will not be affected by activities associated with the Project. The next closest wildlife watching tour in the other direction around the coast operates out of Aberdeen and remains close to Aberdeen Harbour. This means that similarly, this operator is of too great a distance to be impacted by the Project.
73. Both Grampian Sub Aqua Club and Aberdeen Sub Aqua Club are known to use Boddam Harbour and Peterhead as bases for diving the Scottish northeast coast. Common dives include the sea arch around the Buchan Ness lighthouse at Boddam. The Buchan Lighthouse dive site is within the vicinity of the NorthConnect Parallel Landfall location. Other than the above-described diving activity, there are no known recreational dive sites in the vicinity of the Offshore Development Area.
74. Peterhead Lido beach is set within the outer walls of Peterhead harbour (approximately 4km north of the NorthConnect Parallel Landfall and 3 km south of the St Fergus South Landfall) and has won a seaside award every year since 2012 in recognition of its access, facilities, safety, environmental quality and heritage. Cruden Bay, approximately 7.5 km southwest of the NorthConnect Parallel Landfall has also received the same awards annually. Further information on beaches and water quality is provided in **Chapter 8: Marine Sediment** of this **Offshore EIA Report**.
75. There are a number of recorded sea cliff climbing crags to the south of Boddam, close (< 0.5 km) to the NorthConnect Parallel Landfall. Only Robie Gow's Prison and Promontory Wall crags having had a single ascent logged within the previous 12 months (UK Climbing, 2022). There are no climbing crags nearby the St Fergus South Landfall. In any case, as the export cable will make landfall by horizontal directional drilling (HDD), no disturbance of the sea cliff features during construction is anticipated.
76. The coastal path in this area is part of the network of Core Paths in Aberdeenshire and links Whinnyfold just south of Cruden Bay with Boddam, Peterhead and further north to Rattray Head. The terrain is rough coastal path, muddy in places with unprotected cliff edges and provides opportunity for coastal walking and bird watching. The section at Long Haven Bay runs through the Long Haven Scottish Wildlife Trust reserve. The Trust provides parking for a small number of cars at Longhaven on the A90, which gives easy access to the coastal path. Further information on the existing coastal paths is provided in the Project's **Onshore EIA Report**.
77. The coastal waters in both Landfall Export Cable Corridors are popular surfing and windsurfing areas (The Scottish Marine Recreation and Tourism Survey (SMRTS), 2015). Due to the outfall from the power station in Sandford Bay, the water temperature is slightly warmer than surrounding coastal waters, making it popular with surfers, particularly through the winter months. However, lack of facilities at both landfall locations (showers, changing facilities) makes other local beaches a more popular base from which to surf and windsurf from.

78. Sea angling from shore is recorded in the vicinity of both landfall sites. The elevated water temperature due to the cooling water discharge from the power station in Sandford Bay attracts a number of species of fish, including bass. Albert Quay at Peterhead, which lies between the two export cable landing sites, is another popular location, as is Ugie beach at Peterhead and near the mouth of the River Ugie.
79. Peterhead Canoe Club is based in Peterhead and in the summer months its members use the coastal waters around Peterhead for training and socialising. However, the exposed nature of the coastline, in comparison with the sheltered inlets and bays of the west coast of Scotland, limit the area's use by kayakers and canoeists. North of the St Fergus South landfall option lies Rattray Head, an area of sand dunes which projects into the North Sea. This area is relatively popular with kayakers and canoeists for its lighthouse, beaches, wreck and marine wildlife. Approximately 4 km south of the NorthConnect Parallel landing site is the kayaking site of Bullers of Buchan. This is popular for its red granite cliffs, sea arches, Slains Castle, lighthouse and seabird colonies (Scottish Sea Kayaking, 2022).
80. Further information available on the recreational marine users is provided in **Chapter 14: Shipping and Navigation** of this **Offshore EIA Report**.

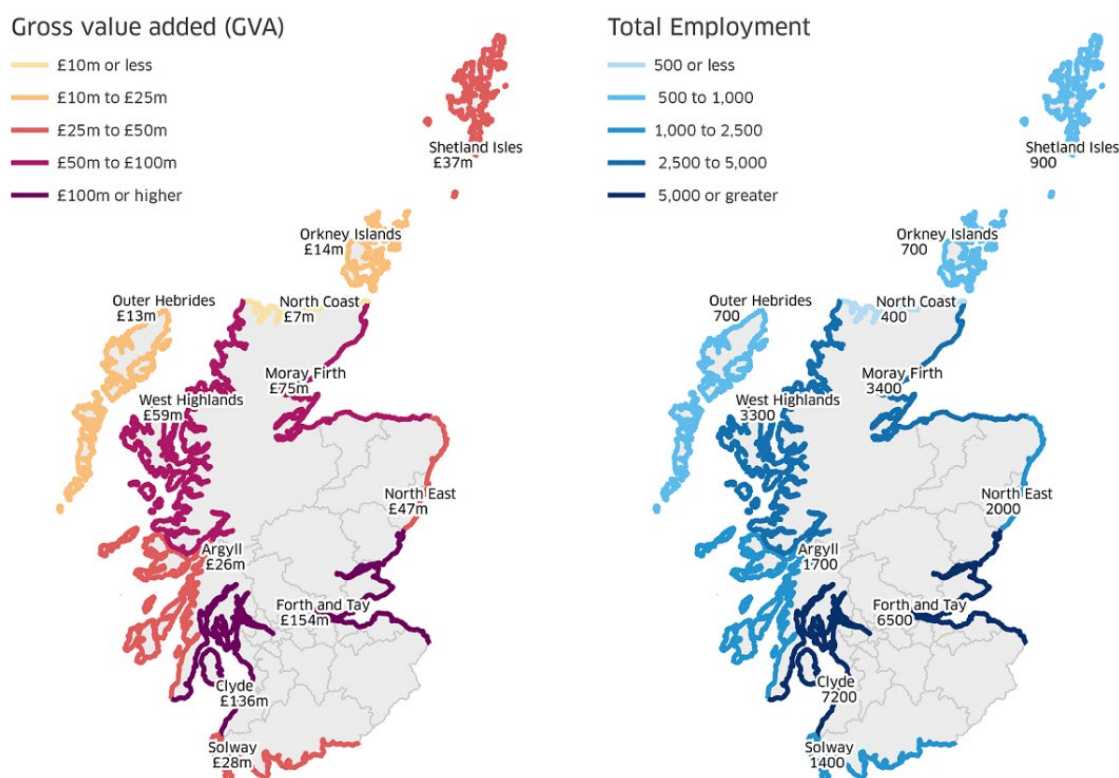


Figure 19.8 Marine tourism GVA (left) and employment (headcount) (right) by Scottish Marine Region, 2017. Source: Marine Scotland. Scottish Government (2019).

81. In 2019 (the most recent dataset available), Grampian attracted 8% of all overnight visits and 11% of all day trips in Scotland. In terms of tourism expenditure, these shares were 5% and 9% of the Scottish total, respectively (VisitScotland, 2020).

82. There were a total of 15,926 visits (domestic and international) to Grampian in 2019, accounting for a total spend £856 million. However, of the top five free and paid tourist destinations (by visitor numbers) in Grampian, none are within the vicinity of the Offshore Development Area.
83. The employment generated, and GVA added by tourism visits to Aberdeen City and Shire are shown in **Table 19.14**.
84. The nearest holiday residences to the southern offshore export cable landfall are the Buchan Ness Lighthouse Holiday Cottages at ~0.5 km distance, which sleep a maximum of 8 people (Buchan Ness Lighthouse, 2022) and have seaward views. There are also two hotels within Boddam itself, however the area is not known as a tourist destination.
85. The St. Fergus South Landfall option area of search ~ 0.9 km north of the village of Buchanhaven has no seaward facing holiday residences.
86. Key coastal tourist activities within the vicinity of the two landfall options are:
 - Golf (Peterhead Golf Club is located on the dunes at the mouth of the River Ugie, adjacent to the St Fergus South Landfall);
 - Beaches (Peterhead and St Fergus South Landfall);
 - Sea angling/ boat trips (Operating out of Peterhead and Boddam harbours);
 - Scuba Diving (NorthConnect Parallel Landfall);
 - Seacliff Climbing (NorthConnect Parallel Landfall); and
 - Museums (Peterhead Prison Museum, Arbuthnot Museum (Peterhead)).
87. These recreational activities are covered in detail in **Chapter 17: Infrastructure and other Marine Users**.

Table 19.14 Regional Tourism Statistics for 2019 (Visit Scotland, 2020)

Local Authority/Region	Employment (000's)	GVA (£ million GBP)
Aberdeen City	10.9	234.4
Aberdeenshire	7.5	148.7
Scotland	217.1	4,141.2

19.8 Potential Impacts

88. The Project received a **Scoping Opinion** from MS-LOT in April 2022 (MS-LOT, 2022) (**Appendix 1.1**). **Table 19.15** presents the impacts that were proposed to be scoped out in the **Offshore Scoping Report (Appendix 1.2)** and the impacts that the **Scoping Opinion** require to be scoped in for the **Offshore EIA Report**.

Table 19.15 Potential impacts scoped in or out of the EIA for socioeconomics, tourism and recreation

Potential Impact	Construction		O&M		Decommissioning	
	Scoping Report	Scoping Opinion	Scoping Report	Scoping Opinion	Scoping Report	Scoping Opinion
Direct employment (all levels)	✓	✓	✓	✓	✓	✓
Supply chain impacts	✓	✓	✓	✓	✓	✓
Increase in demand for local private services/goods	✓	✓	✓	✓	✓	✓
Interference with planned infrastructure improvements in the local area	✓	✓	✓	✓	✓	✓
Impact on marine tourism	x	✓	x	✓	x	✓
Nuisance impacts, e.g., noise, lighting	x	x	x	x	x	x
Impact on recreational activities e.g., sailing, surfing, diving etc	✓	✓	✓	✓	✓	✓

89. A range of potential impacts on socioeconomics and tourism have been identified which may occur during the COM, and decommissioning phases of the Project. Possible impacts relating to the potential changes to the socioeconomic and tourism of the area are considered in **Table 19.16**. A high-level project timeline which indicates the timescales over which impacts during COM, and decommissioning are likely to occur, is displayed in **Figure 19.9**.

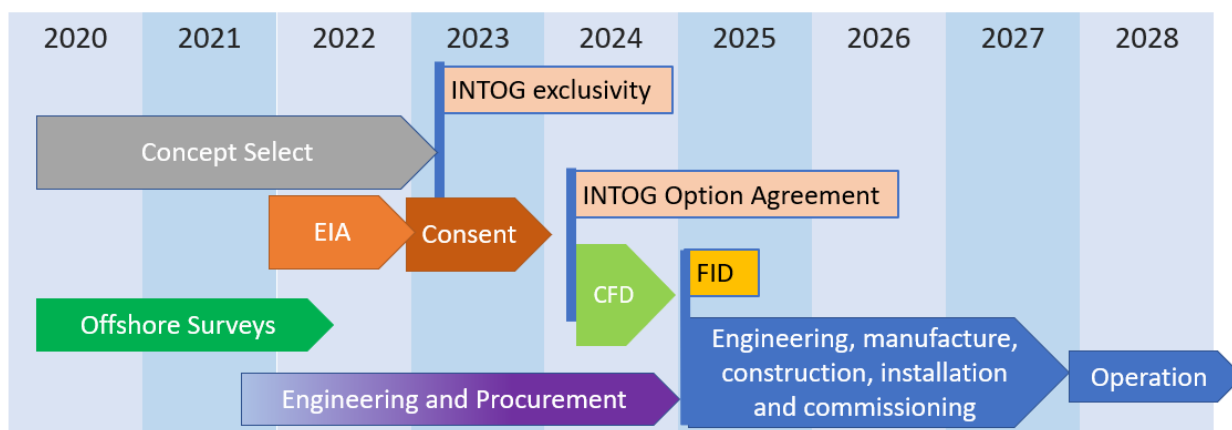


Figure 19.9 Proposed Project timeline

90. A summary of the potential impacts assessed is provided in **Table 19.16**.

Table 19.16 Summary of potential impacts to offshore social-economics and tourism

Green Volt Project Phase	Potential Impact Pathways
Construction	<ul style="list-style-type: none"> • Direct employment (all levels) • Supply chain impacts • Increase in demand for local private services/goods • Interference with planned infrastructure improvements in the local area • Impact on recreational activities e.g., sailing, surfing, diving etc

Green Volt Project Phase	Potential Impact Pathways
O&M	<ul style="list-style-type: none"> • Direct employment (all levels) • Supply chain impacts • Increase in demand for local private services/goods • Interference with planned infrastructure improvements in the local area • Impact on recreational activities e.g., sailing, surfing, diving etc
Decommissioning	<ul style="list-style-type: none"> • Direct employment (all levels) • Supply chain impacts • Increase in demand for local private services/goods • Interference with planned infrastructure improvements in the local area • Impact on recreational activities e.g., sailing, surfing, diving etc

19.8.1 Embedded Mitigation

91. There are no embedded mitigations considered for socioeconomic receptors, as it is anticipated that the overriding socioeconomic impacts of the Project will be positive in nature and consent conditions are not expected in relation to socioeconomic effects. In this instance, mitigation can therefore be more usefully interpreted as enhancement of positive impacts. Consultation is being carried out with local stakeholders, business and tourism groups and public sector bodies, such as Scottish Enterprise, and through other activities that raise awareness of the potential opportunities that the Project provides to maximise the positive socioeconomic impacts.
92. As the Project moves into the procurement phase it will seek to maximise local content, where possible. Supply chain events in Scotland will be held to enable local businesses to engage with the Project. There is also a supply chain contact form available on the Green Volt website to enable local suppliers to contact the Project². The SCDS for Green Volt will be developed following the offer of an INTOG Exclusivity Agreement by Crown Estate Scotland. The SCDS would be provided to Crown Estate Scotland in advance of any Option Agreement being executed.
93. As the Project evolves, the Applicant will ensure up to date information is provided to local communities and other stakeholders on progress. The Applicant will endeavour to make the information accessible to those that may be affected. The Project website will be used to share information and alternatives for reaching the appropriate audiences will be considered, as necessary. The Project website includes a contact form to enable feedback to be provided to the Project at any time or else emails can be sent to hello@greenvoltoffshorewind.com. Some consultation activities have been undertaken prior to the submission of the **Offshore EIA report** and equivalent events will be held prior to submitting the onshore planning application.
94. Any offshore wind projects within Scottish waters can submit a Safety Zone application to Marine Scotland which will require other marine users to keep a minimum safe distance from a Project contracted vessel or marine infrastructure, such as incomplete offshore wind foundations. The purpose of the Safety Zones is to protect infrastructure that is being installed or vessels which require a large area to operate safely.
95. Safety Zones will be applied for by the Project as per relevant legislation (Energy Act 2004 and Electricity Regulations 2007) and The Department for Business, Energy and Industrial Strategy (BEIS) Guidance on Applying for Safety Zones (BEIS, 2011) to mitigate any potential impacts and to ensure safe and effective COM of the wind farm. Safety zones for construction, major operation and maintenance and decommissioning will be agreed with MS-LOT and located around any structure

² <https://greenvoltoffshorewind.com/#supply>

where construction work is underwater, partially completed structures where work is not underway and completed structures. These are likely to include:

- 50m radius Safety Zone around each turbine location during the operation phase; and
 - 500m radius Safety Zone around each turbine location during the construction phase.
96. The Project will additionally ensure that there are appropriate communications to inform other marine users of the progression of the works and the notification of significant construction events which have the potential to temporarily restrict areas for safety purposes. These measures are detailed in **Chapter 14: Shipping and Navigation** and will include:
- A marine coordination centre to monitor vessels contracted by the Project and other marine vessels. This centre will be monitored 24/7 and enable other marine users to contact personnel associated with the Project about any identified issues.
 - Notices to Mariners (NtM) will be issued to provide updates to other marine users of the construction works that are currently being undertaken and any planned in the near future. Any persons can be added to the NtM distribution list as required.
 - A notification will be produced in the fortnightly Kingfisher news bulletin or when a significant construction event is planned to occur with the Project.
 - Any cardinal or marker buoys associated with the Project will be communicated to the necessary stakeholders and informed through NtMs, UK Hydrographic Office (UKHO) and National Lighthouse Board (NLB). The information will include detailed maps and coordinates to enable the continuing navigational safety for other marine users.
 - Details will be provided to UKHO to facilitate appropriate marking of Project infrastructure on appropriate UKHO Admiralty Charts.

19.8.2 Worst Case

97. The worst case scenario for the Project is considered to be the realistic scenario with the worst effect on the receptor in question. Given that socioeconomic receptors are expected to be positively impacted, the worst case is given as the lowest estimated benefit, e.g. the lowest direct employment estimated to arise from development of the Project.
98. The impacts of the Project on socioeconomic receptors will vary between construction, operation and decommissioning phases. The timing of these phases is summarised in **Figure 19.9**.

19.9 Assessment of Potential Impacts

19.9.1 Potential Impacts during Construction

19.9.1.1 Direct employment

99. During preparation and installation of the wind turbine generators (WTG) and the Offshore Export Cable Corridors, there will be potential for a diverse range of jobs to be created. The Applicant is committed to the development of a local supply chain and the importance of a just transition for the UK energy sector workforce. The Applicant is currently seeking ways to maximise UK participation in this project. A number of local and Scottish Contractors and Consultants are already working on the Project. Supply chain engagement in Scotland has already begun and will build on this substantially throughout 2023.
100. The estimated GVA of the Project is £3.76 billion. 57.89% of this total value is expected to be allocated within the UK and a significant proportion of this could be added to Scotland (36.26%) and more directly to Aberdeenshire (5.85%).

101. Construction of the floating substructures is expected to be undertaken within a Scottish port facility and this is likely to include a significant level of fabrication support for the substructure assembly at a regional/UK wide level. The Project and enhancement of skill sets associated with the construction of the floating units will form a positive, short term (3 years) employment opportunity for the selected port site. It is expected that over 1,626 people could be required to support the construction and installation of the turbines within a 3-year period, with 113 local, 703 regional, and 1,123 UK FTE jobs directly created annually. Therefore, this represents a net economic benefit to the regional/national economy.
102. The construction of the Project is expected to create a small number of short-term employment opportunities in the area. There will be demand for skilled onshore and offshore construction workers, vessel operators and engineers during the construction phase. Given the nature of the development and the type of skills available in the local labour market, through the existing offshore wind supply chain capacity in Aberdeenshire and through transferrable skills from the Aberdeenshire O&G supply chain, it is anticipated that the majority of these jobs will be fulfilled using existing employment from the Aberdeen City and Aberdeenshire labour market.
103. It is expected that any vessels involved in the transport of WTGs would mobilise from a Scottish east coast harbour.
104. An estimate of the potential number of workers (FTE) required for construction of the Offshore Development Area is provided in Table 19.17.

Table 19.17 Estimates of the Employment Generated by the Construction Phase of the Project

Location	Employment type	FTE per annum	Duration (years)
Local	Direct	113	3
	Indirect	68	3
	Induced	68	3
Regional	Direct	703	3
	Indirect	422	3
	Induced	281	3
UK	Direct	1,123	3
	Indirect	674	3
	Induced	449	3

105. In addition to the technical construction workforce, a range of non-technical roles will also be required, such as security guards and administrative staff.
106. The magnitude of impact associated with construction jobs relating to the Project will be ≥ 50 FTE in the short term, leading to a magnitude of medium on a receptor with a value of national so the resulting effect is assessed as **moderate beneficial**. No additional mitigation is required.

19.9.1.2 Supply chain impacts

107. It is assumed that indirect and induced employment generation resulting from the construction of the Project would be focused within a number of sectors relating to development, surveying, consenting, project management, the manufacture and installation of component parts, engineering and design activities associated with maintenance requirements and land and marine transport of components. Levels of indirect and induced employment from construction are displayed in **Table 19.17**. The expected timings of these activities is displayed in **Figure 19.9**. These supply chain impacts will likely manifest at a minimum of a regional scale to a maximum of an international scale. Assuming beneficial

effects occur at a national level, this impact is designated a medium magnitude and a value of up to national, so the resulting effect is assessed as up to **moderate beneficial**. No additional mitigation is required.

19.9.1.3 Increase in demand for local private services/goods

108. In addition to the individuals and businesses directly employed by the Applicant during construction and installation of the WTGs and substructures, there is also the potential for indirect benefits for local businesses. Due to the nature of the works involved, there may be the need for specialist teams to be brought into the area. There will also be a need for the project management team to be present to oversee key construction activities.
109. The majority of the construction activities for a floating offshore wind farm, particularly the substructures and turbines, takes place in port. The construction work is likely to be undertaken at a port or harbour in a region of Scotland that has the appropriate facilities, capacity and staff resources. The port(s) on the east coast of Scotland will likely be selected to minimise the distance to the wind farm site, whilst balancing with facilities already in place locally to the port. Consequently, the use of existing facilities for the in-port construction works means that there will be no impact to local accommodation availability directly from the Project.
110. The impact on local accommodation will therefore be negligible. As indicated in **Section 19.7.2**, Boddam and the immediate area has low levels of tourism, but workers related to the Project will not influence this.
111. It is also possible that work vessels required for installation of the WTGs at the offshore site and for the laying of export cables will use the chosen regional operations port (Peterhead, Aberdeen or Montrose) to mobilise/demobilise and berth when not required at sea. This would have an indirect benefit to the local economy through the payment of port, berthing, bunkering and pilotage fees.
112. The impact magnitude of increased demand for local private services/goods during the construction phase is deemed to be negligible within the Buchan area, with a receptor value of high local so the resulting effect is assessed as **negligible**. No additional mitigation is required.

19.9.1.4 Interference with planned infrastructure improvements in the local area

113. As the Project is based offshore, approximately 80 km east of the coast from Peterhead, the impacts on either local business or infrastructure improvements are unlikely to be noticeable. There are no planned infrastructure improvements within 2km of either the St Fergus South or NorthConnect Parallel Landfall. The planned HDD for export cable landfall will avoid any impacts on surface infrastructure. The routing of the cable during HDD will avoid sensitive buried infrastructure. In the eventuality that cable crossings are required, for example a cable crossing will be required where the existing operational export cable for the Hywind Scotland Pilot Park is crossed by the NorthConnect Parallel Offshore Export Cable Corridor, then this will be managed through crossing agreements. For more details on cable/pipeline crossing and the associated crossing agreement procedures, see **Section 17.8.1.4, Chapter 17: Infrastructure and Other Marine Users**. The impact of construction on local infrastructure improvements is deemed to be of negligible magnitude, with a value of low local, so the resulting effect is assessed as **negligible**. No additional mitigation is required.

19.9.1.5 Impact on marine tourism

114. Due to the distance of the Windfarm Site from shore (80 km), and assessment of the marine tourism activities in the local area, there is no pathway for impacts from construction on the wind farm on inshore marine tourism. There is potential for short term disruption of tourists in inshore areas during the laying of export cables, but this disruption will be minor, with a highly limited spatial and temporal extent. Onshore tourism will be considered in the separate **Onshore EIA Report**.

115. The Project's accommodation strategy for offshore workers during construction involves providing sufficient accommodation on work vessels to enable workers to remain at the offshore development area for the duration of the work tasks. Consequently, demand for local tourism accommodation will be unaffected by employees engaged in the construction phase of the Project.
116. The impact of construction on marine tourism is deemed to be of low magnitude, with receptor value of high local, so the resulting effect is assessed as **minor adverse**. No additional mitigation is required.

19.9.1.6 Disturbance of recreational activities

117. Seascape impacts of the Project on socioeconomics and tourism receptors have been scoped out due to distance from the shore.
118. The distance of the Project area from the shore (approximately 80 km) and the nearest recognised RYA sailing area and marina (Peterhead, 80 km) and limited onshore development element means there will be very limited impact on existing tourism and recreation uses and users in the local area during construction.
119. There are surfing spots at Cruden Bay (7 km southeast of NorthConnect Parallel Landfall) and at Sandford Bay (located at Peterhead approximately equidistant between the two landfall locations). Both of these locations are of sufficient distance to be unaffected by the spatially and temporally limited disturbance associated with export cable laying. This gives rise to a negligible magnitude of impact, on a receptor of regional value, so the resulting effect is assessed as **negligible** and not significant.
120. As discussed in **Chapter 14: Shipping and Navigation**, recreational activity was observed to be low in the vicinity of the Windfarm Site based on the data sources studied. Impacts will relate to recreational sailors closer to shore possibly having to re-route their journey to a minor degree, whilst export cables are being laid in inshore areas, giving rise to a low magnitude of impact, on a receptor of regional value, so the resulting effect is assessed as **minor adverse** and not significant.
121. As discussed in **Chapter 9: Benthic Ecology**, **Chapter 7: Marine Geology, Oceanography and Physical Processes** and **Chapter 15: Offshore Archaeology and Cultural Heritage**, the seabed in the Offshore Development Area does not contain any of the notable features that typically attract recreational divers, such as wrecks, reefs or hard substrate.
122. If the NorthConnect Parallel Landfall Export Cable Corridor option is chosen, there may be increased noise and turbidity affecting the nearby Buchan Head Lighthouse dive site whilst the Offshore Export Cables are being laid in the inshore area. This impact will be of low magnitude and highly temporally limited. As the Buchan Head Lighthouse site is not nationally renowned, and only dived by clubs in the surrounding Aberdeenshire region, there could be a low magnitude of impact, on a receptor of regional value, so the resulting effect is assessed as temporary and short term **minor adverse** and not significant during construction activities.
123. The landfall section of the Offshore Export Cable Corridor (regardless of whether NorthConnect Parallel or St Fergus South Landfalls are used) will be installed using HDD so will therefore cause minimal disruption to coastal path users, golf course users and potential climbers in the area. Impacts will relate to noise and sense of place, giving rise to a low magnitude of impact, on a receptor of high local value, so the resulting effect is assessed as **minor adverse** and not significant.
124. Other coastal users involved in water activities near the shore such as SUP, swimming, surfing, windsurfing, kayaking, snorkelling are assessed as having high local value, with an impact magnitude of low due to changes being limited to the short term. The effect on these users is therefore assessed as **minor adverse** and not significant.

125. Taken together, effects on recreation are as **minor adverse** and non-significant. The disturbance of recreational activities has the potential to cause an economic impact to operators, the local community and tourists. Impacts to onshore recreation activities will be considered in the **Onshore EIA Report**.

19.9.1.7 Construction activities leading to additional steaming to alternative fishing grounds

126. As discussed in **Chapter 13: Commercial Fisheries**, the impact of additional steaming to alternative fishing grounds is non-significant, due to the limited extent of reduction in access to or exclusion from areas within the Windfarm Site or Offshore Export Cable Corridor during construction activities. Therefore, the socioeconomic effect of increased steaming to fishing grounds is also assessed as **non-significant**.

19.9.2 Potential Impacts during Operation

19.9.2.1 Direct employment

127. Once the Project is operational, there will be routine maintenance of the WTGs carried out within the Windfarm Site.
128. There also will be periodic surveys of the cables (both inter-array and export), and potentially maintenance on the marine cables. This will require specialist vessels, equipment and personnel to carry out the operations. The work could be carried out by national or internationally based companies, but the majority is expected to be available in the local Study Area, based on the pre-existing offshore renewables supply chain and skills crossover with the well-developed O&G sector in the local area. The survey and maintenance will be carried out in short campaigns; hence, it is estimated that 8 local, 50 regional, and 80 UK FTE jobs will be directly created annually over the operational phase (~35 years) of the Project (see **Table 19.18**).
129. Overall, a total of 138 FTE jobs are estimated to be directly generated as a result of the operation of the Project. This long term (~35 years) FTE job creation is considered a medium impact magnitude, with a receptor value of national, resulting in a **moderate beneficial** impact. No additional mitigation is required.

Table 19.18 Estimates of the Employment Generated by the Operation Phase of the Project

Location	Employment type	FTE per annum	Duration (years)
Local	Direct	8	~35
	Indirect	5	~35
	Induced	5	~35
Regional	Direct	50	~35
	Indirect	30	~35
	Induced	20	~35
UK	Direct	80	~35
	Indirect	48	~35
	Induced	32	~35

19.9.2.2 Supply chain impacts

130. A discussion of the benefits of the Project has been provided in **Chapter 2: Need for the Project**. One of the quantified benefits, CO₂ emission reductions, has been described in **Chapter 18: Climate Change**.

131. It is assumed that indirect and induced employment generation resulting from the operation of the Project would be focused within a number of sectors relating to the manufacture and installation of component parts, engineering and design activities associated with maintenance requirements and land and marine transport of maintenance components. Whilst the geographical distribution of the operation and maintenance supply chain expenditure is not currently known it is likely that a proportion will be retained within the local economy. Expected levels of indirect and induced employment from operation are displayed in **Table 19.18**. The indirect and induced impacts of increased supply chain demand are likely to be less immediately noticeable, albeit creating new employment opportunities locally. The magnitude of impact is deemed to be low, with a regional value, so the resulting effect is assessed as **negligible**. No additional mitigation is required.

19.9.2.3 Increase in demand for local private services/goods

132. Operations and maintenance activities for the Project will be carried out with a Service Operation Vessel (SOV). A SOV, rather than a Crew Transfer Vessel (CTV), will be used for operation and maintenance activities as the Windfarm Site is too far offshore to steam there and back in a 12-hour shift and give enough time for doing work. A SOV is essentially a “walk to work” vessel and personnel would effectively live and work from the vessel for a 2-week period, meaning that local accommodation demand will be unaffected by operation and maintenance workers during works.
133. An operations and maintenance base will also be established at a port or harbour in north east Scotland to ensure that the wind farm is easily accessible. There are already a number of operations and maintenance bases set-up in ports along the northeast coast of Scotland supporting operating offshore wind farms and oil and gas activity. The Project’s operations will incrementally add to these activities and the Applicant has engaged with several ports to allow strategic discussions around expansion opportunities.
134. Given the number of expected FTE jobs generated by the operational phase of the Project (see **Section 19.9.2.1**), there will be likely be a slight increase in demand for local services such as accommodation and food and drink businesses. This impact is likely to be of low beneficial impact at a high local level, so the resulting significance of effect is assessed as **negligible**. No additional mitigation is required.

19.9.2.4 Interference with planned infrastructure improvements in the local area

135. The impact of any disruption associated with the operation and maintenance of the Project is anticipated to be negligible. As the Offshore Development Area is predominantly based far offshore, approximately 80 km east of the coast from Peterhead, impacts on either local business or infrastructure improvements are unlikely. The routine inspection and maintenance of the WTGs and Offshore Export Cables will have no pathway to affect planned infrastructure developments elsewhere. The impact of construction on local infrastructure improvements is deemed to be of negligible magnitude, with a value of low local, so the resulting effect is assessed as **negligible**. No additional mitigation is required.

19.9.2.5 Impact on marine tourism

136. Due to the distance of the Windfarm Site from shore (80 km), and assessment of the marine tourism activities in the local area, there is no pathway for impacts from construction on the Windfarm Site on inshore marine tourism. Workers engaged in operation and maintenance activities will pass through ports to board work vessels, before transiting to site and sleeping on board the vessel for the duration of the required works. The Applicant’s accommodation strategy for offshore workers during operation and maintenance involves providing sufficient accommodation on work vessels to enable workers to remain at the offshore development area for the duration of the work tasks. Consequently, demand for local tourism accommodation will be unaffected by employees engaged in the construction phase of the Project.

137. Impacts of operation and maintenance on marine tourism will therefore be negligible. The impact of operation on marine tourism is deemed to be of negligible magnitude, with receptor value of high local, so the resulting effect is assessed as **negligible**. No additional mitigation is required.

19.9.2.6 Disturbance of recreational activities

138. All existing onshore paths/climbing routes will be fully available during operations.
139. In terms of the Offshore Development Area, as discussed in **Chapter 14: Shipping and Navigation**, based on month-long summer and winter marine traffic radar surveys recreational activity was observed to be low in the vicinity of the Windfarm Site based on the data sources studied, and although it is recognised at additional vessels may also be transiting but not emitting AIS, impacts on recreational vessels during operation are expected to be low. Impacts will relate to offshore recreational sailors possibly having to re-route their journey, to a minor degree, to avoid WTGs, giving rise to a low magnitude of impact, on a receptor of regional value, so the resulting effect is assessed as **minor adverse** and not significant in EIA terms.
140. In the event Offshore Export Cable repairs are required during the operation and maintenance phase, associated effects would be similar in nature to the construction impacts but limited to specific locations and often shorter in duration. Exceptional maintenance activity may be required and may necessitate the use of large vessels and the imposition of a temporary 500 m safety zone. Impacts on the tourism and terrestrial/coastal recreation receptors are therefore assessed as a low magnitude of impact (due to the to the very limited nature of maintenance activities), on a receptor of regional value, so the resulting effect is assessed as **minor adverse** and not significant in EIA terms.

19.9.2.7 Operation activities leading to additional steaming to alternative fishing grounds

141. As discussed in **Chapter 13: Commercial Fisheries**, the impact of additional steaming to alternative fishing grounds is non-significant, due to the limited extent of reduction in access to or exclusion from areas within the Windfarm Site or Offshore Export Cable Corridor during operation activities. Therefore, the socioeconomic effect of increased steaming to fishing grounds is also assessed as **non-significant**.

19.9.3 Potential Impacts during Decommissioning

19.9.3.1 Direct employment

142. The type of decommissioning employment activities generated during this phase of the Project are likely to be similar in profile, but with lower numbers to those generated within the construction phase. For estimates see **Table 19.19**.

Table 19.19 Estimates of the Number of Workers Required for the Decommissioning Phase of the Project

Location	Employment type	FTE per annum	Duration (years)
Local	Direct	10	4
	Indirect	6	4
	Induced	6	4
Regional	Direct	64	4
	Indirect	38	4
	Induced	26	4
UK	Direct	177	4
	Indirect	106	4
	Induced	73	4

143. At this stage of the Project, it is difficult to assess with any certainty the proportion of decommissioning jobs which would be captured locally, compared to those which would be sourced nationally, or even internationally. However, the intention would be to source a significant proportion of decommissioning employment activity from Aberdeenshire (see **Table 19.19**).
144. It is, therefore, assessed that decommissioning of the Project would have an employment impact of low magnitude on a receptor of national value, therefore a **minor beneficial** effect is predicted. No additional mitigation is required.

19.9.3.2 Supply chain impacts

145. The indirect and induced supply chain impacts of decommissioning of the Project are assumed to arise in the engineering and design activities associated with decommissioning requirements and land and marine transport of decommissioned components to a facility for processing for reuse, recycling and/or disposal. Whilst the geographical distribution of the decommissioning supply chain expenditure is not currently known it is likely that a proportion will be retained within the local economy. Expected levels of indirect and induced employment from decommissioning are displayed in **Table 19.19**. The magnitude of impact is deemed to be low, with a value of regional, and the resulting effect is assessed as **negligible**. No additional mitigation is required.

19.9.3.3 Increase in demand for local private services/goods

146. Given the number of expected FTE jobs generated by the decommissioning phase of the Project (see **Section 19.9.3.1**), there will be likely be a slight increase in demand for local services such as accommodation and food and drink businesses. This impact is likely to be of low beneficial impact at a high local level, so the resulting effect is assessed as **negligible**. No additional mitigation is required.

19.9.3.4 Interference with planned infrastructure improvements in the local area

147. The impact of any disruption to local infrastructure improvements associated with the decommissioning of the development is anticipated to be negligible. As the Project is predominantly based offshore, approximately 80 km east of the coast from Peterhead, the impacts on either local business or infrastructure improvements from dismantling mooring systems, offshore substations and towing away WTGs are unlikely to be noticeable. The Offshore Export Cables in inshore areas and towards landfall may be removed, in consultation and agreement with the regulator at the time of decommissioning. It is assumed that the cable removal in inshore areas may use methods including pulling the cable out of the seabed using a grapnel, pulling an under-runner using a steel cable to push the electrical cable from the seabed, or jetting the seabed material (see **Chapter 5: Project Description**). These methods will cause seabed disturbance that is highly spatially and temporally limited. The impact of decommissioning on local infrastructure improvements is deemed to be of low magnitude, with a value of low local, so the resulting effect is assessed as **negligible**. No additional mitigation is required.

19.9.3.5 Impact on tourism

148. Decommissioning impacts relating to the disruption/reduced access for coastal tourism is expected to be similar to construction related impacts as the site is not visible from shore. The offshore substation will be dismantled, and all WTGs and associated substructures will be decoupled from their moorings and transported to a facility for processing for reuse, recycling and/or disposal. The decommissioning and dismantling of the substation is not anticipated to have any significant effects on coastal tourism.

149. The impact of decommissioning on marine tourism is deemed to be of low magnitude, with receptor value of high local, so the resulting effect is assessed as **minor adverse**. No additional mitigation is required.

19.9.3.6 Disturbance of Recreational Activities

150. Decommissioning impacts relating to the disruption/reduced access for coastal tourism and coastal recreational users are expected to be similar to construction related impacts. The offshore substation will be dismantled, and all WTGs and associated substructures will be decoupled from their moorings and transported to a facility for processing for reuse, recycling and/or disposal. The decommissioning and dismantling of the substation is not anticipated to have any significant effects on coastal tourism and recreation users. Impacts to recreational vessels are discussed in **Chapter 14: Shipping and Navigation**.
151. If the NorthConnect Parallel Landfall Export Cable Corridor option is chosen, there may be increased noise and turbidity affecting the nearby Buchan Head Lighthouse dive site whilst the export cable is being removed from the inshore area, as rock deposits providing cable protection may have to be removed from the cable as well as some trenching in areas where the cable is buried. This effect will be of low magnitude and highly temporally limited. As the Buchan Head Lighthouse site is not nationally renowned, and only dived by clubs in the surrounding Aberdeenshire region, there could be a low magnitude of impact, on a receptor of regional value, so the resulting effect is assessed as **minor adverse** and not significant.
152. Other coastal users involved in water activities near the shore such as SUP, swimming, surfing, windsurfing, kayaking, snorkelling are assessed as having high local value, with an impact magnitude of low due to changes being reversible and limited to the short term. The effect on these users is therefore assessed as **minor adverse** and not significant.
153. Taken together, effects on recreation assessed as **minor adverse** and not significant.

19.9.3.7 Decommissioning activities leading to additional steaming to alternative fishing grounds

154. As discussed in **Chapter 13: Commercial Fisheries**, the impact of additional steaming to alternative fishing grounds is non-significant, due to the limited extent of reduction in access to or exclusion from areas within the Windfarm Site or Offshore Export Cable Corridor during decommissioning activities. Therefore, the socioeconomic effect of increased steaming to fishing grounds is also assessed as **non-significant**.

19.10 Assessment of Cumulative Impacts

155. The impacts identified in this chapter are presented and assessed for potential to act cumulatively with other projects in **Table 19.20**.

Table 19.20 Potential Socioeconomics and Tourism Cumulative Impacts

Impact	Potential for cumulative impact	Data confidence	Rationale
Construction			
Direct Employment	Yes	High	Any planned renewable energy developments in the vicinity of the Project will require similarly skilled employees and may draw on the same workforce if construction time-periods overlap with the Project.
Supply chain impacts	Yes	Medium	Any planned renewable energy developments in the vicinity of the Project will require similar components and raw materials and may draw on the same supply chains if construction time-periods overlap with the Project.

Impact	Potential for cumulative impact	Data confidence	Rationale
Increase in demand for local private services/goods	Yes	Medium	Any planned renewable energy developments in the vicinity of the Project may operate out of Peterhead harbour and therefore impact local businesses and services in similar ways.
Interference with planned infrastructure improvements in the local area	No	High	Interference with planned infrastructure developments occurs at a highly localised scale and the impacts of the Project were deemed negligible.
Impact on recreational activities	Yes	High	Minor impacts of the Project on recreation, e.g. displacement of divers or recreational vessels may be exacerbated by similar impacts from other nearby projects.
Disturbance of recreational activities	No	Low	Construction impacts will be short term and temporary, and wind farm will be built in area historically used for O&G. Cumulative Impact Assessment (CIA) for recreational vessels is undertaken in Chapter 14: Shipping and Navigation
Operation			
Direct Employment	Yes	High	Any planned renewable energy developments in the vicinity of the Project will require similarly skilled employees and may draw on the same workforce if O&M time-periods overlap with the Project.
Supply chain impacts	Yes	Medium	Any planned renewable energy developments in the vicinity of the Project will require similar components and raw materials and may draw on the same supply chains if O&M time-periods overlap with the Project.
Increase in demand for local private services/goods	Yes	Medium	Any planned renewable energy developments in the vicinity of the Project may operate out of Peterhead harbour and therefore impact local businesses and services in similar ways.
Interference with planned infrastructure improvements in the local area	No	High	Interference with planned infrastructure developments occurs at a highly localised scale and the impacts of the Project were deemed negligible.
Impact on recreational activities	No	High	Impacts on recreational activities are associated with construction/decommissioning task e.g. cable burial
Disturbance of recreational activities	No	High	O&M activities will be limited, short term and temporary
Decommissioning			
Direct Employment	Yes	High	Any planned renewable energy developments in the vicinity of the Project will require similarly skilled employees and may draw on the same workforce if decommissioning time-periods overlap with the Project.
Supply chain impacts	Yes	Medium	Any planned renewable energy developments in the vicinity of the Project will require similar components and raw materials and may draw on the same supply chains if decommissioning time-periods overlap with the Project.
Increase in demand for local private services/goods	Yes	Medium	Any planned renewable energy developments in the vicinity of the Project may operate out of Peterhead harbour and therefore impact local businesses and services in similar ways.
Interference with planned infrastructure improvements in the local area	No	High	Interference with planned infrastructure developments occurs at a highly localised scale and the impacts of the Project were deemed negligible.

Impact	Potential for cumulative impact	Data confidence	Rationale
Impact on recreational activities	Yes	High	Minor impacts of this Project on recreation, e.g. displacement of divers or recreational vessels may be exacerbated by similar impacts from other nearby projects.
Disturbance of Recreational Activities	No	Low	Decommissioning impacts will be short term and temporary. CIA for recreational vessels is undertaken in Chapter 14: Shipping and Navigation

156. The potential cumulative effects for socioeconomics and tourism depend on the extent to which the Project and other relevant projects draw on a similar supply chain and labour markets within the Study Area. Based on this, the following factors have been considered in selecting the relevant projects for the cumulative assessment:

- For socioeconomic receptors, overlap in COM with the Project. Simultaneous activity may place competing demands on the supply chain, labour markets and services in the local Study Area, which can increase competition for a range of goods and services in the area. This increases the likelihood of these goods and services being sourced from outside the local Study Area. This in turn may have a cumulative impact on the demand for accommodation and local services.
- For coastal and offshore tourism and recreation, projects in proximity to the Landfall location and Landfall Export Cable Corridor could have a cumulative impact on water sports if the construction activity is simultaneous or continuous. For example, access to larger sections of coastline being restricted.

157. It is important to note that timing is a key factor in cumulative assessment in relation to socioeconomic receptors:

- If the construction phases for the Project and other developments are undertaken simultaneously, this could restrict the ability of the local work force and supply chains to extract the benefits from these multiple projects. This is because there is an upper ceiling on the capacity of the local work force and supply chain to provide services at any given time point; any excess goods and services that cannot be sourced locally will have to be procured from elsewhere. This means that whilst socioeconomic impacts of all projects would be positive, they are antagonistic when combined (total project benefits not equalling the sum of individual project benefits). There is also potential for competing demand, and more procurement from outside Scotland which would displace the economic positives, jobs GVA reduced compared to those predicted. Sharing operations and maintenance support with other nearby developments in the future could also streamline and reduce employment and GVA opportunities in the future.
- On the other hand, consecutive construction of projects may lead to the temporary beneficial construction impact being sustained for longer, potentially leading to subsequent projects being able to secure higher local benefits. If there are a number of consecutive projects taking place which are drawing on the same labour market and supply chains, this can contribute to growth in skills and capacity, increasing the confidence of businesses to make investments knowing there will be longer term demand for their products or services.

158. There are also uncertainties inherent to cumulative impact assessments on socioeconomics and tourism, which are as follows:

- The assessment needs to consider the ability of supply chain and labour markets to adapt to increased demand. There are external factors which may influence this, and it is difficult for the cumulative assessment to predict what the dynamics of supply chains might be.

- There are uncertainties in timings of cumulative developments, particularly those which are at earlier stages in the planning process. The assessment cannot say with confidence which projects will proceed. Even projects which have been consented may change their design or apply for variations in consent. The assessment draws on the information which is available to date, however, it is not known with confidence what the timings of all projects might be.
 - A critical driver of cumulative socioeconomic impact is the extent to which other projects are competing for the same local supply chains and workers as the Project or if the Project can benefit from the capacity and experience built from preceding projects.
159. Therefore, the schemes which are relevant to the cumulative assessment for socioeconomic and tourism receptors have been selected based on: 1) The demands their construction, operation and decommissioning are likely to place on the same supply chains and labour markets as the Project; and 2) The potential for negative impacts of their construction, operation and decommissioning on coastal recreation/tourism to combine with similar impacts of the Project. The projects which are scoped in for the cumulative assessment are displayed below (**Table 19.21**). It was not considered that any cumulative impacts would arise with the decommissioning of O&G facilities, and therefore, Decommissioning Plans have not been screened in.

Table 19.21 Summary of Projects considered for the CIA in Relation to the Topic

Project	Status	Development period	³ Distance from Green Volt Site (km)	Project definition	Project data Confidence	Included in CIA	Rationale
Acorn Carbon Capture and Storage Site	Under development	Section 36 Application submitted end of March 2022 for Peterhead Carbon Capture Power Station	Approx. 2 km north of the Offshore Development Area	Based at the St Fergus gas terminal in North East Scotland, Acorn CCS can repurpose existing gas pipelines to take CO ₂ directly to the Acorn CO ₂ Storage Site in the North Sea. The project is a designated European Project of Common Interest (PCI). The project received a CO ₂ storage licence from the Oil and Gas Authority in December 2018 (the first of its kind issued in the UK), with the project looking to enter operation in the mid-2020s.	High	Yes	Potential for construction activities for Acorn CCS to overlap temporally with the Project. It is unlikely that there will be any overlap or interaction between the two projects in terms of marine space.
MarramWind Floating Offshore Windfarm	Pre-Application	Early planning: recently secured ScotWind lease	Approx. 9 km north of the Offshore Development Area	Floating wind farm site located 75 km off the northeast coast of Scotland in water depths averaging 100 metres, the proposed MarramWind floating offshore windfarm could deliver up to 3 GW of power.	Low	No	Unlikely to progress prior to The Project, CIA to be carried out in MarramWind EIA should the project progress.
Salamander Floating Windfarm	Pre-Application	Lease option agreement to be applied for through the Offshore Wind Energy Innovation route in Q3/4 2022.	Approx. 36 km southwest of the Offshore Development Area	The Salamander project is a pre-commercial size project, up to 200 MW capacity, located off Peterhead in the East coast of Scotland. The project is the planning stage currently and is aiming to secure a CFD in 2025 if this is the route to market taken. The project is also looking at potential offtake agreements for hydrogen. Looking to begin construction in 2026 at the earliest. Salamander has signed a memorandum of understanding with ERM to utilise the Dolphyn electrolysis, desalination and hydrogen production concept for the project	Low	Yes	Also a floating wind project so similar employment/supply chain impacts. Potential for temporal overlap with all phases of Salamander's lifespan given the similar timespan for development between Salamander and the Project.
Muir Mhòr Floating Wind Farm	Pre-Application	Early planning: recently secured ScotWind lease	Approx. 38.5 km south of the Offshore Development Area	Floating wind farm site located 67 km off the northeast coast of Scotland, the proposed floating offshore windfarm could deliver up to 11 GW of power by 2030.	Low	No	Unlikely to progress prior to the Project, CIA to be carried out in this projects EIA should the project progress.

³ Shortest distance between the considered project and Green Volt – unless specified otherwise.

Project	Status	Development period	³ Distance from Green Volt Site (km)	Project definition	Project data Confidence	Included in CIA	Rationale
CampionWind Floating Offshore Windfarm	Pre-Application	Early planning: recently secured ScotWind lease	Approx. 45 km southeast of the Offshore Development Area	Floating wind farm site located 100 km off the northeast coast of Scotland in water depths averaging 77 metres, the proposed MarramWind floating offshore windfarm could deliver up to 2 GW of power.	Low	No	Unlikely to progress prior to the Project, CIA to be carried out in this projects EIA should the project progress.
Buchan Floating Offshore Windfarm	Pre-Application	Early planning: recently secured ScotWind lease	Approx. 49 km northwest of the Offshore Development Area	Floating offshore windfarm site off the northeast coast of Scotland with a proposed approximate capacity of 1 GW.	Low	No	Unlikely to progress prior to the Project, CIA to be carried out in this projects EIA should the project progress.
Hywind Scotland Pilot Park	Operational	Operational	Approx. 51.5 km southwest of the Offshore Development Area	A floating offshore pilot wind farm at Buchan Deep, approximately 25 km east of Peterhead on the east coast of Scotland. Operational since 2017, the site extends over 4 km ² area in water depths between 95 m and 120 m.	High	No	As construction on the site has now concluded, potential for cumulative effect with Hywind is minimal.
Broadshore Floating Offshore Windfarm	Pre-Application	In early planning: Falck Renewables and BlueFloat Energy were successful in the recent ScotWind licensing round in securing the seabed lease for the site.	Approx. 68 km northwest of the Offshore Development Area	One of three lease sites secured by Falck Renewables and BlueFloat Energy during the recent Scotwind leasing round, together all three sites could accommodate a total of approximately 3.0 GW of offshore wind capacity with the projects scheduled to be operational by the end of the decade, subject to securing consent, commercial arrangements and grid connections	Low	No	Unlikely to progress prior to the Project, CIA to be carried out in this projects EIA should the project progress.
Cluaran Deas Ear offshore windfarm	Pre-Application	In early planning: Project secured a lease for the site in the recent Scotwind leasing process.	Approx. 95 km south of the Offshore Development Area	Proposed fixed foundation offshore windfarm with a 1 GW generating capacity.	Low	No	Unlikely to progress prior to the Project, CIA to be carried out in Cluaran Deas Ear EIA should the project progress.

Project	Status	Development period	³ Distance from Green Volt Site (km)	Project definition	Project data Confidence	Included in CIA	Rationale
Caledonia Offshore Windfarm	Pre-Application	In early planning: Project secured a lease for the site in the recent Scotwind leasing process.	Approx. 97 km west of the Offshore Development Area	A planned fixed foundation windfarm to be located in the Moray Firth, the project has a proposed total capacity of 1,000 MW spread over an area of 440km ² .	Low	No	Unlikely to progress prior to the Project, CIA to be carried out in Caledonia OWF EIA should the project progress.
Aberdeen Offshore Windfarm	Operational	In operation / Pre-Application - Main array is operational and producing power, screening opinion request for hydrogen producing equipment submitted January 2022.	Approx. 97.5 km south of the Offshore Development Area	The European Offshore Wind Deployment Centre, otherwise known as Aberdeen Offshore Windfarm is located just off the coast of Aberdeen in Scotland. Operational since 2018. The project is now looking to demonstrate the feasibility of offshore hydrogen production by installing hydrogen generating equipment on an extended transition piece platform at one of the Aberdeen turbines. The hydrogen generating equipment would be connected to land via an 8" internal diameter (maximum) buried flowline, where the hydrogen would be stored for offtake.	High	No	Unlikely due to small spatial scale of the development and distance from the Project.
Stromar floating offshore windfarm	Pre-Application	In early planning: Falck Renewables, BlueFloat Energy and Orsted were successful in the recent ScotWind licensing round in securing the seabed lease for the site.	Approx. 99 km northwest of the Offshore Development Area	One of three lease sites secured by Falck Renewables and BlueFloat Energy during the recent Scotwind leasing round, together all three sites could accommodate a total of approximately 3.0 GW of offshore wind capacity with the projects scheduled to be operational by the end of the decade, subject to securing consent, commercial arrangements and grid connections.	Low	No	Unlikely to progress prior to the Project, CIA to be carried out in this projects EIA should the project progress.

Project	Status	Development period	³ Distance from Green Volt Site (km)	Project definition	Project data Confidence	Included in CIA	Rationale
Ossian floating offshore windfarm	Pre-Application	In early planning: Marubeni, SSE Renewables and CIP were successful in the recent ScotWind licensing round in securing the seabed lease for the site.	Approx. 101 km south of the Offshore Development Area	Proposed floating offshore windfarm with a potential total capacity of 2,600 MW.	Low	No	Unlikely to progress prior to the Project, CIA to be carried out in this projects EIA should the project progress.
Morven offshore windfarm	Pre-Application	In early planning: BP and EnBW were successful in the recent ScotWind licensing round in securing the seabed lease for the site.	Approx. 105 km south of the Offshore Development Area	Proposed fixed foundation offshore windfarm with a 2.9 GW generating capacity. The approximately 860 km ² lease area is located around 60km off the coast of Aberdeen.	Low	No	Unlikely to progress prior to the Project, CIA to be assessed in this projects EIA should the project progress.
Bellrock Floating Offshore Windfarm	Pre-Application	In early planning: Falck Renewables and BlueFloat Energy were successful in the recent ScotWind licensing round in securing the seabed lease for the site.	Approx. 107 km south of the Offshore Development Area	One of three lease sites secured by Falck Renewables and BlueFloat Energy during the recent Scotwind leasing round, together all three sites could accommodate a total of approximately 3.0 GW of offshore wind capacity with the projects scheduled to be operational by the end of the decade, subject to securing consent, commercial arrangements and grid connections	Low	No	Unlikely to progress prior to the Project, CIA to be assessed in this projects EIA should the project progress.
Kincardine Floating Offshore Windfarm	Operational	Operational - Site declared fully operational in October 2021.	Approx. 111 km southwest of the Offshore Development Area	The 50 MW Kincardine Floating Offshore Windfarm consists of five Vestas V164-9.5 MW and one V80-2 MW turbine, each installed on WindFloat® semi-submersible platforms designed by Principle Power.	High	No	As construction on the site has now concluded, potential for cumulative effect with the Kincardine Floating Offshore Windfarm is minimal.

Project	Status	Development period	³ Distance from Green Volt Site (km)	Project definition	Project data Confidence	Included in CIA	Rationale
Moray East Offshore Windfarm	Operational	Operational - The final turbine for the site was installed in September 2021, with power first being generated from the site in June 2021.	Approx. 113 km west of the Offshore Development Area	The 950 MW Moray East Offshore Windfarm is located in the Outer Moray Firth, 22 km off the coast of Scotland. Operational since 2021	High	No	As construction on the site has now concluded, potential for cumulative effect with Moray East is minimal.
Cluaran Ear-Thuath floating offshore windfarm	Pre-Application	In early planning: Project secured a lease for the site in the recent Scotwind leasing process.	Approx. 122 km northwest of the Offshore Development Area	Proposed floating offshore windfarm with a 1 GW generating capacity.	Low	No	Unlikely to progress prior to the Project, CIA to be assessed in the projects EIA should the project progress.
Moray West Offshore Windfarm	Pre-construction	Post-consent - Consents for the project were secured in 2019, currently awaiting results of the 2022 CFD round. Construction is yet to begin.	Approx. 128 km west of the Offshore Development Area	The 900MW Moray West Offshore Windfarm is located in the Outer Moray Firth, off the coast of Scotland. Construction expected to begin in 2022.	High	Yes	Potential for Moray West construction to overlap with the Project, resulting potential for cumulative regional socioeconomic impacts generated by both projects.
Beatrice offshore windfarm	Operational	Operational - Site declared fully operational in June 2019.	Approx. 130 km west of the Offshore Development Area	Located approximately 13 km from the Caithness coast, operational since 2019.	High	No	As construction on the site has now concluded, potential for cumulative effect with Beatrice is minimal.

Project	Status	Development period	³ Distance from Green Volt Site (km)	Project definition	Project data Confidence	Included in CIA	Rationale
Seagreen Offshore Windfarm	Operational	Under construction - The first turbine within the site was installed in December 2021. A screening request was submitted in January 2022 to MS-LOT in support of a potential application to vary the existing Seagreen consents to increase the height of the remaining consented, but not constructed, 36 turbines.	Approx. 140 km southwest of the Offshore Development Area	Located 27 km off the coast of Angus, Seagreen Offshore Windfarm is under construction installing 114 turbines. First power was achieved in August 2022 and it is anticipated to be fully operational in Q2 2023.	High	No	Potential for Seagreen construction to overlap with the Project, but due to distance from the Project, potential for cumulative marine socioeconomic and tourism impacts is negligible.
Berwick Bank Offshore Windfarm	Pre-Application	Scoping report submitted to MS-LOT in October 2021.	Approx. 140 km southwest of the Offshore Development Area.	Berwick Bank, located in the outer Firth of Forth (40 km offshore), has the potential to deliver up to 4.1 GW of renewable energy.	Medium		

Project	Status	Development period	³ Distance from Green Volt Site (km)	Project definition	Project data Confidence	Included in CIA	Rationale
Inch Cape Offshore Windfarm	Operational	Consented - The project received a variation on their Section 36 consent to remove the 1 GW maximum capacity of the project in August 2021.	Approx. 164 km southwest of the Offshore Development Area	The Inch Cape Offshore Windfarm, currently in late stage development	High	No	Potential for Inch Cape construction to overlap with the Project, but due to distance from the Project, potential for cumulative marine socioeconomic and tourism impacts is negligible.
Neart na Gaoithe (NNG) Offshore Windfarm	Operational	Under construction - Construction began in 2020 but has been impacted by the Covid-19 pandemic, first turbines will be operational in time for the wind farm to begin generating power in 2023, with completion scheduled for 2024.	Approx. 191 km southwest of the Offshore Development Area.	The Neart na Gaoithe Offshore Windfarm will be located 15.5 km off the Fife coast and covers an area of approximately 105 km ² .	High	No	Potential for Neart na Gaoithe construction to overlap with the Project, but due to distance from the Project, potential for cumulative marine socioeconomic and tourism impacts is negligible.

¹ Shortest distance between the considered project and Green Volt – unless specified otherwise.

19.10.1 Cumulative Construction Impacts

19.10.1.1 Direct employment and supply chain impacts

160. Cumulative impacts on the labour market and supply chain demands in the local Study Area and Scotland will be driven by simultaneous construction activity of offshore wind farms. Projects with ongoing operation and maintenance activities at the time of construction of the Project will be contributing to the demand for workers, but to a much lesser extent.
161. All but two of the offshore developments identified in **Table 19.21** have construction periods that are unlikely to overlap with that of the Project, as they are all either already operational, or in very early phases of planning (having recently gained ScotWind leases), or are located at a great distance. The exceptions are:
 - Salamander Floating Windfarm
 - Acorn Carbon Capture and Storage Site (ACCSS)
162. These projects may have a construction period overlapping with the Project. This could cause overlap in the types of skills and services which are required, for example, the use of vessels, ports and logistics, professional and technical services will have parallels between the two types of projects.
163. There are a number of scenarios of how the cumulative impacts of construction for Salamander Floating Windfarm, ACCSS and the Project may occur. If all projects choose to use the same vessels and ports, there may be a limitation on the capacity for local and regional businesses to meet this demand. This may in turn restrict the cumulative socioeconomic benefits for the region.
164. Alternatively, these projects may opt to utilise different ports, different work vessels and different suppliers, in which case the cumulative socioeconomic benefits of the projects will be maximised for the region. Under this scenario, the simultaneous construction phases may stimulate investment, thereby increasing workforce and supply chain capacity in the region as a result.
165. Confidence in predictions of which of the above scenarios is more likely to occur cannot be achieved at this stage, particularly as the planned port usage and procurement strategy for the other projects is unknown. The Applicant will engage Salamander and ACCSS when planning construction, so the projects are co-ordinated and do not adversely affect each other. Under the more optimistic scenario, a cumulative impact of high magnitude, giving an effect significance of major beneficial can be expected, whilst under the pessimistic scenario, the cumulative additive impact of the projects will be of low magnitude, giving an effect significance of **minor beneficial**. No additional mitigation is required.

19.10.1.2 Increase in demand for local private services/goods

166. The cumulative impact in demand on local goods and services will be dependent on the magnitude of influx of non-resident workers from elsewhere into the local area. This is in turn influenced by both the timing of key activities between all relevant projects and the balance between workers recruited locally and from elsewhere.
167. If simultaneous construction activities result in capacity constraints in the local labour market, then the potential for workers being moved in from elsewhere is increased. As noted in **Section 19.10.1.1**, the only project with potential for overlapping construction in terms of time and skills/supply chain required is the Salamander Floating Windfarm. This may result in more workers being drawn in from outside of the local area. Whilst there is a likelihood of this occurring if construction phases overlap, the scale of worker influx from elsewhere cannot be reliably estimated, as there are a wide range of extraneous variables that will affect the outcome.

168. Overall, whilst difficult to reliably predict, the combined impact of the Salamander Floating Windfarm and the Project on demand for local private services/goods is assessed to be of negligible magnitude, with a receptor value of high local, so the effect is assessed as **minor adverse** - non-significant. No additional mitigation is required.

19.10.1.3 Interference with planned infrastructure improvements in the local area

169. Potential negative impacts on existing businesses and the local Boddam, Buchanhaven and Peterhead populations during construction and installation due to short term local disruption around offshore construction works will be very localised and restricted to only certain areas in the vicinity of Peterhead. The Applicant is not aware of any other construction projects that will be taking place in the vicinity of Peterhead at the same time as the Project and therefore cumulative impacts are not expected. However, should this situation change, then the Applicant will ensure that measures are in place to avoid any significant cumulative impacts on existing business and the local population.
170. Overall, cumulative impacts on planned infrastructure improvements in the local area are deemed to be of negligible magnitude and low local value, giving rise to a **negligible** effect. No additional mitigation is required.

19.10.1.4 Impact on marine tourism

171. The current expectations on locations and timing of projects show no overlapping construction activity in the Landfall Area or Windfarm Site at the time of construction of the Project.
172. Therefore, it is expected that the cumulative impacts would be no different to the results of the impact assessment of the Project individually. With no concurrent construction activity, the in-combination and the additive cumulative impacts of the Project are equivalent.
173. The expected magnitude of impact on coastal and offshore recreation is negligible, with a receptor value of regional. The cumulative effect is therefore considered to be **negligible** - non-significant. No additional mitigation is required.

19.10.2 Cumulative Operation Impacts

19.10.2.1 Direct employment and supply chain impacts

174. operation and maintenance is a long-term activity expected to take place over decades. This would allow for any necessary supply-side adjustments to increase capacity in the supply chain and the labour market. Therefore, overlapping operation and maintenance phases for cumulative projects can be seen largely as beneficial as they encourage supply chain development without stressing capacity.
175. As with the construction phase, some projects that are not yet operating are also subject to uncertainties around supply chain sourcing and port selection, and these factors will in turn affect the magnitude of any cumulative impacts.
176. The Hywind Scotland Pilot Park is currently operational, with operation and maintenance activity running out of Peterhead, as is also in consideration for the Project. Given their planned locations, the Salamander Floating Windfarm and ACCSS will also likely use Peterhead as their base for operation and maintenance.
177. The individual impacts of offshore wind farm developments on employment and supply chains are much greater in construction than operation phases, so the combined operation and maintenance of the three aforementioned projects is not expected to cause issues with worker or supply chain capacity locally. The increase in demand for operation and maintenance services regionally is expected to provide confidence for local business to invest in increased capacity and skills training. There is also potential for Peterhead Port to develop as a centre for floating wind excellence in

Scotland, as its capacity to service multiple offshore projects will position it well to service future projects.

178. The cumulative impact of is considered to be of medium magnitude, with an effect significance of **moderate beneficial**. No additional mitigation is required.

19.10.3 Cumulative Decommissioning Effects

179. The same uncertainties apply during decommissioning phase assessment as outlined in the individual assessment of the Project impacts. In addition, there are the uncertainties associated with the cumulative assessment which make it challenging to provide a meaningful assessment of impacts and determine impact significance.
180. The decommissioning activities will likely draw on similar services and skills as the construction phase. For this reason, the cumulative decommissioning phase effects (impactson employment, supply chain, coastal and offshore recreation and tourism) would be similar to those assessed for the construction phase. No additional mitigation is required.

19.11 Transboundary Impacts

181. No transboundary impacts were identified in relation to socioeconomics and tourism receptors.

19.12 Inter-relationships

182. The inter-relationships between topics covered in this chapter and in other chapters within this EIA are described in **Table 19.22**.

Table 19.22 Socioeconomics, Tourism and Recreation inter-relationships

Topic and description	Related Chapter	Where addressed in this Chapter
Impacts on ability of vessels to transit through the Windfarm Site	Chapter 14: Shipping and Navigation Chapter 19: Infrastructure and Other Marine Users Chapter 13: Commercial Fisheries	Sections 19.9.1.6, 19.9.1.7, 19.9.2.5, 19.9.2.7, 19.9.3.6, 19.9.3.7
Impacts on commercial fishermen through change in access Windfarm Site	Chapter 13: Commercial Fisheries	Sections 19.9.1.7, 19.9.2.7, 19.9.3.7
Impact on recreational marine users	Chapter 14: Shipping and Navigation	Sections 19.9.1.6, 19.9.2.5, 19.9.3.6.

19.13 Summary

183. During construction there is a potential for short-term direct and indirect positive impacts on the local and regional economies. However, there may be a low level of negative effects on tourism due to short-term impacts caused by installation of the inshore sections of the marine High Voltage Direct Current (HVDC) cables, although these effects are non-significant in EIA terms.
184. During operation and decommissioning, the Project will have minor, but non-significant positive socioeconomic benefits at a local and regional level. Negative effects on tourism during operation and decommissioning are negligible.
185. **Table 19.23** summarises the socioeconomic, tourism and recreation impacts of the Project, both before and after mitigation.

Table 19.23 Potential Impacts Identified for Socioeconomics, Tourism and Recreation Receptors

Potential Impact	Receptor	Value/ Sensitivity	Magnitude of Impact	Significance of Effect	Mitigation	Residual Effect
Construction						
Direct Employment	Construction employment	N/A ⁴	High Beneficial	Major Beneficial	None required	Major Beneficial - Significant
Supply chain impacts	Indirect/induced GVA	National	Medium Beneficial	Moderate Beneficial	None required	Moderate Beneficial - Significant
Increase in demand for local private services/goods	Local services and businesses	High Local	Low Beneficial	Minor Beneficial	None required	Minor Beneficial – not significant
Interference with planned infrastructure improvements in the local area	Local infrastructure improvement projects	Low Local	Negligible	Negligible	None required	Negligible – not significant
Impact on recreational activities	Local recreation users, both in terms of water sports and coastal path users	High Local - Regional	Low	Minor Adverse	None required	Minor Adverse – not significant
Operation						
Direct Employment	Operation employment	N/A ²	Low Beneficial	Minor Beneficial	None required	Minor Beneficial – not significant
Supply chain impacts	Indirect/induced GVA	Regional	Low	Negligible	None required	Negligible – not significant
Increase in demand for local private services/goods	Local services and businesses	High Local	Low	Negligible	None required	Negligible – not significant
Interference with planned infrastructure improvements in the local area	Local infrastructure improvement projects	Low Local	Negligible	Negligible	None required	Negligible – not significant
Impact on recreational activities	Local recreation users, both in terms of water sports and coastal path users	High Local - Regional	Low	Minor	None required	Minor – not significant

⁴ See Section 19.5.1.2 for explanation

Potential Impact	Receptor	Value/ Sensitivity	Magnitude of Impact	Significance of Effect	Mitigation	Residual Effect
Decommissioning						
Direct Employment	Decommissioning employment	N/A	Low Beneficial	Minor Beneficial	None required	Minor Beneficial – not significant
Supply chain impacts	Indirect/induced GVA	Regional	Low Beneficial	Negligible	None required	Negligible – not significant
Increase in demand for local private services/goods	Local services and businesses	High Local	Low Beneficial	Negligible	None required	Negligible – not significant
Interference with planned infrastructure improvements in the local area	Local infrastructure improvement projects	Low Local	Negligible	Negligible	None required	Negligible – not significant
Impact on recreational activities	Local recreation users, both in terms of water sports and coastal path users	Regional	Negligible	Negligible	None required	Negligible – not significant
Cumulative						
Construction: Direct Employment and Supply Chain Impacts	Construction employment	N/A	Low Beneficial	Minor Beneficial	None required	Minor Beneficial – not significant
Construction: Increase in demand for local private services/goods	Local services and businesses	High Local	Negligible	Minor Beneficial	None required	Minor Beneficial – not significant
Construction: Impact on recreational activities	Local recreation users, both in terms of water sports and coastal path users	Low Local	Negligible	Negligible	None required	Negligible – not significant
Operation: Direct Employment and Supply Chain Impacts	Operation employment	N/A	Medium Beneficial	Moderate Beneficial	None required	Moderate Beneficial - significant
Decommissioning	As for cumulative construction					
Transboundary						
None identified						

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