



Spiorad na Mara Offshore Wind Farm

Offshore Project

Environmental Impact Assessment Report

Chapter 24: Summary of Likely Significant Residual Effects, Volume 2a

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24 OFFSHORE SUMMARY OF LIKELY SIGNIFICANT RESIDUAL EFFECTS

24.1 INTRODUCTION

24.1.1.1 This chapter presents the summary of residual effects tables taken from relevant technical assessments **Chapters 6: Socio-Economics, Volume 2a to Chapter 23: Combined Effects Assessment, Volume 2a** of the Environmental Impact Assessment Report (EIAR) where environmental effects of the Offshore Project have been assessed.

24.1.1.2 **Chapters 6, Volume 2a to Chapter 23, Volume 2a** of the EIAR assess the environmental effects of the construction, operation and maintenance, and decommissioning phases of the Offshore Project, following the implementation of mitigation measures included in the design of the Offshore Project. These mitigation measures are set out in **Chapter 25: Summary of Offshore Mitigation / Statement of Offshore EIA Commitments, Volume 2a**.

24.1.1.3 The summary of effects presented in **Table 24.1 to Table 24.17** includes the following information:

- Activity and impact;
- Magnitude of impact/change;
- Receptor sensitivity or value;
- A summary of the relevant mitigation measures;
- Assessment of residual effects (significance).

24.1.1.4 The summary of residual effects tables are as follows:

- **Chapter 6, Socio-Economics, Volume 2a - Table 24.1;**
- **Chapter 7: Climate Resilience, Volume 2a – Table 24.2**
- **Chapter 8: Climate Greenhouse Gases, Volume 2a – Table 24.3**
- **Chapter 9: Physical and Coastal Processes, Volume 2a – Table 24.4**
- **Chapter 10: Marine Sediment and Water Quality, Volume 2a - Table 24.5**
- **Chapter 11: Benthic and Intertidal Ecology, Volume 2a - Table 24.6**
- **Chapter 12: Fish Ecology, Volume 2a - Table 24.7**
- **Chapter 13: Marine Mammals, Volume 2a - Table 24.8**
- **Chapter 14: Marine and Nearshore Ornithology, Volume 2a - Table 24.9**
- **Chapter 15: Offshore Archaeology and Cultural Heritage , Volume 2a - Table 24.10;**
- **Chapter 16: Shipping and Navigation, Volume 2a - Table 24.11**
- **Chapter 17: Military and Civil Aviation, Volume 2a - Table 24.12**
- **Chapter 18: Seascape, Landscape, and Visual Impact Assessment, Volume 2a - Table 24.13**
- **Chapter 19: Offshore Airborne Noise, Volume 2a - Table 24.14;**
- **Chapter 20: Other Sea Users and Recreation, Volume 2a - Table 24.15;**

- **Chapter 21: Commercial Fisheries, Volume 2a - Table 24.16**
- **Chapter 22: Offshore Human Health, Volume 2a - Table 24.17**
- **Chapter 23, Combined Effects Assessment, Volume 2a** (see Section 24.19)

24.2 CHAPTER 6: SOCIO-ECONOMICS

Table 24.1: Summary of assessment of residual effects for Socio-Economics

Activity and Impact	Receptor	Magnitude of Impact	Receptor and Sensitivity or Value	Embedded Mitigation Measures	Significance of Effect (Significance)	Further Environmental Mitigation	Significance of Residual Effect (Significance)
Construction							
Employment effects	Labour market (Western Isles)	Low	Medium	M048; M049	Minor beneficial (not significant)	N/A	Minor beneficial (not significant)
	Labour market (Scotland/ <i>Alba</i>)	Negligible	Low	M048; M049	Negligible (not significant)	N/A	Negligible (not significant)
GVA effects	Economy (Western Isles)	Low	Medium	M048; M049	Minor beneficial (not significant)	N/A	Minor beneficial (not significant)
	Economy (Scotland/ <i>Alba</i>)	Negligible	Low	M048; M049	Negligible (not significant)	N/A	Negligible (not significant)
Knock-on socio-economic effects for the wider economy and for employment in other key sectors: tourism	Tourism sector (West Side SSA)	Low	Medium	M012; M019; M037; M041; M042	Minor adverse (not significant)	N/A	Minor adverse (not significant)
	Tourism sector (Stornoway SSA)	Low	Medium	M012; M019; M037; M041; M042	Minor adverse (not significant)	N/A	Minor adverse (not significant)
	Tourism sector (Lewis and Harris/ <i>Leòdhas agus Na Hearadh</i>)	Low	Medium	M012; M019; M037; M042; M042	Minor adverse (not significant)	N/A	Minor adverse (not significant)
Knock-on socio-economic effects for the wider economy and for employment in other key sectors: fisheries, aquaculture and fish/shellfish processing	Fishing, aquaculture and fish/shellfish processing sector (West Side SSA)	Low	High	M011; M012; M015; M019; M022; M024; M037; M042	Minor adverse (not significant)	N/A	Minor adverse (not significant)
	Fishing, aquaculture and fish/shellfish processing sector (Stornoway SSA)	Low	High	M011; M012; M015; M019; M022; M024; M037; M042	Minor adverse (not significant)	N/A	Minor adverse (not significant)
	Fishing, aquaculture and fish/shellfish processing sector (Lewis and Harris/ <i>Leòdhas agus Na Hearadh</i>)	Low	High	M011; M012; M015; M019; M022; M024; M037; M042	Minor adverse (not significant)	N/A	Minor adverse (not significant)
Knock-on socio-economic effects for the wider economy and for employment in other key sectors transport and storage	Transport and storage sector (West Side SSA)	Low	Medium	M011; M012; M015; M019; M022; M024; M037; M041; M042	Minor adverse (not significant)	N/A	Minor adverse (not significant)
	Transport and storage sector (Stornoway SSA)	Low	Medium	M011; M012; M015; M019; M022; M024; M037; M042; M042	Minor adverse (not significant)	N/A	Minor adverse (not significant)

Activity and Impact	Receptor	Magnitude of Impact	Receptor and Sensitivity or Value	Embedded Mitigation Measures	Significance of Effect (Significance)	Further Environmental Mitigation	Significance of Residual Effect (Significance)
	Transport and storage sector (Lewis and Harris/ <i>Leòdhas agus Na Hearadh</i>)	Low	Medium	M011; M012; M015; M019; M022; M024; M037; M041; M042	Minor adverse (not significant)	N/A	Minor adverse (not significant)
Temporary changes in demographics	Local resident population (Stornoway SSA)	Low	Medium	M041	Minor adverse (not significant)	N/A	Minor adverse (not significant)
	Local resident population (Lewis and Harris/ <i>Leòdhas agus Na Hearadh</i>)	Low	Medium	M041	Minor adverse (not significant)	N/A	Minor adverse (not significant)
Increased demand for services: housing availability	Housing market; Local resident population (Stornoway SSA)	Negligible	High	M041	Negligible (not significant)	N/A	Negligible (not significant)
	Housing market; Local resident population (Lewis and Harris/ <i>Leòdhas agus Na Hearadh</i>)	Negligible	High	M041	Negligible (not significant)	N/A	Negligible (not significant)
Increased demand for services: community services and infrastructure	Community services and infrastructure; Local resident population (Stornoway SSA)	Low	Medium	M041	Minor adverse (not significant)	N/A	Minor adverse (not significant)
	Community services and infrastructure; Local resident population (Lewis and Harris/ <i>Leòdhas agus Na Hearadh</i>)	Low	Medium	M041	Minor adverse (not significant)	N/A	Minor adverse (not significant)
Increased demand for services: availability of transport	Transport infrastructure; Local resident population (Lewis and Harris/ <i>Leòdhas agus Na Hearadh</i>)	Low	High	M041; M042	Minor adverse (not significant)	N/A	Minor adverse (not significant)
Effects on culture and identity	Local resident population (West Side SSA)	Low	High	M042; M044; M045	Minor adverse (not significant)	N/A	Minor adverse (not significant)
	Local resident population (Stornoway SSA)	Low	High	M042; M044; M045	Minor adverse (not significant)	N/A	Minor adverse (not significant)

Activity and Impact	Receptor	Magnitude of Impact	Receptor and Sensitivity or Value	Embedded Mitigation Measures	Significance of Effect (Significance)	Further Environmental Mitigation	Significance of Residual Effect (Significance)
	Local resident population (Lewis and Harris/ <i>Leòdhas agus Na Hearadh</i>)	Low	High	M042; M044; M045	Minor adverse (not significant)	N/A	Minor adverse (not significant)
Operation and maintenance							
Employment effects	Labour market (Western Isles)	Medium	Labour market, medium	M048; M049	Moderate beneficial (significant)	N/A	Moderate beneficial (significant)
	Labour market (Scotland/ <i>Alba</i>)	Negligible	Labour market, low	M048; M049	Negligible (not significant)	N/A	Negligible (not significant)
GVA effects	Economy (Western Isles)	High	Economy, medium	M048; M049	Minor beneficial (not significant)	N/A	Minor beneficial (not significant)
	Economy (Scotland/ <i>Alba</i>)	Negligible	Economy, low	M048; M049	Negligible (not significant)	N/A	Negligible (not significant)
Knock-on socio-economic effects for the wider economy and for employment in other key sectors: tourism	Tourism sector (West Side SSA)	Medium	Tourism sector, medium	M037	Moderate adverse (significant)	A0004	Minor adverse (not significant)
	Tourism sector (Stornoway SSA)	Low	Tourism sector, medium	M037	Minor adverse (not significant)	N/A	Minor adverse (not significant)
	Tourism sector (Lewis and Harris/ <i>Leòdhas agus Na Hearadh</i>)	Low	Tourism sector, medium	M037	Minor adverse (not significant)	N/A	Minor adverse (not significant)
Knock-on socio-economic effects for the wider economy and for employment in other key sectors: fisheries, aquaculture and fish/shellfish processing	Fishing, aquaculture and fish/shellfish processing sector (West Side SSA)	Low	Fishing, aquaculture and fish/shellfish processing sector, high	M037; M022; M024	Minor adverse (not significant)	N/A	Minor adverse (not significant)
	Fishing, aquaculture and fish/shellfish processing sector (Stornoway SSA)	Low	Fishing, aquaculture and fish/shellfish processing sector, high	M037; M022; M024	Minor adverse (not significant)	N/A	Minor adverse (not significant)
	Fishing, aquaculture and fish/shellfish processing sector (Lewis and Harris/ <i>Leòdhas agus Na Hearadh</i>)	Low	Fishing, aquaculture and fish/shellfish processing sector, high	M037; M022; M024	Minor adverse (not significant)	N/A	Minor adverse (not significant)
Knock-on socio-economic effects for the wider economy and for employment in other key sectors: transport and storage	Transport and storage sector (Stornoway SSA)	Low	Transport and storage sector, medium	M037; M022; M024	Minor adverse (not significant)	N/A	Minor adverse (not significant)
	Transport and storage sector (Lewis and Harris/ <i>Leòdhas agus Na Hearadh</i>)	Low	Transport and storage sector, medium	M012; M019; M022; M024	Minor adverse (not significant)	N/A	Minor adverse (not significant)
Permanent changes in demographics	Local resident population (Lewis and Harris/ <i>Leòdhas agus Na Hearadh</i>)	Low	Local resident population, medium	N/A	Minor beneficial (not significant)	N/A	Minor beneficial (not significant)

Activity and Impact	Receptor	Magnitude of Impact	Receptor and Sensitivity or Value	Embedded Mitigation Measures	Significance of Effect (Significance)	Further Environmental Mitigation	Significance of Residual Effect (Significance)
Increased demand for services: housing availability	Housing market; Local resident population (Lewis and Harris/ <i>Leòdhas agus Na Hearadh</i>)	Low	Local resident population, high	N/A	Minor adverse (not significant)	N/A	Minor adverse (not significant)
Increased demand for services: community services and infrastructure	Community services and infrastructure; Local resident population (Lewis and Harris/ <i>Leòdhas agus Na Hearadh</i>)	Low	Local resident population, medium	N/A	Minor adverse (not significant)	N/A	Minor adverse (not significant)
Increased demand for services: availability of transport	Transport infrastructure; Local resident population (Lewis and Harris/ <i>Leòdhas agus Na Hearadh</i>)	Negligible	Local resident population, high	N/A	Negligible (not significant)	N/A	Negligible (not significant)
Effects on culture and identity	Local resident population (West Side SSA)	Medium	Local resident population, high	M044; M045	Minor adverse (not significant)	N/A	Minor adverse (not significant)
	Local resident population (Lewis and Harris/ <i>Leòdhas agus Na Hearadh</i>)	Low	Local resident population, high	M044; M045	Minor adverse (not significant)	N/A	Minor adverse (not significant)
Decommissioning							
Employment effects	Labour market (Western Isles)	Low	Labour market, Medium	N/A	Minor beneficial (not significant)	N/A	Minor beneficial (not significant)
	Labour market (Scotland/ <i>Alba</i>)	Negligible	Labour market, Low	N/A	Negligible (not significant)	N/A	Negligible (not significant)
GVA effects	Economy (Western Isles)	Low	Economy, Medium	N/A	Minor beneficial (not significant)	N/A	Minor beneficial (not significant)
	Economy (Scotland/ <i>Alba</i>)	Negligible	Economy, Low	N/A	Negligible (not significant)	N/A	Negligible (not significant)
Knock-on socio-economic effects for the wider economy and for employment in other key sectors: tourism	Tourism sector (West Side SSA)	Low	Tourism sector, Medium	M020	Minor adverse (not significant)	N/A	Minor adverse (not significant)
	Tourism sector (Stornoway SSA)	Low	Tourism sector, Medium	M020	Minor adverse (not significant)	N/A	Minor adverse (not significant)
	Tourism sector (Lewis and Harris/ <i>Leòdhas agus Na Hearadh</i>)	Low	Tourism sector, Medium	M020	Minor adverse (not significant)	N/A	Minor adverse (not significant)
Knock-on socio-economic effects for the wider economy and for employment in other key sectors:	Fishing, aquaculture and fish/shellfish processing sector (West Side SSA)	Low	Fishing, aquaculture and fish/shellfish	M020	Minor adverse (not significant)	N/A	Minor adverse (not significant)

Activity and Impact	Receptor	Magnitude of Impact	Receptor and Sensitivity or Value	Embedded Mitigation Measures	Significance of Effect (Significance)	Further Environmental Mitigation	Significance of Residual Effect (Significance)
fisheries, aquaculture and fish/shellfish processing			processing sector, High				
	Fishing, aquaculture and fish/shellfish processing sector (Stornoway SSA)	Low	Fishing, aquaculture and fish/shellfish processing sector, High	M020	Minor adverse (not significant)	N/A	Minor adverse (not significant)
	Fishing, aquaculture and fish/shellfish processing sector (Lewis and Harris/Leòdhas agus Na Hearadh)	Low	Fishing, aquaculture and fish/shellfish processing sector, High	M020	Minor adverse (not significant)	N/A	Minor adverse (not significant)
Knock-on socio-economic effects for the wider economy and for employment in other key sectors transport and storage	Transport and storage sector (West Side SSA)	Low	Transport and storage sector, Medium	M020	Minor adverse (not significant)	N/A	Minor adverse (not significant)
	Transport and storage sector (Stornoway SSA)	Low	Transport and storage sector, Medium	M020	Minor adverse (not significant)	N/A	Minor adverse (not significant)
	Transport and storage sector (Lewis and Harris/Leòdhas agus Na Hearadh)	Low	Transport and storage sector, Medium	M020	Minor adverse (not significant)	N/A	Minor adverse (not significant)
Temporary changes in demographics	Local resident population (Stornoway SSA)	Low	Local resident population, Medium	M020	Minor adverse (not significant)	N/A	Minor adverse (not significant)
	Local resident population (Lewis and Harris/Leòdhas agus Na Hearadh)	Low	Local resident population, Medium	M020	Minor adverse (not significant)	N/A	Minor adverse (not significant)
Increased demand for services: housing availability	Housing market; Local resident population (Stornoway SSA)	Negligible	Local resident population, High	M020	Negligible (not significant)	N/A	Negligible (not significant)
	Housing market; Local resident population (Lewis and Harris/Leòdhas agus Na Hearadh)	Negligible	Local resident population, High	M020	Negligible (not significant)	N/A	Negligible (not significant)
Increased demand for services: community services and infrastructure	Community services and infrastructure; Local resident population (Stornoway SSA)	Low	Local resident population, Medium	M020	Minor adverse (not significant)	N/A	Minor adverse (not significant)
	Community services and infrastructure;	Low	Local resident population, Medium	M020	Minor adverse (not significant)	N/A	Minor adverse (not significant)

Activity and Impact	Receptor	Magnitude of Impact	Receptor and Sensitivity or Value	Embedded Mitigation Measures	Significance of Effect (Significance)	Further Environmental Mitigation	Significance of Residual Effect (Significance)
	Local resident population (Lewis and Harris/ <i>Leòdhas agus Na Hearadh</i>)						
Increased demand for services: availability of transport	Transport infrastructure; Local resident population (Lewis and Harris/ <i>Leòdhas agus Na Hearadh</i>)	Low	Local resident population, High	M020	Minor adverse (not significant)	N/A	Minor adverse (not significant)
Effects on culture and identity	Local resident population (West Side SSA)	Low	Local resident population, High	M020	Minor adverse (not significant)	N/A	Minor adverse (not significant)
	Local resident population (Stornoway SSA)	Low	Local resident population, High	M020	Minor adverse (not significant)	N/A	Minor adverse (not significant)
	Local resident population (Lewis and Harris/ <i>Leòdhas agus Na Hearadh</i>)	Low	Local resident population, High	M020	Minor adverse (not significant)	N/A	Minor adverse (not significant)

24.3 CHAPTER 7: CLIMATE RESILIENCE

Table 24.2: Summary of assessment of residual effects for Climate Resilience

Activity and impact	Receptor	Likelihood	Consequence	Embedded mitigation measures	Significance of effect (significance)	Further environmental mitigation	Significance of residual effect (significance)
Construction							
Disruption to construction programme due to storm damage or high winds delaying works	Construction site, materials and equipment	Medium	Minor adverse	M019 M051	Not Significant	N/A	Not Significant
Damage to plant, equipment or materials from high winds	Construction site, materials and equipment	Medium	Minor adverse	M019 M051	Not Significant	N/A	Not Significant
Unsafe working conditions due to high winds and storms	Construction workers	Medium	Minor adverse	M019 M051 M052	Not Significant	N/A	Not Significant
Operation and maintenance							
Destabilisation or degradation of turbine mechanical systems, facilities and structures due to increased frequency and intensity of storm events and wave heights.	Offshore WTG array (including scenario for OSP)	Low	Moderate adverse	M025 M052	Not Significant	N/A	Not Significant
Reduced operational performance from turbines due to high winds.	Offshore WTG array (including scenario for OSP)	Medium	Negligible	M025 M052	Not Significant	N/A	Not Significant
Increased rate of maintenance or repair works due to increased frequency and intensity of storm events and wave heights.	Offshore WTG array (including scenario for OSP)	Medium	Minor adverse	M025 M052	Not Significant	N/A	Not Significant
Thunderstorms and/or torrential rainstorms increasing erosion of the blade leading edge due to increased frequency and intensity of storm events and wave heights.	Offshore WTG array (including scenario for OSP)	Medium	Minor adverse	M025 M052	Not Significant	N/A	Not Significant
Increased rate of corrosion or deterioration of array foundations due to ocean acidification.	Offshore WTG array (including scenario for OSP)	Low	Minor adverse	M025 M052	Not Significant	N/A	Not Significant
Damage to blades from high waves or storm surges as the distance between sea level and blades is reduced.	Offshore WTG array (including scenario for OSP)	Low	Moderate adverse	M025 M052	Not Significant	N/A	Not Significant
Corrosion-resistant areas of turbine foundations exposed to saline conditions due to sea level rise.	Offshore WTG array (including scenario for OSP)	Low	Minor adverse	M025 M052	Not Significant	N/A	Not Significant

Activity and impact	Receptor	Likelihood	Consequence	Embedded mitigation measures	Significance of effect (significance)	Further environmental mitigation	Significance of residual effect (significance)
Loading and sediment transport across seabed leading to loss of integrity of foundations and cabling systems from scour and exposure due to increased frequency and intensity of storm events and wave heights.	Offshore cables	Medium	Minor adverse	M025 M052	Not Significant	N/A	Not Significant
Increased rate of corrosion or deterioration of offshore cables due to ocean acidification.	Offshore Cables	Low	Minor adverse	M025 M052	Not Significant	N/A	Not Significant
Damage to or failure of cable exit points due to sea level rise.	Landfall (below MHWS)	Low	Moderate adverse	M025 M052	Not Significant	N/A	Not Significant
Access to infrastructure and working conditions impeded by storm events.	Maintenance workers	Medium	Minor adverse	M025 M051 M052	Not Significant	N/A	Not Significant
Decommissioning							
Disruption to decommissioning programme due to storm damage or high winds delaying works.	Decommissioning site, materials and equipment	Medium	Minor adverse	M020 M051 M052	Not Significant	N/A	Not Significant
Damage to plant, equipment or materials from high winds.	Decommissioning site, materials and equipment	Medium	Minor adverse	M020 M051 M052	Not Significant	N/A	Not Significant
Unsafe working conditions due to high winds and storms.	Decommissioning workers	Medium	Minor adverse	M020 M051 M052	Not Significant	N/A	Not Significant

24.4 CHAPTER 8: GREENHOUSE GASES

Table 24.3: Summary of assessment of residual effects for Climate – Greenhouse Gases

Activity and impact	Receptor	Embedded mitigation measures	Significance of effect (significance)	Further environmental mitigation	Significance of residual effect (significance)
Construction					
Construction activities [A1 – A5]	Global atmosphere	M002, M005, M019, M022	Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
Operation					
Operational activities [B1, B2 – B5]	Global atmosphere	M025	Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
Decommissioning					
Decommissioning activities [C1-C4]	Global atmosphere	M020	Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
Benefits/Loads Beyond System Boundary					
Exported electricity [D2]	Global atmosphere	N/A	Beneficial (Significant)	N/A	Beneficial (Significant)

24.5 CHAPTER 9: PHYSICAL AND COASTAL PROCESSES

Table 24.4: Summary of assessment of residual effects for Physical and Coastal Processes

Activity and impact	Receptor	Magnitude of impact	Receptor and sensitivity or value	Embedded mitigation measures	Significance of effect (significance)	Further environmental mitigation	Significance of residual effect (significance)
Construction							
Drilling of Pin Piles to Install WTG Foundations – Turbine Area (sediment disturbance and seabed change)	Surrounding sub-tidal seabed, surrounding coastline and designated site of geological interest	Low	Low	M001, M019	Negligible (not significant)	N/A	Negligible (not significant)
Burial of Array Cables to Final WTG – Array Area and Array Cables to Landfall - OCAS (sediment disturbance and seabed change)		Low	Low	M001, M002, and M019	Negligible (not significant)	N/A	Negligible (not significant)
Multiple Activities (Drilling of Pin Piles to Install WTG Foundations – Turbine Area and Burial of Burial of Array Cables to Final WTG – Array Area)		Low	Low	M001, M002, and M019	Negligible (not significant)	N/A	Negligible (not significant)
Horizontal Directional Drilling activities – Drill Cutting Release and Exit Pit Construction (sediment disturbance and seabed change)		Low	Low	M001, M002, and M019	Negligible (not significant)	N/A	Negligible (not significant)
Multiple Activities (HDD Drill Cutting Release and HDD Exit Pit Construction)		Low	Low	M001, M002, and M019	Negligible (not significant)	N/A	Negligible (not significant)
Operation and maintenance							
Effects Related to the Presence of Infrastructure (changes to water depth)	Surrounding sub-tidal seabed, surrounding coastline and designated site of geological interest	Negligible	Low	M001, M019 and M025	Negligible (not significant)	N/A	Negligible (not significant)
Effects Related to the Presence of Infrastructure (changes to current speed)		Negligible	Low	M001, and M025	Negligible (not significant)	N/A	Negligible (not significant)
Effects Related to the Presence of Infrastructure (seabed structures resulting in scour)		Negligible	Low	M001, M002, M019 and M025	Negligible (not significant)	N/A	Negligible (not significant)
Effects Related to the Presence of Infrastructure (changes to waves)		Negligible	Low	M001, M019 and M025	Negligible (not significant)	N/A	Negligible (not significant)
Effects Related to the Presence of Infrastructure (changes to stratification)		Negligible	Low	N/A	Negligible (not significant)	N/A	Negligible (not significant)

Activity and impact	Receptor	Magnitude of impact	Receptor and sensitivity or value	Embedded mitigation measures	Significance of effect (significance)	Further environmental mitigation	Significance of residual effect (significance)
Decommissioning							
Removal of WTG Foundations and Pin Piles, Array Cables to Final WTG, Array Cables to Landfall, and HDD Exit Pits (sediment disturbance and seabed change)	Surrounding sub-tidal seabed, surrounding coastline and designated site of geological interest	Low	Low	M019	Negligible (not significant)	N/A	Negligible (not significant)

24.6 CHAPTER 10: MARINE SEDIMENT AND WATER QUALITY

Table 24.5: Summary of assessment of residual effects for Marine Sediment and Water Quality

Activity and impact	Receptor	Magnitude of impact	Receptor and sensitivity or value	Embedded Mitigation Measures	Significance of effect (significance)	Further environmental mitigation	Significance of residual effect (significance)
Construction							
Seabed disturbance temporarily increasing suspended sediment concentrations (drilling of pin piles, cable burial, HDD drill cutting release, HDD exit pit constructions)	Marine sediment and marine water quality	Low	N/A	M002, M005, and M030	Significance assessed in other chapters in relation to effects on biological receptors	N/A	Significance assessed in other chapters in relation to effects on biological receptors
Seabed disturbance releasing contaminants in sediment (drilling of pin piles, cable burial, HDD drill cutting release, HDD exit pit constructions).	Marine water quality	Negligible	High	M002, M005, and M030	Not significant	N/A	Not significant
Seabed disturbance during construction activities (drilling of pin piles, cable burial, HDD exit pit constructions) releasing blue carbon.	Blue carbon (held in sediments)	Low	High	M002, M005, and M030	Not significant	N/A	Not significant
Operation and maintenance							
Maintenance and remedial work temporarily increasing suspended sediment concentrations	Marine sediment and marine water quality	Negligible	N/A	M025	Significance assessed in other chapters in relation to effects on biological receptors	N/A	Significance assessed in other chapters in relation to effects on biological receptors
Maintenance and remedial work releasing contaminants in sediment	Marine water quality	Negligible	High	M025	Not significant	N/A	Not significant
Maintenance and remedial work releasing blue carbon	Blue carbon (held in sediments)	Negligible	High	M025	Not significant	N/A	Not significant
Decommissioning							
Seabed disturbance from infrastructure removal temporarily increasing suspended sediment concentrations (removal of cables and WTG foundations)	Marine sediment and marine water quality	Low	N/A	M020	Significance assessed in other chapters in relation to effects on biological receptors	N/A	Significance assessed in other chapters in relation to effects on biological receptors
Seabed disturbance from infrastructure removal releasing contaminated sediment (removal of cables and WTG foundations).	Marine water quality	Negligible	High	M020	Not significant	N/A	Not significant
Seabed disturbance from infrastructure removal releasing blue carbon	Blue carbon (held in sediments)	Low	High	M020	Not significant	N/A	Not significant

24.7 CHAPTER 11: BENTHIC AND INTERTIDAL ECOLOGY

Table 24.6: Summary of assessment of residual effects for Benthic and Intertidal Ecology

Activity and impact	Receptor	Magnitude of impact	Receptor sensitivity (S) or value (V)	Embedded mitigation measures	Significance of effect (significance)	Further environmental mitigation	Significance of residual effect (significance)
Construction							
Temporary Habitat Loss and/or Disturbance	Kelp beds	Low	V- High S- Medium	M001, M002, M005, M054	Short-term, direct, reversible, Minor adverse (Not significant)	N/A	Short-term, direct, reversible, Minor adverse (Not significant)
	<i>Ophiothrix fragilis</i> and/or <i>Ophiocomina nigra</i> brittlestar beds		V- High S- Medium				
	<i>Flustra foliacea</i> and <i>Hydrallmania falcata</i> on Tide-swept circalittoral mixed sediment		V- Low S- Medium				
	Common whelk		V- Medium S- Medium				
	Bivalve molluscs		V- Medium S- Medium				
	Cuttlefish		V- Medium S- Medium				
	Blue carbon receptors		V- High S- Medium				
	Annex I Bedrock and/or Stony Reef		V- High S- Low				
	Tide-swept algal communities	V- High S- Low					
	Decapod crustaceans	V- Medium S- Low					
	Edible sea urchin	V- Medium S- Low					
	Offshore subtidal sands and gravels	Negligible	V- High S- Medium	M001, M002, M005, M054	Negligible (Not significant)	N/A	Negligible (Not significant)
	Circalittoral mixed sediments		V- Low S- Medium				

Activity and impact	Receptor	Magnitude of impact	Receptor sensitivity (S) or value (V)	Embedded mitigation measures	Significance of effect (significance)	Further environmental mitigation	Significance of residual effect (significance)	
Temporary increase in SSC and Turbidity	Annex I Bedrock and/or Stony Reef	Low	V- High S- Medium	M005	Short-term, direct, reversible, Minor adverse (Not significant)	N/A	Short-term, direct, reversible, Minor adverse (Not significant)	
	Kelp beds		V- High S- Medium					
	Blue carbon receptors		V- High S- Medium					
	Tide-swept algal communities	Tide-swept algal communities	Low	V- High S- Low	M005	Negligible (Not significant)	N/A	Negligible (Not significant)
		Decapod crustaceans		V- Medium S- Low				
		Edible sea urchin		V- Medium S- Negligible				
		Common whelk		V- Medium S- Low				
		Bivalve molluscs		V- Medium S- Low				
		Cuttlefish		V- Medium S- Negligible				
		Offshore subtidal sands and gravels		Negligible				
<i>Ophiothrix fragilis</i> and/or <i>Ophiocomina nigra</i> brittlestar beds	V- High S- Negligible							
<i>Flustra foliacea</i> and <i>Hydrallmania falcata</i> on Tide-swept circalittoral mixed sediment	V- Low S- Negligible							
Circalittoral mixed sediments	V- Low S- Medium							
Temporary increase in sediment deposition	Offshore subtidal sands and gravels	Low	V- High S- Medium	M005	Short-term, direct, reversible, Minor adverse (Not significant)	N/A	Short-term, direct, reversible, Minor adverse (Not significant)	
	<i>Ophiothrix fragilis</i> and/or <i>Ophiocomina nigra</i> brittlestar beds		V- High S- Medium					
	Circalittoral mixed sediments		V- Low S- Medium					

Activity and impact	Receptor	Magnitude of impact	Receptor sensitivity (S) or value (V)	Embedded mitigation measures	Significance of effect (significance)	Further environmental mitigation	Significance of residual effect (significance)
	Blue carbon receptors		V- High S- Medium				
	Annex I Bedrock and/or Stony Reef	Low	V- High S- Low	M005	Negligible (Not significant)	N/A	N/A
	Kelp beds		V- High S- Low				
	Tide-swept algal communities		V- High S- Low				
	<i>Flustra foliacea</i> and <i>Hydrallmania falcata</i> on Tide-swept circalittoral mixed sediment		V- Low S- Low				
	Decapod crustaceans		V- Medium S- Negligible				
	Edible sea urchin		V- Medium S- Low				
	Common whelk		V- Medium S- Low				
	Bivalve molluscs		V- Medium S- Negligible				
	Cuttlefish		V- Medium S- Negligible				
Disturbance from underwater noise and Vibration generated during Piling and cable route preparation	Decapod crustaceans	Low	V- Medium S- Medium	M003	Medium-term, direct, reversible, Minor adverse (Not significant)	N/A	Medium-term, direct, reversible, Minor adverse (Not significant)
	Cuttlefish		V- Medium S- Medium				
	Edible sea urchin	Low	V- Medium S- Negligible	M003	Negligible (Not significant)	N/A	Negligible (Not significant)
	Common whelk		V- Medium S- Low				
	Bivalve molluscs		V- Medium S- Low				

Activity and impact	Receptor	Magnitude of impact	Receptor sensitivity (S) or value (V)	Embedded mitigation measures	Significance of effect (significance)	Further environmental mitigation	Significance of residual effect (significance)
Release of drilling fluid mud, drilling arising or bentonite from HDD employed at the cable landfall location	Annex I Bedrock and/or Stony Reef	Low	V- High S- Medium	M004	Short-term, direct, reversible, Minor adverse (Not significant)	N/A	Short-term, direct, reversible, Minor adverse (Not significant)
	Kelp beds		V- High S- Medium				
	Tide-swept algal communities	Low	V- High S- Low	M004	Negligible (Not significant)	N/A	Negligible (Not significant)
	<i>Ophiothrix fragilis</i> and/or <i>Ophiocomina nigra</i> brittlestar beds		V- High S- Negligible				
	<i>Flustra foliacea</i> and <i>Hydrallmania falcata</i> on Tide-swept circalittoral mixed sediment		V- Low S- Negligible				
	Decapod crustaceans		V- Medium S- Low				
	Common whelk		V- Medium S- Low				
	Bivalve molluscs		V- Medium S- Low				
	Edible sea urchin		V- Medium S- Negligible				
	Cuttlefish		V- Medium S- Negligible				
Offshore subtidal sands and gravels	Negligible	V- High S- Negligible	M004	Negligible (Not significant)	N/A	Negligible (Not significant)	
Circalittoral mixed sediments		V- Low S- Medium					
Introduction and colonisation by INNS	Offshore subtidal sands and gravels	Low	V- High S- Medium	M006	Long-term, non-reversible, indirect, adverse, Minor adverse (Not significant)	N/A	Long-term, non-reversible, indirect, adverse, Minor adverse (Not significant)
	<i>Ophiothrix fragilis</i> and/or <i>Ophiocomina nigra</i> brittlestar beds		V- High S- Medium				

Activity and impact	Receptor	Magnitude of impact	Receptor sensitivity (S) or value (V)	Embedded mitigation measures	Significance of effect (significance)	Further environmental mitigation	Significance of residual effect (significance)				
	<i>Flustra foliacea</i> and <i>Hydrallmania falcata</i> on Tide-swept circalittoral mixed sediment		V- Low S- Medium								
	Circalittoral mixed sediments		V- Low S- High								
	Annex I Bedrock and/or Stony Reef		V- High S- Negligible					M006	Negligible (Not significant)	N/A	Negligible (Not significant)
	Kelp beds		V- High S- Negligible								
	Tide-swept algal communities		V- High S- Low								
	Common whelk		V- Medium S- Low								
	Bivalve molluscs		V- Medium S- Low								
	Edible sea urchin		V- Medium S- Negligible								
	Cuttlefish		V- Medium S- Low								
	Decapod crustaceans		Negligible					V- Medium S- Negligible			
Potential effects on benthic habitats through fishing restrictions	Kelp beds	Low	V- High S- Medium	N/A	Short-term, direct, reversible, Minor beneficial (Not significant)	N/A	Short-term, direct, reversible, Minor beneficial (Not significant)				
	<i>Ophiothrix fragilis</i> and/or <i>Ophiocomina nigra</i> brittlestar beds		V- High S- Medium								
	Circalittoral mixed sediments		V- Low S- Medium								
	Common whelk		V- Medium S- Medium								
	Bivalve molluscs		V- Medium S- Medium								
	Cuttlefish		V- Medium S- Medium								

Activity and impact	Receptor	Magnitude of impact	Receptor sensitivity (S) or value (V)	Embedded mitigation measures	Significance of effect (significance)	Further environmental mitigation	Significance of residual effect (significance)
	<i>Flustra foliacea</i> and <i>Hydrallmania falcata</i> on Tide-swept circalittoral mixed sediment		V- Low S- Medium				
	Annex I Bedrock and/or Stony Reef		V- High S- Low				
	Tide-swept algal communities		V- High S- Low				
	Offshore subtidal sands and gravels		V- High S- Medium				
	Decapod crustaceans		V- Medium S- Low				
	Edible sea urchin		V- Medium S- Low				
Operation and Maintenance							
Long-term loss of habitat	Annex I Bedrock and/or Stony Reef	Low	V- High S- Medium	M001, M002, M025	Long-term-, direct, non-reversible, Minor adverse (Not significant)	N/A	Long-term-, direct, non-reversible, Minor adverse (Not significant)
	Kelp beds		V- High S- High				
	<i>Ophiothrix fragilis</i> and/or <i>Ophiocomina nigra</i> brittlestar beds		V- High S- High				
	Circalittoral mixed sediments		V- Low S- High				
	<i>Flustra foliacea</i> and <i>Hydrallmania falcata</i> on Tide-swept circalittoral mixed sediment		V- Low S- High				
	Decapod crustaceans		V- Low S- Medium				
	Bivalve molluscs		V- Medium S- Medium				
	Edible sea urchin		V- Medium S- Medium				
	Cuttlefish		V- Medium S- Medium				
Blue carbon receptors	V- High S- High						

Activity and impact	Receptor	Magnitude of impact	Receptor sensitivity (S) or value (V)	Embedded mitigation measures	Significance of effect (significance)	Further environmental mitigation	Significance of residual effect (significance)
	Tide-swept algal communities		V- High S- Low		Negligible (Not significant)	N/A	Negligible (Not significant)
	Common whelk		V- Medium S- Negligible				
	Offshore subtidal sands and gravels	Negligible	V- High S- High		Negligible (Not significant)	N/A	Negligible (Not significant)
Long-term habitat disturbance	<i>Ophiothrix fragilis</i> and/or <i>Ophiocomina nigra</i> brittlestar beds	Low	V- High S- Medium	M001, M002, M025	Long-term, direct, reversible, Minor adverse (Not significant)	N/A	Long-term, direct, reversible, Minor adverse (Not significant)
	<i>Flustra foliacea</i> and <i>Hydrallmania falcata</i> on Tide-swept circalittoral mixed sediment		V- Low S- Medium				
	Common whelk		V- Medium S- Medium				
	Bivalve molluscs		V- Medium S- Medium				
	Cuttlefish		V- Medium S- Medium				
Annex I Bedrock and/or Stony Reef	Annex I Bedrock and/or Stony Reef	Low	V- High S- Low	M001, M002, M025	Negligible (Not significant)	N/A	Negligible (Not significant)
	Kelp beds		V- High S- Medium				
	Tide-swept algal communities		V- High S- Low				
	Decapod crustaceans		V- Medium S- Low				
	Edible sea urchin		V- Medium S- Low				
Offshore subtidal sands and gravels	Offshore subtidal sands and gravels	Negligible	V- High S- Medium	M001, M002, M025	Negligible (Not significant)	N/A	Negligible (Not significant)
	Circalittoral mixed sediments		V- Low S- Medium				
	Kelp beds	Low	V- High S- Medium	M001, M002, M005, M025,	Short-term, direct, reversible, Minor adverse (Not significant)	N/A	

Activity and impact	Receptor	Magnitude of impact	Receptor sensitivity (S) or value (V)	Embedded mitigation measures	Significance of effect (significance)	Further environmental mitigation	Significance of residual effect (significance)
Temporary Habitat Loss and/or Disturbance	<i>Ophiothrix fragilis</i> and/or <i>Ophiocomina nigra</i> brittlestar beds		V- High S- Medium	M054			Short-term, direct, reversible, Minor adverse (Not significant)
	<i>Flustra foliacea</i> and <i>Hydrallmania falcata</i> on Tide-swept circalittoral mixed sediment		V- Low S- Medium				
	Common whelk		V- Medium S- Medium				
	Bivalve molluscs		V- Medium S- Medium				
	Cuttlefish		V- Medium S- Medium				
	Blue Carbon Receptors		V- High S- Medium				
	Annex I Bedrock and/or Stony Reef		V- High S- Low	M001, M002, M005, M025, M054	Negligible (Not significant)	N/A	Negligible (Not significant)
	Tide-swept algal communities		V- High S- Low				
	Decapod crustaceans		V- Medium S- Low				
	Edible sea urchin		V- Medium S- Low				
Offshore subtidal sands and gravels	Negligible	V- Medium S- Medium	M001, M002, M005, M025, M054	Negligible (Not significant)	N/A	Negligible (Not significant)	
		Circalittoral mixed sediments					V- Low S- Medium
Temporary increases in SSCs and turbidity	Annex I Bedrock and/or Stony Reef	Low	V- High S- Medium	M005, M025	Long-term, direct, reversible, Minor adverse (Not significant).	N/A	Long-term, direct, reversible, Minor adverse (Not significant).
	Kelp beds		V- High S- Medium				
	Circalittoral mixed sediments		V- Low S- Medium				

Activity and impact	Receptor	Magnitude of impact	Receptor sensitivity (S) or value (V)	Embedded mitigation measures	Significance of effect (significance)	Further environmental mitigation	Significance of residual effect (significance)
	Blue carbon receptors		V- High S- Medium	M005, M025	Negligible (Not significant)	N/A	Negligible (Not significant)
	Tide-swept algal communities		V- High S- Low				
	Offshore subtidal sands and gravels		V- Medium S- Negligible				
	<i>Ophiothrix fragilis</i> and/or <i>Ophiocomina nigra</i> brittlestar beds		V- High S- Negligible				
	<i>Flustra foliacea</i> and <i>Hydrallmania falcata</i> on Tide-swept circalittoral mixed sediment		V- Low S- Negligible				
	Decapod crustaceans		V- Medium S- Low				
	Common whelk		V- Medium S- Low				
	Bivalve molluscs		V- Medium S- Low				
	Edible sea urchin		V- Medium S- Negligible				
	Cuttlefish		V- Medium S- Negligible				
Temporary increases in sediment deposition	Offshore subtidal sands and gravels		V- High S- Medium	M005, M025	Long-term, direct, reversible, Minor adverse (Not significant)	N/A	Long-term, direct, reversible, Minor adverse (Not significant)
	<i>Ophiothrix fragilis</i> and/or <i>Ophiocomina nigra</i> brittlestar beds		V- High S- Medium				
	Circalittoral mixed sediments		V- Low S- Medium				
	Blue carbon receptors		V- High S- Medium				
Annex I Bedrock and/or Stony Reef	Annex I Bedrock and/or Stony Reef	Low	V- High S- Low	M005, M025	Negligible (Not significant)	N/A	Negligible (Not significant)
	Kelp beds		V- High S- Low				
	Tide-swept algal communities		V- High S- Low				

Activity and impact	Receptor	Magnitude of impact	Receptor sensitivity (S) or value (V)	Embedded mitigation measures	Significance of effect (significance)	Further environmental mitigation	Significance of residual effect (significance)
	Decapod crustaceans		V- Medium S- Negligible				
	<i>Flustra foliacea</i> and <i>Hydrallmania falcata</i> on Tide-swept circalittoral mixed sediment		V- Low S- Medium				
	Common whelk		V- Medium S- Low				
	Bivalve molluscs		V- Medium S- Negligible				
	Edible sea urchin		V- Medium S- Low				
	Cuttlefish		V- Medium S- Negligible				
Introduction and colonisation by INNS	Offshore subtidal sands and gravels	Low	V- High S- Medium	M005, M025	Long-term, non-reversible, indirect Minor adverse (Not significant)	N/A	Long-term, non-reversible, indirect Minor adverse (Not significant)
	<i>Ophiothrix fragilis</i> and/or <i>Ophiocomina nigra</i> brittlestar beds		V- High S- Medium				
	<i>Flustra foliacea</i> and <i>Hydrallmania falcata</i> on Tide-swept circalittoral mixed sediment		V- Low S- Medium				
	Circalittoral mixed sediments		V- Low S- High				
	Kelp beds	Low	V- High S- Negligible	M006	Negligible (Not significant)	N/A	Negligible (Not significant)
	Tide-swept algal communities		V- High S- Low				
	Decapod crustaceans		V- Medium S- Negligible				
	Common whelk		V- Medium S- Low				
	Bivalve molluscs		V- Medium S- Low				
	Edible sea urchin		V- Medium S- Negligible				
Cuttlefish	V- Medium S- Low						
Annex I Bedrock and/or Stony Reef	V- High S- Negligible						

Activity and impact	Receptor	Magnitude of impact	Receptor sensitivity (S) or value (V)	Embedded mitigation measures	Significance of effect (significance)	Further environmental mitigation	Significance of residual effect (significance)
EMF effects from subsea electrical cables	Annex I Bedrock and/or Stony Reef	Low	V- High S- Negligible	M002	Negligible (Not significant)	N/A	Negligible (Not significant)
	Kelp beds		V- High S- Negligible				
	Tide-swept algal communities		V- High S- Negligible				
	Offshore subtidal sands and gravels		V- High S- Negligible				
	<i>Ophiothrix fragilis</i> and/or <i>Ophiocomina nigra</i> brittlestar beds		V- High S- Negligible				
	<i>Flustra foliacea</i> and <i>Hydrallmania falcata</i> on Tide-swept circalittoral mixed sediment		V- Low S- Negligible				
	Circalittoral mixed sediments		V- Low S- Negligible				
	Decapod crustaceans		V- Medium S- Low				
	Edible sea urchin		V- Medium S- Negligible				
	Common whelk		V- Medium S- Negligible				
	Bivalve molluscs		V- Medium S- Negligible				
Cuttlefish	V- Medium S- Low						
Thermal emissions from subsea electrical cables	Annex I Bedrock and/or Stony Reef	Low	V- High S- Low	M002	Negligible (Not significant)	N/A	Negligible (Not significant)
	Offshore subtidal sands and gravels		V- High S- Low				
	<i>Ophiothrix fragilis</i> and/or <i>Ophiocomina nigra</i> brittlestar beds		V- High S- Negligible				
	Circalittoral mixed sediments		V- Low S- Low				

Activity and impact	Receptor	Magnitude of impact	Receptor sensitivity (S) or value (V)	Embedded mitigation measures	Significance of effect (significance)	Further environmental mitigation	Significance of residual effect (significance)
	Decapod crustaceans		V- Medium S- Low				
	Bivalve molluscs		V- Medium S- Low				
	Kelp beds	Negligible	V- High S- Medium	M002	Negligible (Not significant)	N/A	Negligible (Not significant)
	Tide-swept algal communities		V- High S- Low				
	<i>Flustra foliacea</i> and <i>Hydrallmania falcata</i> on Tide-swept circalittoral mixed sediments		V- Low S- Negligible				
	Common whelk		V- Medium S- Low				
	Edible sea urchin		V- Medium S- Low				
Cuttlefish	V- Medium S- Medium						
Decommissioning							
Removal of infrastructure following decommissioning of the Offshore Project	Annex I Bedrock and/or Stony Reef	Low	V- High S- High	M020	Long-term, direct, reversible, Minor adverse (Not significant)	N/A	Long-term, direct, reversible, Minor adverse (Not significant)
	Edible sea urchin	Low	V- Medium S- Low - Medium	M020	Long-term, direct, reversible, Minor beneficial (Not significant)	N/A	Long-term, direct, reversible, Minor beneficial (Not significant)
	Offshore subtidal sands and gravels		V- High S- High				
	Circalittoral mixed sediments		V- Low S- High				
	<i>Flustra foliacea</i> and <i>Hydrallmania falcata</i> on Tide-swept circalittoral mixed sediment		V- Low S- High				
	Decapod crustaceans		V- Medium S- Low -Medium				
	Bivalve molluscs		V- Medium S- Low - Medium				
	Cuttlefish		V- Medium S- Low - Medium				
Tide-swept algal communities	Low	V- High S- Low	M020	Negligible (Not significant)	N/A	Negligible (Not significant)	

Activity and impact	Receptor	Magnitude of impact	Receptor sensitivity (S) or value (V)	Embedded mitigation measures	Significance of effect (significance)	Further environmental mitigation	Significance of residual effect (significance)			
	<i>Ophiothrix fragilis</i> and/or <i>Ophiocomina nigra</i> brittlestar beds		V- High S- Negligible							
	Common whelk		V- Medium S- Negligible							
	Kelp beds	Negligible	V- High S- High	M020	Negligible (Not significant)	N/A	Negligible (Not significant)			
Temporary increase in sediment concentrations and turbidity	Annex I Bedrock and/or Stony Reef	Low	V- High S- Medium	M005, M020	Short-term, direct, reversible, Minor adverse (Not significant)	N/A	Short-term, direct, reversible, Minor adverse (Not significant)			
	Kelp beds		V- High S- Medium							
	Blue carbon receptors		V- High S- Medium							
	<i>Ophiothrix fragilis</i> and/or <i>Ophiocomina nigra</i> brittlestar beds		V- High S- Negligible	M005, M020				Negligible (Not significant)	N/A	Negligible (Not significant)
	Tide-swept algal communities		V- High S- Low							
	<i>Flustra foliacea</i> and <i>Hydrallmania falcata</i> on Tide-swept circalittoral mixed sediment		V- Low S- Negligible							
	Circalittoral mixed sediments		V- Low S- Medium							
	Decapod crustaceans		V- Medium S- Low							
	Edible sea urchin		V- Medium S- Negligible							
	Common whelk		V- Medium S- Low							
Bivalve molluscs	V- Medium S- Low									
Cuttlefish	V- Medium S- Negligible									

Activity and impact	Receptor	Magnitude of impact	Receptor sensitivity (S) or value (V)	Embedded mitigation measures	Significance of effect (significance)	Further environmental mitigation	Significance of residual effect (significance)	
	Offshore subtidal sands and gravels	Negligible	V- Medium S- Negligible	M005, M020	Negligible (Not significant)	N/A	Negligible (Not significant)	
Temporary increase in sediment deposition	Offshore subtidal sands and gravels	Low	V- High S- Medium	M005, M020	Short-term, direct, reversible, Minor adverse (Not significant)	N/A	Short-term, direct, reversible, Minor adverse (Not significant)	
	<i>Ophiothrix fragilis</i> and/or <i>Ophiocomina nigra</i> brittlestar beds		V- High S- Medium					
	Blue carbon receptors		V- High S- Medium					
	Annex I Bedrock and/or Stony Reef	Annex I Bedrock and/or Stony Reef	Low	V- High S- Low	M005, M020	Negligible (Not significant)	N/A	Negligible (Not significant)
		Kelp beds		V- High S- Low				
		<i>Flustra foliacea</i> and <i>Hydrallmania falcata</i> on Tide-swept circalittoral mixed sediment		V- Low S- Low				
		Circalittoral mixed sediments		V- Low S- Medium				
		Tide-swept algal communities		V- High S- Low				
		Decapod crustaceans		V- Medium S- Negligible				
		Edible sea urchin		V- Medium S- Low				
		Common whelk		V- Medium S- Low				
		Bivalve molluscs		V- Medium S- Negligible				
		Cuttlefish		V- Medium S- Negligible				
Annex I Bedrock and/or Stony Reef	V- High S- Medium							
Temporary seabed habitat loss and/or disturbance	Kelp beds	Low	V- High S- Medium	M001, M002, M005, M054	Short-term, direct, reversible, Minor adverse (Not significant)	N/A	Short-term, direct, reversible, Minor adverse (Not significant)	
	<i>Ophiothrix fragilis</i> and/or <i>Ophiocomina nigra</i> brittlestar beds		V – High S - Medium					
	<i>Flustra foliacea</i> and <i>Hydrallmania falcata</i> on tide-swept circalittoral mixed sediment		V – Low S - Medium					
	Common Whelk		V – Medium S - Medium					

Activity and impact	Receptor	Magnitude of impact	Receptor sensitivity (S) or value (V)	Embedded mitigation measures	Significance of effect (significance)	Further environmental mitigation	Significance of residual effect (significance)
	Bivalve molluscs		V – Medium S - Medium				
	Cuttlefish		V – Medium S - Medium				
	Blue Carbon Receptors		V – High S - Medium				
	Annex I Bedrock and/or Stony Reef		V – High S - Low				
	Tide-swept algal communities		V – High S - Low				
	Decapod crustaceans		V – Medium S - Low				
	Edible sea urchin		V – Medium S - Low				
	Cirralittoral mixed sediments	Negligible	V – Low S - Medium		Negligible (Not significant)	N/A	Negligible (Not significant)
	Offshore subtidal sands and gravels		V – High S - Medium				
Disturbance from underwater noise and Vibration	Decapod crustaceans	Low	V- Medium S- Medium	M003	Medium-term, direct, reversible, Minor adverse (Not significant)	N/A	Medium-term, direct, reversible, Minor adverse (Not significant)
	Cuttlefish		V- Medium S- Medium				
	Edible sea urchin		V- Medium S- Negligible		Negligible (Not significant)	N/A	Negligible (Not significant)
	Common whelk		V- Medium S- Low				
	Bivalve molluscs		V- Medium S- Low				
Introduction and colonisation by INNS	Offshore subtidal sands and gravels	Low	V- High S- Medium	M006	Long-term, non-reversible, indirect, adverse, Minor adverse (Not significant)	N/A	Long-term, non-reversible, indirect, adverse, Minor adverse (Not significant)
	<i>Ophiolithrix fragilis</i> and/or <i>Ophiocomina nigra</i> brittlestar beds		V- High S- Medium				
	<i>Flustra foliacea</i> and <i>Hydrallmania falcata</i> on Tide-swept cirralittoral mixed sediment		V- Low S- Medium				
	Cirralittoral mixed sediments		V- Low S- High				
	Annex I Bedrock and/or Stony Reef		V- High S- Negligible		Negligible (Not significant)	N/A	Negligible (Not significant)
	Tide-swept algal communities		V- High S- Low				
	Decapod crustaceans		V- Medium				

Activity and impact	Receptor	Magnitude of impact	Receptor sensitivity (S) or value (V)	Embedded mitigation measures	Significance of effect (significance)	Further environmental mitigation	Significance of residual effect (significance)
			S- Negligible				
	Common whelk		V- Medium S- Low				
	Bivalve molluscs		V- Medium S- Low				
	Edible sea urchin		V- Medium S- Negligible				
	Cuttlefish		V- Medium S- Low				
	Annex I Bedrock and/or Stony Reef		V- High S- Negligible				
	Decapod Crustaceans	Negligible	V- Medium S- Negligible	M006	Negligible (Not significant)	N/A	Negligible (Not significant)
Potential effects on benthic habitats through fishing restrictions	Kelp Beds	Low	V- High S- Medium		Short-term, direct, reversible, Minor beneficial (Not significant)	N/A	Short-term, direct, reversible, Minor beneficial (Not significant)
	<i>Ophiothrix fragilis</i> and/or <i>Ophiocomina nigra</i> brittlestar beds		V- High S- Medium				
	Cirralittoral mixed sediments		V- Low S- Medium				
	Common whelk		V- Medium S- Medium				
	Bivalve molluscs		V- Medium S- Medium				
	Cuttlefish		V- Medium S- Medium				
	<i>Flustra foliacea</i> and <i>Hydrallmania falcata</i> on Tide-swept cirralittoral mixed sediment		V- Low S- Medium				
	Annex I Bedrock and/or Stony Reef		V- High S- Low		Negligible (Not significant)	N/A	Negligible (Not significant)
	Tide-swept algal communities		V- High S- Low				
	Offshore subtidal sands and gravels		V- High S- Low				
	Decapod crustaceans		V- Medium S- Low				
	Edible sea urchin	V- Medium S- Low					

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24.8 CHAPTER 12: FISH ECOLOGY

Table 24.7: Summary of assessment of residual effects for Fish Ecology

Activity and impact	Receptor	Magnitude of impact	Receptor sensitivity or value	Embedded mitigation measures	Significance of effect (significance)	Further environmental mitigation	Significance of residual effect (significance)
Construction							
Short term habitat loss and/or disturbance	Marine Fish						
	Atlantic herring	Low	Medium	M001 M019	Minor (Not Significant)	N/A	Minor (Not Significant)
	Common skate complex	Low	High	M023	Minor (Not Significant)	N/A	Minor (Not Significant)
	Sandeel	Low	Medium		Minor (Not Significant)	N/A	Minor (Not Significant)
	Atlantic cod	Low	Medium		Minor (Not Significant)	N/A	Minor (Not Significant)
	All other marine fish species (not discussed individually)	Low	Low		Negligible (Not Significant)	N/A	Negligible (Not Significant)
	Diadromous Fish						
	Atlantic salmon, sea trout, European eel	Low	Low	M001 M023 M019	Negligible (Not Significant)	N/A	Negligible (Not Significant)
Increases in SSC and associated sediment deposition	Marine Fish						
	Species with nursery grounds within the area affected by SSC and sediment deposition (Atlantic mackerel, Blue whiting, Anglerfish, European hake, Haddock, Ling, Whiting, Spurdog)	Low	Medium	M001 M002 M005	Minor (Not Significant)	N/A	Minor (Not Significant)
	Species with spawning grounds (only) within the area affected by SSC and sediment deposition (European sprat)	Low	Medium	M023	Minor (Not Significant)	N/A	Minor (Not Significant)
	Species with spawning grounds (only) within the area affected by SSC and sediment deposition (Common skate and spotted ray)	Low	High		Minor (Not Significant)	N/A	Minor (Not Significant)
	Species with spawning and nursery grounds within the area affected by SSC and sediment deposition (Atlantic herring, Atlantic cod, lemon sole, Norway pout)	Low	Medium		Minor (Not Significant)	N/A	Minor (Not Significant)
	Sandeel	Low	Medium	M001 M002	Minor (Not Significant)	N/A	Minor (Not Significant)
	All other marine fish species (not discussed individually)	Low	Low	M005 M023	Negligible (Not Significant)	N/A	Negligible (Not Significant)
Diadromous Fish							

Activity and impact	Receptor	Magnitude of impact	Receptor sensitivity or value	Embedded mitigation measures	Significance of effect (significance)	Further environmental mitigation	Significance of residual effect (significance)
	Atlantic salmon Sea trout European eel	Low	Low	M001 M002 M005 M023	Negligible (Not Significant)	N/A	Negligible (Not Significant)
Underwater noise and vibration (impulsive)	Mortality (including potential mortal injury) and recoverable injury						
	Marine fish						
	Hearing group 1 & 2 (excluding sandeel)	Low	Low	M003 M023	Negligible (Not Significant)	N/A	Negligible (Not Significant)
	Hearing group 1 & 2 (sandeel)	Low	Medium		Minor (Not Significant)	N/A	Minor (Not Significant)
	Hearing group 3 & 4	Low	Medium		Minor (Not Significant)	N/A	Minor (Not Significant)
	Hearing group 5	Low	Low		Negligible (Not Significant)	N/A	Negligible (Not Significant)
	Diadromous species						
	Atlantic salmon (hearing group 2)	Low	Medium	M003 M023	Minor (Not Significant)	N/A	Minor (Not Significant)
	Sea trout (hearing group 2)	Low	Low		Negligible (Not Significant)	N/A	Negligible (Not Significant)
	European eel (hearing group 3)	Low	Medium		Minor (Not Significant)	N/A	Minor (Not Significant)
	TSS						
	Marine Fish						
	Hearing group 1 & 2 (excluding sandeel)	Low	Low	M003 M023	Negligible (Not Significant)	N/A	Negligible (Not Significant)
	Hearing group 1 & 2 (sandeel)	Low	Medium		Minor (Not Significant)	N/A	Minor (Not Significant)
	Hearing group 3 & 4	Low	Medium		Minor (Not Significant)	N/A	Minor (Not Significant)
	Diadromous species						
	Atlantic salmon (hearing group 2)	Medium	Medium	M003 M023	Moderate (Potentially Significant)	A006	Minor (Not Significant)
	Sea trout (hearing group 2)	Medium	Low		Minor (Not Significant)	N/A	Minor (Not Significant)
	European eel (hearing group 3)	Medium	Medium		Moderate (Not Significant)	N/A	Moderate (Not Significant)

Activity and impact	Receptor	Magnitude of impact	Receptor sensitivity or value	Embedded mitigation measures	Significance of effect (significance)	Further environmental mitigation	Significance of residual effect (significance)
	Masking and behavioural effects						
	Marine Fish						
	Hearing group 1 and 2 (excluding sandeel)	Low	Low	M003 M023	Negligible (Not Significant)	N/A	Negligible (Not Significant)
	Hearing group 1 and 2 (sandeel)	Low	Medium		Minor (Not Significant)	N/A	Minor (Not Significant)
	Hearing group 3 & 4 species	Low	Medium		Minor (Not Significant)	N/A	Minor (Not Significant)
	Hearing group 5	Low	Low		Negligible (Not Significant)	N/A	Negligible (Not Significant)
	Diadromous species						
	Atlantic salmon (hearing group 2)	Low	Medium	M003 M023	Minor (Not Significant)	N/A	Minor (Not Significant)
	Sea trout (hearing group 2)	Low	Low		Negligible (Not Significant)	N/A	Negligible (Not Significant)
	European eel (hearing group 3)	Low	Medium		Negligible (Not Significant)	N/A	Negligible (Not Significant)
Release Of Drilling Fluids During Trenchless Construction and Construction of HDD Exit Pits	Marine Fish						
	Species with nursery grounds (only) within the area affected by SSC and sediment deposition						
	Atlantic mackerel; Blue whiting; Anglerfish; European hake; Haddock; Ling; Whiting; Spurdog	Low	Medium	M001 M002 M005	Minor (Not Significant)	N/A	Minor (Not Significant)
	Species with spawning grounds (only) within the area affected by SSC and sediment deposition						
	European sprat	Low	Medium	M001 M002 M005	Minor (Not Significant)	N/A	Minor (Not Significant)
	Common skate complex	Low	High		Minor (Not Significant)	N/A	Minor (Not Significant)
	Spotted ray	Low	High		Minor (Not Significant)	N/A	Minor (Not Significant)
	Species with spawning and nursery grounds within the area affected by SSC and sediment deposition						
Atlantic herring	Low	Medium	M001 M002 M005	Minor (Not Significant)	N/A	Minor (Not Significant)	
Atlantic cod Lemon sole Norway pout	Low	Medium		Minor (Not Significant)	N/A	Minor (Not Significant)	

Activity and impact	Receptor	Magnitude of impact	Receptor sensitivity or value	Embedded mitigation measures	Significance of effect (significance)	Further environmental mitigation	Significance of residual effect (significance)
	Sandeel						
	Sandeel species	Low	Medium	M001 M002 M005	Minor (Not Significant)	N/A	Minor (Not Significant)
	All other marine fish species (not discussed individually)						
	All other marine fish species (not discussed individually)	Low	Low	M001 M002 M005	Negligible (Not Significant)	N/A	Negligible (Not Significant)
	Diadromous Fish						
	Atlantic salmon Sea trout European eel	Low	Low	M001 M002 M005	Negligible (Not Significant)	N/A	Negligible (Not Significant)
	Marine fish						
	Group 1 and 2 (excluding sandeel)	Negligible	Low	M023	Negligible (Not Significant)	N/A	Negligible (Not Significant)
Group 1 and 2 (sandeel)	Negligible	Medium	Negligible (Not Significant)		N/A	Negligible (Not Significant)	
Group 3 & 4	Negligible	Medium	Negligible (Not Significant)		N/A	Negligible (Not Significant)	
Group 5 (eggs and larvae)	Negligible	Low	Negligible (Not Significant)		N/A	Negligible (Not Significant)	
Underwater noise and vibration (continuous)	Diadromous fish						
	Atlantic salmon (hearing group 2)	Negligible	Medium	M023	Negligible (Not Significant)	N/A	Negligible (Not Significant)
	Sea trout (hearing group 2)	Negligible	Low		Negligible (Not Significant)	N/A	Negligible (Not Significant)
	Group 3 – European eel	Negligible	Medium		Negligible (Not Significant)	N/A	Negligible (Not Significant)
Operation and maintenance							
Long term seabed habitat loss/change	Marine fish						
	Atlantic herring	Low	Medium	M001	Minor (Not Significant)	N/A	Minor (Not Significant)
	Common skate complex	Low	High		Minor (Not Significant)	N/A	Minor (Not Significant)

Activity and impact	Receptor	Magnitude of impact	Receptor sensitivity or value	Embedded mitigation measures	Significance of effect (significance)	Further environmental mitigation	Significance of residual effect (significance)	
	Spotted ray	Low	Medium		Minor (Not Significant)	N/A	Minor (Not Significant)	
	Sandeel	Low	High		Minor (Not Significant)	N/A	Minor (Not Significant)	
	All other marine fish species (not discussed individually)All other marine fish receptors	Low	Low		Negligible (Not Significant)	N/A	Negligible (Not Significant)	
	Diadromous Fish							
	Atlantic salmon Sea trout European eel	Low	Medium	M001	Minor (Not Significant)	N/A	Minor (Not Significant)	
Short term seabed habitat loss/change	Marine fish							
	Atlantic herring	Low	Medium	M001 M005	Minor (Not Significant)	N/A	Minor (Not Significant)	
	Common skate complex	Low	High		Minor (Not Significant)	N/A	Minor (Not Significant)	
	Spotted ray	Low	Medium		Minor (Not Significant)	N/A	Minor (Not Significant)	
	Sandeel	Low	Medium		Minor (Not Significant)	N/A	Minor (Not Significant)	
	All other marine fish species (not discussed individually)All other marine fish receptors	Low	Low		Negligible (Not Significant)	N/A	Negligible (Not Significant)	
	Diadromous Fish							
	Atlantic salmon Sea trout European eel	Low	Low	M001 M005	Negligible (Not Significant)	N/A	Negligible (Not Significant)	
Increases in suspended sediment concentrations and associated sediment deposition	Marine fish							
	Species with nursery grounds (only) within the area affected by SSC and sediment deposition							
	Atlantic mackerel Blue whiting Anglerfish European hake Haddock Ling, Whiting Spurdog	Low	Medium	M005	Minor (Not Significant)	N/A	Minor (Not Significant)	
	Species with spawning grounds (only) within the area affected by SSC and sediment deposition							
	European sprat	Low	Medium	M005	Minor (Not Significant)	N/A	Minor (Not Significant)	

Activity and impact	Receptor	Magnitude of impact	Receptor sensitivity or value	Embedded mitigation measures	Significance of effect (significance)	Further environmental mitigation	Significance of residual effect (significance)	
	Common skate complex Spotted ray	Low	High		Minor (Not Significant)	N/A	Minor (Not Significant)	
	Species with spawning and nursery grounds within the area affected by SSC and sediment deposition							
	Atlantic herring Atlantic cod Lemon sole Norway pout	Low	Medium	M005	Minor (Not Significant)	N/A	Minor (Not Significant)	
	Sandeel							
	Sandeel species	Low	Medium	M005	Minor (Not Significant)	N/A	Minor (Not Significant)	
	All other marine fish species (not discussed individually)							
	All other marine fish species (not discussed individually)	Low	Low	M005	Negligible (Not Significant)	N/A	Negligible (Not Significant)	
	Diadromous Fish							
	Atlantic salmon Sea trout European eel	Low	Low	M005	Negligible (Not Significant)	N/A	Negligible (Not Significant)	
Underwater noise and vibration	Marine Fish							
	Hearing group 1 and 2 (excluding sandeel)	Negligible	Low	N/A	Negligible (Not Significant)	N/A	Negligible (Not Significant)	
	Hearing group 1 and 2 (sandeel)	Negligible	Medium		Negligible (Not Significant)	N/A	Negligible (Not Significant)	
	Hearing group 3 & 4	Negligible	Medium		Negligible (Not Significant)	N/A	Negligible (Not Significant)	
	Hearing group 5	Negligible	Low		Negligible (Not Significant)	N/A	Negligible (Not Significant)	
	Diadromous Fish							
	Atlantic salmon (hearing group 2)	Negligible	Medium	N/A	Negligible (Not Significant)	N/A	Negligible (Not Significant)	
	Sea trout (hearing group 2)	Negligible	Low		Negligible (Not Significant)	N/A	Negligible (Not Significant)	
	European eel (hearing group 3)	Negligible	Medium		Negligible (Not Significant)	N/A	Negligible (Not Significant)	
	Electromagnetic Fields	Marine Fish						

Activity and impact	Receptor	Magnitude of impact	Receptor sensitivity or value	Embedded mitigation measures	Significance of effect (significance)	Further environmental mitigation	Significance of residual effect (significance)	
	Elasmobranchs	Low	Medium	M002	Minor (Not Significant)	N/A	Minor (Not Significant)	
	All other marine fish species (not discussed individually)	Low	Low		Negligible (Not Significant)	N/A	Negligible (Not Significant)	
	Diadromous Fish							
	Atlantic salmon Sea trout	Low	Medium	M002	Minor (Not Significant)	N/A	Minor (Not Significant)	
	European eel	Low	Medium		Minor (Not Significant)	N/A	Minor (Not Significant)	
Fish aggregation effects	Marine Fish							
	Species with nursery grounds within the Offshore Project Boundary	Low	Medium	M033	Minor (Not Significant)	N/A	Minor (Not Significant)	
	Key prey species	Low	Medium		Minor (Not Significant)	N/A	Minor (Not Significant)	
	All other marine fish	Low	Low		Negligible (Not Significant)	N/A	Negligible (Not Significant)	
	Diadromous Fish							
	Atlantic salmon	Low	High	M033	Minor (Not Significant)	N/A	Minor (Not Significant)	
	Sea trout	Low	Medium		Minor (Not Significant)	N/A	Minor (Not Significant)	
	European eel	Low	High		Minor (Not Significant)	N/A	Minor (Not Significant)	
Decommissioning								
Short term seabed habitat loss and/or disturbance during decommissioning activities	Marine Fish							
	Atlantic herring	Low	Medium	M005 M020	Minor (Not Significant)	N/A	Minor (Not Significant)	
	Common skate complex	Low	High		Minor (Not Significant)	N/A	Minor (Not Significant)	
	Spotted ray	Low	Medium		Minor (Not Significant)	N/A	Minor (Not Significant)	
	Sandeel	Low	Medium		Minor (Not Significant)	N/A	Minor (Not Significant)	
	All other marine fish species (not discussed individually)	Low	Low		Negligible (Not Significant)	N/A	Negligible (Not Significant)	
	Diadromous Fish							
Diadromous fish	Low	Low	M005 M020	Negligible (Not Significant)	N/A	Negligible (Not Significant)		

Activity and impact	Receptor	Magnitude of impact	Receptor sensitivity or value	Embedded mitigation measures	Significance of effect (significance)	Further environmental mitigation	Significance of residual effect (significance)
Increases in suspended sediment concentration and associated sediment deposition	Marine Fish						
	Species with nursery grounds (only) within the area affected by SSC and sediment deposition						
	Atlantic mackerel Blue whiting Anglerfish European hake Haddock Ling, Whiting Spurdog	Low	Medium	M005 M020	Minor (Not Significant)	N/A	Minor (Not Significant)
	Species with spawning grounds (only) within the area affected by SSC and sediment deposition						
	European sprat	Low	Medium	M005 M020	Minor (Not Significant)	N/A	Minor (Not Significant)
	Common skate complex Spotted ray	Low	High		Minor (Not Significant)	N/A	Minor (Not Significant)
	Species with spawning and nursery grounds within the area affected by SSC and sediment deposition						
	Atlantic herring Atlantic cod Lemon sole Norway pout	Low	Medium	M005 M020	Minor (Not Significant)	N/A	Minor (Not Significant)
	Sandeel						
	Sandeel species	Low	Medium	M005 M020	Minor (Not Significant)	N/A	Minor (Not Significant)
	All other marine fish species (not discussed individually)						
	All other marine fish species (not discussed individually)	Low	Low	M005 M020	Negligible (Not Significant)	N/A	Negligible (Not Significant)
	Diadromous Fish						
	Atlantic salmon Sea trout European eel	Low	Low	M005 M020	Negligible (Not Significant)	N/A	Negligible (Not Significant)

24.9 CHAPTER 13: MARINE MAMMALS

Table 24.8: Summary of assessment of residual effects for Marine Mammals

Activity and impact	Receptor	Magnitude of impact	Receptor and sensitivity or value	Embedded mitigation measures	Significance of effect (significance)	Further environmental mitigation	Significance of residual effect (significance)
Construction							
Auditory injury from piling noise	All Marine Mammal receptors	Negligible	Medium	M019 and M003	Negligible (Not significant)	N/A	Negligible (Not significant)
Disturbance from piling noise	Risso's dolphin and Bottlenose dolphin (within CWSH MU)	Low	Low	M019 and M003	Negligible (Not significant)	N/A	Negligible (Not significant)
	All other Marine Mammal receptors	Negligible	Low	M019 and M003	Negligible (Not significant)	N/A	Negligible (Not significant)
Auditory injury from other construction noise	All Marine Mammal receptors	Negligible	Medium	M019 and M003	Negligible (Not significant)	N/A	Negligible (Not significant)
Disturbance from other construction noise	All Marine Mammal receptors	Negligible	Low	M019 and M003	Negligible (Not significant)	N/A	Negligible (Not significant)
Vessel collision	Beaked whale species, Minke whale, Humpback whale and Fin whale	Low	Medium	M029 and M015	Minor (not significant)	N/A	Minor (not significant)
	All other Marine Mammal receptors	Low	Low	M029 and M015	Negligible (Not significant)	N/A	Negligible (Not significant)
Disturbance or temporary habitat loss from presence of vessels	All Marine Mammal receptors	Low	Low	M021, M029 and M015	Negligible (Not significant)	N/A	Negligible (Not significant)
Accidental release of pollutants	All Marine Mammal receptors	Low	High	M019, M031, M004, M005, M021	Minor (Not significant)	N/A	Minor (Not significant)
Increases in suspended sediment concentration and reduction in water quality	All Marine Mammal receptors	Negligible	Negligible	M031, M005	Negligible (Not significant)	N/A	Negligible (Not significant)
Indirect effects of impacts on prey availability	All Marine Mammal receptors	Low	Low	M002, M019, M031, M005	Negligible (Not significant)	N/A	Negligible (Not significant)
Operation and maintenance							
Disturbance from turbine noise	Harbour Porpoise, Minke whale, Humpback whale and Fin whale	Low	Low	None	Negligible (Not significant)	N/A	Negligible (Not significant)
	Killer whale	Low	Negligible	None	Negligible (Not significant)	N/A	Negligible (Not significant)
	All other marine mammal receptors	Low	Negligible	None	Negligible (Not significant)	N/A	Negligible (Not significant)
Disturbance from other operational noise	All marine mammal receptors	Negligible	Low	M025	Negligible (Not significant)	N/A	Negligible (Not significant)
Vessel collision	Beaked whale species, Minke whale, Humpback whale and	Low	Medium	M029 and M015	Minor (Not significant)	N/A	Minor (Not significant)

Activity and impact	Receptor	Magnitude of impact	Receptor and sensitivity or value	Embedded mitigation measures	Significance of effect (significance)	Further environmental mitigation	Significance of residual effect (significance)
	Fin whale						
	All other marine mammal receptors	Low	Low	M029 and M015	Negligible (Not significant)	N/A	Negligible (Not significant)
Barrier effects	Harbour porpoise, White-beaked dolphin, Common dolphin, Bottlenose dolphin, Risso's dolphin, Atlantic white-sided dolphin, Long-finned pilot whale and Killer whale	Low	Low	None	Negligible (Not significant)	N/A	Negligible (Not significant)
	All other marine mammal receptors	Low	Low	None	Negligible (Not significant)	N/A	Negligible (Not significant)
Long-term changes in habitat and foraging opportunities	All marine mammal receptors	Low	Low	M002, M025, M031, M005	Negligible (Not significant)	N/A	Negligible (Not significant)
Accidental release of pollutants	All marine mammal receptors	Low	High	M025, M004, M005, M021, M031	Minor (Not significant)	N/A	Minor (Not significant)
Increases in suspended sediment concentration and reduction in water quality	All marine mammal receptors	Negligible	Negligible	M031, M005	Negligible (Not significant)	N/A	Negligible (Not significant)
Indirect effects of impacts on prey availability	All marine mammal receptors	Low	Low	M002, M025, M031, M005	Negligible (Not significant)	N/A	Negligible (Not significant)
Decommissioning							
See impacts to construction above.							

24.10 CHAPTER 14: MARINE AND NEARSHORE ORNITHOLOGY

Table 24.9: Summary of assessment of residual effects for Marine and Nearshore Ornithology

Activity and impact	Receptor	Magnitude of impact	Receptor sensitivity or value	Embedded mitigation measures	Significance of effect (significance)	Further environmental mitigation	Significance of residual effect (significance)	
Construction								
Temporary habitat loss and disturbance	Kittiwake	Negligible	Low	M001	Negligible (Not Significant)	None required	Negligible (Not Significant)	
	Guillemot	Negligible	Medium	M002	Negligible (Not Significant)		Negligible (Not Significant)	
	Razorbill	Negligible	Low	M004	Negligible (Not Significant)		Negligible (Not Significant)	
	Puffin	Negligible	Medium	M005	Negligible (Not Significant)		Negligible (Not Significant)	
	Red-throated diver	Low	High	M010	Minor (Not Significant)		Minor (Not Significant)	
	Great northern diver	Negligible	Medium	M014	Negligible (Not Significant)		Negligible (Not Significant)	
	Gannet	Negligible	Low	M018	Negligible (Not Significant)		None required	Negligible (Not Significant)
				M019				
Indirect effects through effects on prey species	Kittiwake	Negligible	High	M022	Minor (Not Significant)	None required	Minor (Not Significant)	
	Great black-backed gull	Negligible	High	M023	Minor (Not Significant)		Minor (Not Significant)	
	Herring gull	Negligible	Low	M025	Negligible (Not Significant)		Negligible (Not Significant)	
	Arctic tern	Negligible	High	M031	Minor (Not Significant)		Minor (Not Significant)	
	Guillemot	Negligible	High	M033	Minor (Not Significant)		Minor (Not Significant)	
	Razorbill	Negligible	Medium	M036	Negligible (Not Significant)		Negligible (Not Significant)	
	Puffin	Negligible	High		Minor (Not Significant)		Minor (Not Significant)	
	Red-throated diver	Negligible	High		Minor (Not Significant)		Minor (Not Significant)	
	Great northern diver	Negligible	Medium		Negligible (Not Significant)		Negligible (Not Significant)	
	Fulmar	Negligible	Medium		Negligible (Not Significant)		Negligible (Not Significant)	
	Manx shearwater	Negligible	Medium		Negligible (Not Significant)		Negligible (Not Significant)	
	Gannet	Negligible	Medium		Negligible (Not Significant)		Negligible (Not Significant)	
	Fulmar	Negligible	High	M014	Minor (Not Significant)	None required	Minor (Not Significant)	

Activity and impact	Receptor	Magnitude of impact	Receptor sensitivity or value	Embedded mitigation measures	Significance of effect (significance)	Further environmental mitigation	Significance of residual effect (significance)
Response to artificial lighting	Manx shearwater	Negligible	Low	M016 M019	Negligible (Not Significant)		Negligible (Not Significant)
	Storm petrel	Negligible	Medium	M022 M025	Negligible (Not Significant)		Negligible (Not Significant)
	Leach's petrel	Negligible	High	M031 M033	Minor (Not Significant)		Minor (Not Significant)
Operation and maintenance							
Collision risk	Kittiwake	Negligible	High	M014	Minor (Not Significant)	None required	Minor (Not Significant)
	Great black-backed gull	Negligible	Very high	M016 M019 M022	Minor (Not Significant)		Minor (Not Significant)
	Herring gull	Negligible	High	M025	Minor (Not Significant)		Minor (Not Significant)
	Arctic tern	Negligible	High	M033	Minor (Not Significant)		Minor (Not Significant)
	Fulmar	Negligible	Medium		Negligible (Not Significant)		Negligible (Not Significant)
	Manx shearwater	Negligible	Negligible		Negligible (Not Significant)		Negligible (Not Significant)
	Gannet	Negligible	High		Minor (Not Significant)		Minor (Not Significant)
	Migratory birds	Negligible	High		Minor (Not Significant)		Minor (Not Significant)
Distributional responses (displacement) associated with the Offshore Project	Kittiwake	Negligible	Medium	M001	Negligible (Not Significant)	None required	Negligible (Not Significant)
	Guillemot	Negligible	High	M014	Minor (Not Significant)		Minor (Not Significant)
	Razorbill	Negligible	Medium	M018 M019	Negligible (Not Significant)		Negligible (Not Significant)
	Puffin	Negligible	High	M022	Minor (Not Significant)		Minor (Not Significant)
	Red-throated diver	Negligible	Very high	M025 M031	Minor (Not Significant)		Minor (Not Significant)
	Great northern diver	Negligible	High	M033	Minor (Not Significant)		Minor (Not Significant)
	Gannet	Negligible	High	M036	Minor (Not Significant)		Minor (Not Significant)
Collision and displacement combined	Kittiwake	Negligible	High	M001 M004	Minor (Not Significant)	None required	Minor (Not Significant)
	Gannet	Negligible	High	M005 M014 M016 M018 M019	Minor (Not Significant)		Minor (Not Significant)

Activity and impact	Receptor	Magnitude of impact	Receptor sensitivity or value	Embedded mitigation measures	Significance of effect (significance)	Further environmental mitigation	Significance of residual effect (significance)
				M022 M025 M031 M033 M036			
Barrier effect	Fulmar	Negligible	High	M001 M014	Minor (Not Significant)	None required	Minor (Not Significant)
	Migratory birds	Negligible	High	M018 M019 M033 M036	Minor (Not Significant)	None required	Minor (Not Significant)
Long-term habitat loss (i.e. duration of the Offshore Project)	Kittiwake	Negligible	High	M001 M002	Minor (Not Significant)	Non required	Minor (Not Significant)
	Great black-backed gull	Negligible	High	M004 M005 M018	Minor (Not Significant)		Minor (Not Significant)
	Herring gull	Negligible	High	M019	Minor (Not Significant)		Minor (Not Significant)
	Arctic tern	Negligible	High	M022	Minor (Not Significant)		Minor (Not Significant)
	Guillemot	Negligible	High	M025	Minor (Not Significant)		Minor (Not Significant)
	Razorbill	Negligible	High	M031	Minor (Not Significant)		Minor (Not Significant)
	Puffin	Negligible	High	M033	Minor (Not Significant)		Minor (Not Significant)
	Red-throated diver	Negligible	High	M036	Minor (Not Significant)		Minor (Not Significant)
	Great northern diver	Negligible	High		Minor (Not Significant)		Minor (Not Significant)
	Fulmar	Negligible	High		Minor (Not Significant)		Minor (Not Significant)
	Manx shearwater	Negligible	High		Minor (Not Significant)		Minor (Not Significant)
Gannet	Negligible	High		Minor (Not Significant)	Minor (Not Significant)		
Response to artificial lighting	Fulmar	Negligible	High	M014	Minor (Not Significant)	None required	Minor (Not Significant)
	Manx shearwater	Negligible	Low	M016 M019	Negligible (Not Significant)		Negligible (Not Significant)
	Storm petrel	Negligible	Medium	M022	Negligible (Not Significant)		Negligible (Not Significant)
	Leach's petrel	Negligible	High	M025 M031 M033	Minor (Not Significant)		Minor (Not Significant)

Activity and impact	Receptor	Magnitude of impact	Receptor sensitivity or value	Embedded mitigation measures	Significance of effect (significance)	Further environmental mitigation	Significance of residual effect (significance)
Decommissioning Phase							
Temporary habitat loss and disturbance	Kittiwake	Negligible	Low	M004 M010 M014 M018 M022 M031 M033	Negligible (Not Significant)	None required	Negligible (Not Significant)
	Guillemot	Negligible	Medium		Negligible (Not Significant)		Negligible (Not Significant)
	Razorbill	Negligible	Low		Negligible (Not Significant)		Negligible (Not Significant)
	Puffin	Negligible	Medium		Negligible (Not Significant)		Negligible (Not Significant)
	Red-throated diver	Low	High		Minor (Not Significant)		Minor (Not Significant)
	Great northern diver	Negligible	Medium		Negligible (Not Significant)		Negligible (Not Significant)
	Gannet	Negligible	Low		Negligible (Not Significant)		Negligible (Not Significant)
Indirect effects through effects on prey species	Kittiwake	Negligible	High	M004 M010 M014 M018 M022 M031 M033	Minor (Not Significant)	None required	Minor (Not Significant)
	Great black-backed gull	Negligible	High		Minor (Not Significant)		Minor (Not Significant)
	Herring gull	Negligible	Low		Negligible (Not Significant)		Negligible (Not Significant)
	Arctic tern	Negligible	High		Minor (Not Significant)		Minor (Not Significant)
	Guillemot	Negligible	High		Minor (Not Significant)		Minor (Not Significant)
	Razorbill	Negligible	Medium		Negligible (Not Significant)		Negligible (Not Significant)
	Puffin	Negligible	High		Minor (Not Significant)		Minor (Not Significant)
	Red-throated diver	Negligible	High		Minor (Not Significant)		Minor (Not Significant)
	Great northern diver	Negligible	Medium		Negligible (Not Significant)		Negligible (Not Significant)
	Fulmar	Negligible	Medium		Negligible (Not Significant)		Negligible (Not Significant)
	Manx shearwater	Negligible	Medium		Negligible (Not Significant)		Negligible (Not Significant)
	Gannet	Negligible	Medium		Negligible (Not Significant)		Negligible (Not Significant)
Response to artificial lighting	Fulmar	Negligible	High	M004 M010 M014 M018 M022 M031 M033	Minor (Not Significant)	None required	Minor (Not Significant)
	Manx shearwater	Negligible	Low		Negligible (Not Significant)		Negligible (Not Significant)
	Storm petrel	Negligible	Medium		Negligible (Not Significant)		Negligible (Not Significant)
	Leach's petrel	Negligible	High		Minor (Not Significant)		Minor (Not Significant)

24.11 CHAPTER 15: OFFSHORE ARCHAEOLOGY AND CULTURAL HERITAGE

Table 24.10: Summary of assessment of residual effects for Offshore Archaeology and Cultural Heritage

Activity and impact	Receptor	Magnitude of impact	Receptor sensitivity or value	Embedded mitigation measures	Significance of effect (significance)	Further environmental mitigation	Significance of residual effect (significance)
Construction							
Impact 1: Direct impact (e.g. drilling, foundation construction or removal, seabed levelling, ploughing and cable lay, cable protections etc.).	<i>Maju</i> (Canmore ID 217551)	Low adverse	High	M007, M008, M009	Minor Adverse (Not significant)	N/A	Minor Adverse (Not significant)
	Geophysical Anomalies	No change	High	M008	Neutral (Not significant)	N/A	Neutral (Not significant)
	Palaeolandscape features	Low adverse	Medium	M007	Minor Adverse (Not significant)	N/A	Minor Adverse (Not significant)
	Palaeo-environmental Remains	Low adverse	Medium	M007	Minor Adverse (Not significant)	N/A	Minor Adverse (Not significant)
	Unknown archaeological remains from all periods	Medium adverse	High	M007, M008, M009	Moderate Adverse (Significant)	N/A	Moderate Adverse (Significant)
Impact 2: Indirect impact (e.g. vibration from drilling piles, suspended sediment, changes in current leading to scour/erosion or deposition, etc.)	<i>Maju</i> (Canmore ID 217551)	Low adverse	High	M007, M008, M009	Minor Adverse (Not significant)	N/A	Minor Adverse (Not significant)
	Geophysical Anomalies	No change	High	M008	Neutral (Not significant)	N/A	Neutral (Not significant)
	Palaeolandscape features	Negligible adverse	Medium	M007	Negligible Adverse (Not significant)	N/A	Negligible Adverse (Not significant)
	Palaeo-environmental Remains	Negligible adverse	Medium	M007	Negligible Adverse (Not significant)	N/A	Negligible Adverse (Not significant)
	Unknown archaeological remains from all periods	Low adverse	High	M007, M008, M009	Minor Adverse (Not significant)	N/A	Minor Adverse (Not significant)
Operation and maintenance							
Impact 3: Direct Impact (e.g. repairs, inadvertent loss of equipment or material, cable protection replacement)	<i>Maju</i> (Canmore ID 217551)	Low adverse	High	M007, M008	Minor Adverse (Not significant)	N/A	Minor Adverse (Not significant)
	Geophysical Anomalies	No change	High	M008	Neutral (Not significant)	N/A	Neutral (Not significant)
	Palaeolandscape features	Negligible adverse	Medium	M007	Negligible Adverse (Not significant)	N/A	Negligible Adverse (Not significant)
	Palaeo-environmental Remains	Negligible adverse	Medium	M007	Negligible Adverse (Not significant)	N/A	Negligible Adverse (Not significant)
	Unknown archaeological remains from all periods	Low adverse	High	M007	Minor Adverse (Not significant)	N/A	Minor Adverse (Not significant)
Impact 4: Indirect impact (e.g. burial or scour/erosion)	<i>Maju</i> (Canmore ID 217551)	Low adverse	High	M007, M008	Minor Adverse (Not significant)	N/A	Minor Adverse (Not significant)
	Geophysical Anomalies	No change	High	M008	Neutral (Not significant)	N/A	Neutral (Not significant)
	Palaeolandscape features	Negligible adverse	Medium	M007	Negligible Adverse (Not significant)	N/A	Negligible Adverse (Not significant)

Activity and impact	Receptor	Magnitude of impact	Receptor sensitivity or value	Embedded mitigation measures	Significance of effect (significance)	Further environmental mitigation	Significance of residual effect (significance)	
	Palaeo-environmental Remains	Negligible adverse	Medium	M007	Negligible Adverse (Not significant)	N/A	Negligible Adverse (Not significant)	
	Unknown archaeological remains from all periods	Low adverse	High	M007	Minor Adverse (Not significant)	N/A	Minor Adverse (Not significant)	
Impact 5: Direct impacts that affect the setting of Designated and significant non-Designated Onshore Archaeology and Cultural Heritage assets as a result of Offshore Project infrastructure	SM3926 Teampull Eoin, chapel, graveyard & settlement, Port Mhór Bragar, Lewis	Medium	High	None Applicable	Moderate (Significant)	N/A	Moderate (Significant)	
	SM1669 Dun Borve, broch	Medium	High	None Applicable	Moderate (Significant)	N/A	Moderate (Significant)	
	Other Designated and Non-designated Onshore Archaeology and Cultural Heritage assets	See assessment conclusions presented in Appendix 15.2, Volume 2c						Neutral to Minor Adverse (Not Significant)
Decommissioning								
Impact 6: Direct Impacts (e.g. Foundation Removal, Cable and Cable Protections Removal etc.)	<i>Maju</i> (Canmore ID 217551)	Low adverse	High	M007, M008	Minor Adverse (Not significant)	N/A	Minor Adverse (Not significant)	
	Geophysical Anomalies	No change	High	M008	Neutral (Not significant)	N/A	Neutral (Not significant)	
	Palaeolandscape features	Negligible adverse	Medium	M007	Negligible Adverse (Not significant)	N/A	Negligible Adverse (Not significant)	
	Palaeo-environmental Remains	Negligible adverse	Medium	M007	Negligible Adverse (Not significant)	N/A	Negligible Adverse (Not significant)	
	Unknown archaeological remains from all periods	Low adverse	High	M007	Minor Adverse (Not significant)	N/A	Minor Adverse (Not significant)	
Impact 7: Indirect Impact (e.g. From Suspended Sediment, Changes in Current Leading to Scour Erosion or Deposition, etc.)	<i>Maju</i> (Canmore ID 217551)	Low adverse	High	M007, M008	Minor Adverse (Not significant)	N/A	Minor Adverse (Not significant)	
	Geophysical Anomalies	No change	High	M008	Neutral (Not significant)	N/A	Neutral (Not significant)	
	Palaeolandscape features	Negligible adverse	Medium	M007	Negligible Adverse (Not significant)	N/A	Negligible Adverse (Not significant)	
	Palaeo-environmental Remains	Negligible adverse	Medium	M007	Negligible Adverse (Not significant)	N/A	Negligible Adverse (Not significant)	
	Unknown archaeological remains from all periods	Low adverse	High	M007	Minor Adverse (Not significant)	N/A	Minor Adverse (Not significant)	

24.12 CHAPTER 16: SHIPPING AND NAVIGATION

Table 24.11: Summary of assessment of residual effects for Shipping and Navigation

Activity and Impact	Receptor	Frequency of Occurrence	Severity of Consequence	Embedded Mitigation Measures			Significance of effect (significance)	Further environmental Mitigation	Assessment of Residual Effect (significance)
Construction									
Vessel displacement	All vessels	Frequent	Negligible	M010 M011 M012 M013	M014 M015 M022 M026 M029	M033 M033 M039 M039	Tolerable with Mitigation (Not Significant)	N/A	Tolerable with Mitigation (Not Significant)
Increased third-party vessel to third-party vessel collision risk	All vessels	Extremely Unlikely	Serious	M010 M011 M012	M013 M014 M022 M026	M031 M033 M039	Tolerable with Mitigation (Not Significant)	N/A	Tolerable with Mitigation (Not Significant)
Third-party to Offshore Project vessel collision risk	All vessels	Remote	Serious	M010 M011 M012 M013	M014 M015 M022 M024 M026	M029 M031 M033 M039	Tolerable with Mitigation (Not Significant)	N/A	Tolerable with Mitigation (Not Significant)
Reduced access to local ports, harbours, and facilities	All vessels	Remote	Moderate	M011 M012	M015 M022 M024	M026 M029	Tolerable with Mitigation (Not Significant)	N/A	Tolerable with Mitigation (Not Significant)
Operation and maintenance									
Vessel displacement	All vessels	Frequent	Negligible	M010 M011 M012 M013	M014 M015 M022 M026	M029 M033 M039	Tolerable with Mitigation (Not Significant)	N/A	Tolerable with Mitigation (Not Significant)
Increased third-party vessel to third-party vessel collision risk	All vessels	Extremely Unlikely	Serious	M010 M011 M012 M013	M014 M022 M026 M029	M031 M033 M039	Tolerable with Mitigation (Not Significant)	N/A	Tolerable with Mitigation (Not Significant)
Third-party to Offshore Project vessel collision risk	All vessels	Extremely Unlikely	Serious	M010 M011 M012 M013 M014	M015 M022 M024 M026	M029 M031 M033 M039	Tolerable with Mitigation (Not Significant)	N/A	Tolerable with Mitigation (Not Significant)
Reduced access to local ports, harbours, and facilities	All vessels	Extremely Unlikely	Moderate	M012 M014 M015	M022 M024 M026	M029 M033 M039	Broadly Acceptable (Not Significant)	N/A	Broadly Acceptable (Not Significant)
Powered vessel to structure collision risk	All vessels	Extremely Unlikely	Serious	M010 M011	M013 M015	M026 M029	Tolerable with Mitigation	N/A	Tolerable with Mitigation (Not Significant)

Activity and Impact	Receptor	Frequency of Occurrence	Severity of Consequence	Embedded Mitigation Measures			Significance of effect (significance)	Further environmental Mitigation	Assessment of Residual Effect (significance)
				M012	M016	M031			
Drifting vessel to structure allision risk	All vessels	Remote	Moderate	M010 M011 M012 M013	M014 M015 M016 M026	M031 M033 M039	(Not Significant) Tolerable with Mitigation (Not Significant)	N/A	Tolerable with Mitigation (Not Significant)
Internal vessel to structure allision risk	All vessels	Remote	Moderate	M010 M011 M012 M013	M014 M015 M016 M026	M031 M033 M039	Tolerable with Mitigation (Not Significant)	N/A	Tolerable with Mitigation (Not Significant)
Reduction in under keel clearance	All vessels	Reasonably Probable	Minor	M002 M010	M011 M012	M030 M031	Tolerable with Mitigation (Not Significant)	N/A	Tolerable with Mitigation (Not Significant)
Vessel interaction with subsea cables	All vessels	Extremely Unlikely	Moderate	M002 M010	M011 M012	M026 M030	Broadly Acceptable (Not Significant)	N/A	Broadly Acceptable (Not Significant)
Reduction in emergency response capability	All vessels	Extremely Unlikely	Serious	M002 M010 M011 M012	M014 M015 M016 M029	M030 M031 M033 M039	Tolerable with Mitigation (Not Significant)	N/A	Tolerable with Mitigation (Not Significant)
Decommissioning									
Vessel displacement	All vessels	Frequent	Negligible	M010 M011 M012 M013	M014 M015 M020	M026 M033 M039	Tolerable with Mitigation (Not Significant)	N/A	Tolerable with Mitigation (Not Significant)
Increased third-party vessel to third-party vessel collision risk	All vessels	Extremely Unlikely	Serious	M010 M011 M012 M013	M014 M020 M026	M031 M033 M039	Tolerable with Mitigation (Not Significant)	N/A	Tolerable with Mitigation (Not Significant)
Third-party to Offshore Project vessel collision risk	All vessels	Remote	Serious	M010 M011 M012 M013	M014 M015 M020 M026	M029 M031 M033 M039	Tolerable with Mitigation (Not Significant)	N/A	Tolerable with Mitigation (Not Significant)
Reduced access to local ports, harbours, and facilities	All vessels	Remote	Moderate	M011 M012	M015 M020	M026 M029	Tolerable with Mitigation (Not Significant)	N/A	Tolerable with Mitigation (Not Significant)

24.13 CHAPTER 17: MILITARY AND CIVIL AVIATION

Table 24.12: Summary of assessment of residual effects for Military and Civil Aviation

Activity and impact	Receptor	Magnitude of impact	Receptor sensitivity	Embedded mitigation measures	Significance of effect (significance)	Further environmental mitigation	Significance of residual effect (significance)
Construction							
Creation of an aviation obstacle environment	Military Low Flying Activity	Low	Medium	M017, M033	Minor adverse (Not Significant)	N/A	N/A
	Aircraft Flying Stornoway Airport IFP	Medium	High		Moderate Adverse (Potentially Significant)	A008	Minor adverse (Not Significant)
	Offshore Helicopter Operations	Low	Medium	M017, M033	Minor Adverse (Not Significant)	N/A	N/A
	SAR Helicopters	Low	Medium	M010, M017, M033	Minor Adverse (Not Significant)	N/A	N/A
Increased air traffic related to wind farm activities	Existing air traffic	Low	Medium	M017, M033	Minor Adverse (Not Significant)	N/A	N/A
Operation and maintenance							
Creation of an aviation obstacle environment	Military Low Flying Activity	Low	Medium	M017, M033	Minor Adverse (Not Significant)	N/A	N/A
	Offshore Helicopter Operations	Low	Medium	M017, M033	Minor Adverse (Not Significant)	N/A	N/A
	SAR Helicopters	Low	Medium	M010, M017, M033	Minor Adverse (Not Significant)	N/A	N/A
Increased air traffic related to wind farm activities	Existing air traffic	Low	Medium	M017, M033	Minor Adverse (Not Significant)	N/A	N/A
Impact to military radars	Benbecula/Beinn nam Fadhla Air Defence Radar	High	High	N/A	Major Adverse (Significant)	A009	Minor Adverse (Not Significant)
Impact to NATS radio communications	ATS	Medium	High	N/A	Minor Adverse (Not Significant)	N/A	N/A
Decommissioning							
Creation of an aviation obstacle environment	Military Low Flying Activity	Low	Medium	M017, M033	Minor Adverse (Not Significant)	N/A	N/A
	Offshore Helicopter Operations	Low	Medium	M017, M033	Minor Adverse (Not Significant)	N/A	N/A
	SAR Helicopters	Low	Medium	M010, M017, M033	Minor Adverse (Not Significant)	N/A	N/A
Increased air traffic related to wind farm activities	Existing air traffic	Low	Medium	M017, M033	Minor Adverse (Not Significant)	N/A	N/A

24.14 CHAPTER 18: SEASCAPE, LANDSCAPE AND VISUAL IMPACT ASSESSMENT

24.14.1 INTRODUCTION

- 24.14.1.1 The seascape, landscape and visual impact assessment (SLVIA) considers how local people, as well as visitors will be able to see the Offshore Project during all of its project phases (construction, operation and maintenance and decommissioning) from various viewpoints. This includes coastal settlements, roads, high points (elevated sites and locations) and coastal viewpoints, recreational cycling and walking routes, visitor attractions such as beaches, historic sites and nature reserves, and caravan and camping sites.
- 24.14.1.2 It also considers how the Offshore Project could impact the Regional Coastal Character, the Landscape Character, and any Landscape Planning Designations such as National Scenic Areas and Wild Land Areas (as designated through relevant legislation and NatureScot guidance).
- 24.14.1.3 Effects on seascape, landscape and visual receptors arise because the Offshore Project will be visible during daylight hours from some of the viewpoints identified. Construction activities and the subsequent presence of structures such as the Wind Turbine Generators and Offshore Substation Platform during the operation of the Offshore Project could be perceived to change the character and qualities of the seascape and landscape.
- 24.14.1.4 During hours of darkness, lighting on vessels and structures needed for navigational and aviation safety will also be visible from some areas of the coast, which may also affect those with views out to sea.
- 24.14.1.5 The effects identified during the construction phase are typically short-term and temporary, while those during the operation and maintenance stage are typically longer-term but reversible.

24.14.2 BASELINE ENVIRONMENT

- 24.14.2.1 Data to inform the SLVIA was sourced from publicly available information regarding landscape, the descriptions of Regional Coastal and Landscape Characters and landscape designations. Field surveys were also undertaken that involved day and night-time viewpoint photography across the Study Area to establish the baseline environment.
- 24.14.2.2 Detailed terrain models were used together with the photography to create wireline imagery. This enabled the presence of the Offshore Project to be visualised in relation to the existing environment. It also established the Zones of Theoretical Visibility, which are the places from where people would be able to see the Offshore Project.
- 24.14.2.3 The baseline environment for the SLVIA is established as “the area in which the development may be visible” (in line with GLVIA3, Landscape Institute and Institute for Environmental Management and Assessment, 2013). The Study Area therefore encompasses the Isle of Lewis/Eilean Leòdhais,

the majority of the Isle of Harris/Na Hearadh and its surrounding seascape and islands, including the Flannan Isles/Na h-Eileanan Flannach, off the northwest coast of Scotland/Alba and forming the northern most of the Outer Hebrides/Na h-Eileanan Siar (also referred to as the 'Western Isles').

- 24.14.2.4 There is great visual diversity across the SLVIA Study Area, with north Lewis/Eilean Leòdhais embodying a plateau of low-lying peatland extending southwards to bold, rugged hills in South Lewis/Eilean Leòdhais and North Harris/Na Hearadh. The sea has a strong influence as, from many viewpoints, there is often as much seascape visible as landscape.
- 24.14.2.5 The coastline nearest to the Turbine Area within the SLVIA Study Area is generally rural in character, predominated by the linear patterns of crofting and is strongly associated with the sea. There are numerous settlements along the coastline, including the crofting townships in Ness/Nis including Eoropie/Eòrapaidh, the Port of Ness/Port Nis and Cross/Cros, North and South Galson/Gàbhsann bho Dheas, Borve/Borgh, Shader/Siadar an Rubha, Barvas/Barabhas, Arnol/Àrnoil, Bragar/Bhràdhagair, Shawbost/Siabost) and Carloway/Càrlabagh.
- 24.14.2.6 The coastal character of the SLVIA Study Area is defined at the national level as Type 13: Low Rocky Island Coasts. 17 Regional Coastal Character Areas are defined along the coastline and hinterland of the SLVIA Study Area, which identify a strong visual relationship with the sea and tidal waters and coastal landscapes.
- 24.14.2.7 Much of the SLVIA Study Area experiences very low levels of light radiance at night, particularly across uninhabited areas of moorland and hills. However, in some specific areas, light sources during hours of darkness are identified as coming from houses, villages, and industrial and commercial locations. Lighting on onshore wind turbines and navigational safety lighting on buoys at sea can also be seen at night.

24.14.3 EMBEDDED ENVIRONMENTAL MEASURES

- 24.14.3.1 A range of environmental measures which relate to the SLVIA are embedded as part of the Offshore Project design to remove or reduce significant environmental effects as far as possible. Key measures for the SLVIA are:
- M014: Marking and lighting of the Array Area in agreement with Northern Lighthouse Board (NLB) and as per the requirements of International Association of Lighthouse Authorities (IALA) Recommendation O-139 (IALA, 2021a) and Guidance G1162 (IALA, 2021b). This will include a buoyed construction area;
 - M033: A Lighting and Marking Plan (LMP) will be developed prior to commencement of construction (building on the Outline LMP, Volume 3) in compliance with legislative requirements and best practice standards and guidance and adhered to;
 - M036: The Project will only install Wind Turbine Generators and Offshore Substation Platform (if required) above sea infrastructure within the Turbine Area;

- M040: Due regard will be given to landscape and visual design principles in the Design Specification Layout Plan post consent, with consideration of the seascape, landscape and visual impacts of the Offshore Project on the NSA.

24.14.4 LIKELY SIGNIFICANT RESIDUAL EFFECTS

24.14.4.1 Despite the application of appropriate embedded measures, the potential for Significant adverse effects to occur has been assessed in relation to a number of viewpoints during the construction, operation and maintenance and decommissioning phases of the Offshore Project. **Table 24.13** presents a summary of assessment outcomes from the Seascape, Landscape and Visual Impact Assessment.

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Table 24.13 Summary of assessment of residual effects for Seascape, Landscape and Visual Impact Assessment

Activity and impact	Assessment Outcome
All phases: Construction, operation and maintenance and decommissioning	
Effects on visual receptors/views	<p>Significant effects occurring during the day-time at Viewpoint:</p> <p>1 Butt of Lewis/<i>Rubha Robhanais</i>; 2 Cross/<i>Cros</i>; 3 North Galston/<i>Gàbhsann</i>; 4, Melbost Borve/<i>Mealabost Borgh</i>; 5 Shader/<i>Siadar an Rubha</i> Core Path; 6 Upper Shader/<i>Siadar Uarach</i>; 7 Clach an Truiseil; 8 Upper Barvas/<i>Barabhas</i> Cemetery; 9 Upper Barvas/<i>Barabhas</i>; 10 Barvas/<i>Barabhas</i> Beach; 11 North of Brue/<i>Brù</i>; 12 Loch na Muilne; 13 Barvas/<i>Barabhas</i>; 14 Arnol/<i>Àrnoil</i> Blackhouse; 15 Arnol/<i>Àrnoil</i> Village; 16 Bragar/<i>Bhràdhagair</i> Beach; 17 Sheiling near Loch Urghag (between Brue/<i>Brù</i> and Arnol/<i>Àrnoil</i>); 18 Shawbost/<i>Siabost</i> Core Path; 19 A858 Abhainn Arnol/<i>Àrnoil</i>; 20 Bragar/<i>Bhràdhagair</i>; 21 A857 (inland south of Barvas/<i>Barabhas</i>); 23 Shawbost/<i>Siabost</i>; 24 Dalbeg/<i>Dhail Beag</i> Beach; 25 Dalmore/<i>Dail Mhor</i> Beach; 26 Beinn na Cloich; 28 Doune Carloway/<i>Càrlabhadh</i>; 29 Bosta/<i>Bostadh</i>; 30 Gallan Head/<i>Àird Uig</i>; 32 Reef Beach; 31 Valtos; 33 Forsnabhal; 34 Camas na Clibhe; 36 Carishader/<i>Cairsiadar</i>; 37 Callanish/<i>Calanais</i>; 38 Mangersta/<i>Mangurstadh</i> Head; 39 Mealaisbhal; 41 Sgalabhal.</p>
Effects on coastal character	<p>Significant effects occurring to Coastal Character Areas (CCAs):</p> <p>CCA2 Eoropie/<i>Eòrapaidh</i>; CCA3 Borve/<i>Borgh</i>, Shader/<i>Siadar an Rubha</i> and Galston/<i>Gàbhsann</i> low rocky coast; CCA4 Barvas Sands/<i>Barabhas Sands</i> and Àird Bharabhais; CCA5 Bragar/<i>Bhràdhagair</i> and Port Arnol/<i>Àrnoil</i>; CCA6 Loch Shiaboist; CCA7 Dalbeg/<i>Dhail Beag</i> and Dalmore/<i>Dail Mhor</i> coast to Aird Laimishader/<i>Àird Laimisiadair</i>; CCA11 Bernera Islands; CCA14 An Caolas including Reef Beach and Cliff Beach/<i>Camas na Clibhe</i>; CCA15 Gallan Head/<i>Gallan Beag</i>; CCA17 Mangersta/<i>Mangurstadh</i> Head.</p>
Effects on landscape character	<p>Significant effects occurring to Landscape Character Types (LCTs):</p> <p>Boggy Moorland – Outer Hebrides (LCT 322); Prominent Hills and Mountains (LCT 326).</p>
Effects on Special Landscape Qualities (SLQs)	<p>Significant effects occurring to the Special Landscape Qualities of the South Lewis, Harris and North Uist NSA:</p> <p>Sub area 1 – The Outer Northwest Lewis/<i>Leòdhas</i> Coastline and Sub-area 2 – Lewis/<i>Leòdhas</i> Coastal Cnoc and Lochan:</p> <ul style="list-style-type: none"> • <i>'The very edge of Europe'</i> • <i>'A rich variety of exceptional scenery'</i> • <i>'A great diversity of seascapes'</i> • <i>'Intervisibility between landscapes'</i> • <i>'The close interplay of the natural world, settlement and culture'</i> <p>Sub-area 2 also has an additional SLQ for which likely significant effects are predicted:</p> <ul style="list-style-type: none"> • <i>'Extensive machair and dune systems with expansive beaches'</i> <p>Sub area 4 - The Lewis/<i>Leòdhas</i> Hills and Mountains</p> <ul style="list-style-type: none"> • <i>'The wild mountainous character'</i>
Operation and maintenance phase only	
Effects of aviation and marine navigation lighting	<p>Significant effects occurring during the night-time at Viewpoint:</p> <p>1 Butt of Lewis/<i>Rubha Robhanais</i>; 2 Cross/<i>Cros</i>; 4, Melbost Borve/<i>Mealabost Borgh</i>; 5 Shader/<i>Siadar an Rubha</i> Core Path; 6 Upper Shader/<i>Siadar Uarach</i>; 7 Clach an Truiseil; 8 Upper Barvas/<i>Barabhas</i> Cemetery; 9 Upper Barvas/<i>Barabhas</i>; 10 Barvas/<i>Barabhas</i> Beach; 11 North of Brue/<i>Brù</i>; 12 Loch na Muilne; 13 Barvas/<i>Barabhas</i>; 14 Arnol/<i>Àrnoil</i> Blackhouse; 15 Arnol/<i>Àrnoil</i> Village; 16 Bragar/<i>Bhràdhagair</i> Beach; 17 Sheiling near Loch Urghag (between Brue/<i>Brù</i> and Arnol/<i>Àrnoil</i>); 18 Shawbost/<i>Siabost</i> Core Path; 19 A858 Abhainn Arnol/<i>Àrnoil</i>; 20 Bragar/<i>Bhràdhagair</i>; 21 A857 (inland south of Barvas/<i>Barabhas</i>); 23 Shawbost/<i>Siabost</i>; 24 Dalbeg/<i>Dhail Beag</i> Beach; 25 Dalmore/<i>Dail Mhor</i> Beach; 26 Beinn na Cloich; 28 Doune Carloway/<i>Càrlabhadh</i>; 29 Bosta/<i>Bostadh</i>; 30 Gallan Head/<i>Àird Uig</i>; 31 Valtos; 32 Reef Beach; 33 Forsnabhal; 34 Camas na Clibhe.</p>

Activity and impact		Assessment Outcome
	On coastal character areas	<p>Significant effects occurring during the night-time to CCAs:</p> <p>CCA2 Eoropie/ Eòrapaidh; CCA3 Borge/Borgh, Shader/Siadar an Rubha and Galston/Gàbhsann low rocky coast; CCA4 Barvas Sands/Barabhas Sands and Àird Bharabhais; CCA5 Bragar/Bhràdhagair and Port Arnol/Àrnoil; CCA6 Loch Shiaboist; CCA7 Dalbeg/Dhail Beag and Dalmore/Dail Mhor coast to Aird Laimishader/Àird Laimisiadair; CCA11 Bernera Islands; CCA14 An Caolas including Reef Beach and Cliff Beach/Camas na Clibhe; CCA15 Gallan Head/Gallan Beag; CCA17 Mangersta/Mangurstadh Head.</p>
All phases: Construction, operation and maintenance and decommissioning		
Cumulative effects on visual receptors/views, coastal character, landscape character and SLQs		No Significant cumulative effects have been identified in relation to the Offshore Project from SLVIA resulting from construction, operation and maintenance, and decommissioning activities.
Whole project effects on visual receptors/views, coastal character, landscape character and SLQs		<p>The magnitude of change to views of the Offshore Project with the addition of the OTW Project is expected to increase, but to remain Major (Significant) (with major being the maximum assessment threshold) for the following Viewpoints:</p> <ul style="list-style-type: none"> • Viewpoint 8: Upper Barvas/Barabhas Cemetery. • Viewpoint 9: Upper Barvas/Barabhas Uarach. • Viewpoint 11: North of Brue/Brù. • Viewpoint 13: Barvas/Barabhas. • Viewpoint 43: Druim nan Carnan. • Viewpoint 44: Morven. <p>The magnitude of change to views of the Offshore Project with the addition of the OTW Project is expected to increase, but to remain Major (Significant) (with major being the maximum assessment threshold) for the following Coastal Character Areas:</p> <ul style="list-style-type: none"> • CCA4, its associated coastal areas of Boggy Moorland (LCT 322) and adjacent area of Gently Sloping Crofting (LCT 317). <p>No Significant whole projects effects of greater significance compared to the impacts Considered for the Offshore Project alone were identified in SLVIA from construction, operation and maintenance, and decommissioning activities.</p>
Transboundary effects on visual receptors/views, coastal character, landscape character and SLQs		No Significant transboundary effects have been identified in relation to the Offshore Project in SLVIA during construction, operation and maintenance, and decommissioning activities.

24.15 CHAPTER 19: OFFSHORE AIRBORNE NOISE

Table 24.14: Summary of assessment of residual effects for Offshore Airborne Noise

Activity and impact	Receptor	Time-period	Magnitude of impact	Receptor and sensitivity	Embedded mitigation measures	Significance of effect (significance)	Further environmental mitigation	Significance of residual effect (significance)
Construction								
Offshore percussive piling noise	NSR1 Garenin/ <i>Na Garrannan</i>	Day	Slight	High	M019	Negligible (Not Significant)	N/A	N/A
		Evening	Low	High		Minor (Not Significant)	N/A	N/A
		Night	High	High		Major (Significant)	A007	Minor (Not Significant)
	NSR2 Dalmore/ <i>Dail Mhor</i>	Day	Slight	High	M019	Negligible (Not Significant)	N/A	N/A
		Evening	Low	High		Minor (Not Significant)	N/A	N/A
		Night	High	High		Major (Significant)	A007	Minor (Not Significant)
	NSR3 South Shawbost/ <i>Siabost bho Dheas</i>	Day	Slight	High	M019	Minor (Not Significant)	N/A	N/A
		Evening	Medium	High		Moderate (Significant)	A007	Minor (Not Significant)
		Night	High	High		Major (Significant)	A007	Minor (Not Significant)
	NSR4 Labost	Day	Slight	High	M019	Minor (Not Significant)	N/A	N/A
		Evening	Medium	High		Moderate (Significant)	A007	Minor (Not Significant)
		Night	High	High		Major (Significant)	A007	Minor (Not Significant)
	NSR5 Brue/ <i>Brù</i>	Day	Slight	High	M019	Negligible (Not Significant)	N/A	N/A
		Evening	Low	High		Minor (Not Significant)	N/A	N/A
		Night	High	High		Major (Significant)	A007	Minor (Not Significant)
	NSR6 Ballantrushal/ <i>Baile an Truiseil</i>	Day	Slight	High	M019	Negligible (Not Significant)	N/A	N/A
		Evening	Low	High		Minor (Not Significant)	N/A	N/A
		Night	High	High		Major (Significant)	A007	Minor (Not Significant)

Activity and impact	Receptor	Time-period	Magnitude of impact	Receptor and sensitivity	Embedded mitigation measures	Significance of effect (significance)	Further environmental mitigation	Significance of residual effect (significance)
Operation and maintenance								
Operational WTN	NSR1 Garenin/ <i>Na Gearrannan</i>	Daytime and night-time	Low	High	N/A	Negligible/Minor (Not Significant)	N/A	N/A
	NSR2 Dalmore/ <i>Dail Mhor</i>	Daytime and night-time	Low	High	N/A	Negligible/Minor (Not Significant)	N/A	N/A
	NSR3 South Shawbost/ <i>Siabost bho Dheas</i>	Daytime and night-time	Low	High	N/A	Negligible/Minor (Not Significant)	N/A	N/A
	NSR4 Labost	Daytime and night-time	Low	High	N/A	Negligible/Minor (Not Significant)	N/A	N/A
	NSR5 Brue/ <i>Brù</i>	Daytime and night-time	Low	High	N/A	Negligible/Minor (Not Significant)	N/A	N/A
	NSR6 Ballantrushal/ <i>Baile an Truiseil</i>	Daytime and night-time	Low	High	N/A	Negligible/Minor (Not Significant)	N/A	N/A
	NSR7 17A Ballantrushal/ <i>Baile an Truiseil</i>	Daytime and night-time	Low	High	N/A	Negligible/Minor (Not Significant)	N/A	N/A
	NSR8 Morven/ <i>A' Mhorbhairne</i>	Daytime and night-time	Low	High	N/A	Negligible/Minor (Not Significant)	N/A	N/A
	NSR9 Cnoc A Charnain	Daytime and night-time	Low	High	N/A	Negligible/Minor (Not Significant)	N/A	N/A

24.16 CHAPTER 20: OTHER SEA USERS AND RECREATION

Table 24.15: Summary of assessment of residual effects for Other Sea Users and Recreation

Activity and Impact	Receptor	Magnitude of Impact	Sensitivity	Embedded Mitigation	Significance of Effect	Further Environmental Mitigation	Assessment of Residual Effect (significance)
Construction and Decommissioning							
Loss of access to aquaculture support vessels due to the presence of installation safety zones and construction activities	Multinational aquaculture companies	Low	Low	M019, M011, M012, M013, M015, M020	Negligible	N/A	Negligible
	Local aquaculture companies	Low	High		Minor (Not Significant)		Minor (Not Significant)
Increased demand for port services during construction	Small ports	Low	High	M019, M012, M013, M015, M020	Minor (Not Significant)	N/A	Minor (Not Significant)
	Stornoway port	Low	Low		Negligible		Negligible
Loss of access to boat tour routes and other sea users due to installation safety zones and construction activities	Boat tour operators	Low	High	M019, M011, M012, M013, M015, M020, M037	Minor (Not Significant)	N/A	Minor (Not Significant)
	Surfing	Low	High		Minor (Not Significant)		Negligible
	Other sea users	Low	High		Minor (Not Significant)		Minor (Not Significant)
Loss of access to recreational sea anglers and specific angling tour operators due to the presence of installation safety zones and construction activities	Recreational sea angling	Low	Medium	M019, M028, M011, M012, M013, M015, M020	Minor (Not Significant)	N/A	Minor (Not Significant)
	Angling tour operators	Low	High		Minor (Not Significant)		Minor (Not Significant)
Amenity effects as a result of construction activities	Other sea users and onshore tourism and recreation assets	High	High	M014, M015, M020, M032, M036	Minor (Not Significant)	N/A	Minor (Not Significant)
Operation and maintenance							
Loss of access to aquaculture support vessels due to the presence of surface piercing infrastructure and O&M activities	Multinational aquaculture companies	Low	Low	M011, M012, M013, M015, M025	Negligible	N/A	Negligible
	Local aquaculture companies	Low	High		Minor (Not Significant)		Minor (Not Significant)
Increased demand for port services during O&M	Small ports	Low	High	M012, M013, M015, M025	Minor (Not Significant)	N/A	Minor (Not Significant)
	Stornoway port	Low	Low		Negligible		Negligible
Loss of access to boat tour routes and other sea users due to the presence of surface piercing infrastructure and O&M activities	Boat tour operators	Low	High	M011, M012, M013, M015, M025, M037	Minor (Not Significant)	N/A	Minor (Not Significant)
	Surfing	Low	High		Minor (Not Significant)		Negligible
	Other sea users	Low	High		Minor (Not Significant)		Minor (Not Significant)
Loss of access to recreational sea anglers and specific angling	Recreational sea angling	Low	Medium	M028, M011, M012, M013, M015, M025	Minor (Not Significant)	N/A	Minor (Not Significant)

Activity and Impact	Receptor	Magnitude of Impact	Sensitivity	Embedded Mitigation	Significance of Effect	Further Environmental Mitigation	Assessment of Residual Effect (significance)
tour operators due to the presence of surface piercing infrastructure and O&M activities	Angling tour operators	Low	High		Minor (Not Significant)		Minor (Not Significant)
Permanent amenity effects as a result of permanent installed infrastructure	Other sea users and onshore tourism and recreation assets	High	High	M014, M015, M025, M032, M036	Minor (Not Significant)	N/A	Minor (Not Significant)
Changes to hydrodynamic regime due to presence of Offshore Project infrastructure	Surfers	Negligible	High	M011, M012, M013, M015, M025	Negligible (Not Significant)	N/A	Negligible (Not Significant)

24.17 CHAPTER 21: COMMERCIAL FISHERIES

Table 24.16: Summary of assessment of residual effects for Commercial Fisheries

Activity and Impact	Receptor	Magnitude of Impact	Sensitivity	Embedded mitigation measures	Significance of effect (significance)	Further Environmental Mitigation	Assessment of Residual Effect (Significance)
Construction							
Reduction in access to, or exclusion from established fishing grounds within the Array Area	Potting <12m for lobster, brown crab, ballan wrasse etc	Medium	High	M026 (FMMCP), M027 (CFWG), M028 (liaison roles), M013 (safety zones), M029 (Marine Coordination Centre), M032 (layout info sharing), M036 (Turbine Area)	Moderate Adverse (Potentially Significant)	A001, A002, A003	Minor Adverse (Not Significant)
	Potting >12m for lobster, brown crab, ballan wrasse etc	Medium	Medium		Moderate Adverse (Potentially Significant)	A001, A002, A003	Minor Adverse (Not Significant)
	Potting for nephrops	Negligible	Medium		Negligible (Not Significant)	N/A	Negligible (Not Significant)
	Demersal trawl fishery for monkfish, haddock,	Low	Low		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Demersal trawl fishery for nephrops	Negligible	Low		Negligible (Not Significant)	N/A	Negligible (Not Significant)
	Pelagic trawl targeting mackerel, herring and horse mackerel	Low	Low		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Handline targeting mackerel (and occasional blue fin tuna)	Low	Medium		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Dredge for scallop	Low	Low		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Set nets for white fish and rays	Medium	High		Moderate Adverse (Potentially Significant)	A001, A002, A003	Minor Adverse (Not Significant)
	Commercial diving for shellfish	Low	High		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	All other gears and fisheries	Low	Low		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
Reduction in access to, or exclusion from established fishing grounds within the OCC AoS	Potting <12m for lobster, brown crab, ballan wrasse etc	Medium	High	M026, M027, M028, M029, M030 (survey coord/info sharing), M010 (ERCoP & guard vessels), M032	Moderate Adverse (Potentially Significant)	A002, A003	Minor Adverse (Not Significant)
	Potting >12m for lobster, brown crab, ballan wrasse etc	Low	Medium		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Potting for nephrops	Negligible	Medium		Negligible (Not Significant)	N/A	Negligible (Not Significant)
	Demersal trawl fishery for monkfish, haddock,	Low	Low		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Demersal trawl fishery for nephrops	Negligible	Low		Negligible (Not Significant)	N/A	Negligible (Not Significant)
	Pelagic trawl targeting mackerel, herring and horse mackerel	Low	Low		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Handline targeting mackerel (and occasional blue fin tuna)	Medium	Medium		Moderate Adverse (Potentially Significant)	A002, A003	Minor Adverse (Not Significant)

Activity and Impact	Receptor	Magnitude of Impact	Sensitivity	Embedded mitigation measures	Significance of effect (significance)	Further Environmental Mitigation	Assessment of Residual Effect (Significance)
	Dredge for scallop	Low	Low		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Set nets for white fish and rays	Medium	High		Moderate Adverse (Potentially Significant)	A002, A003	Minor Adverse (Not Significant)
	Commercial diving for shellfish	Low	High		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	All other gears and fisheries	Low	Low		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
Displacement leading to gear conflict and increased fishing pressure on adjacent grounds	Potting <12m for lobster, brown crab, ballan wrasse etc	Medium	High	M026, M027, M002, M019 (boulder/obstruction info), M038 (gear interaction procedures), M021	Moderate Adverse (Potentially Significant)	A001, A002, A003	Minor Adverse (Not Significant)
	Potting >12m for lobster, brown crab, ballan wrasse etc	Low	Medium		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Potting for nephrops	Low	Medium		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Demersal trawl fishery for monkfish, haddock,	Low	Low		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Demersal trawl fishery for nephrops	Low	Low		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Pelagic trawl targeting mackerel, herring and horse mackerel	Low	Low		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Handline targeting mackerel (and occasional blue fin tuna)	Low	Medium		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Dredge for scallop	Low	Low		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Set nets for white fish and rays	Low	High		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Commercial diving for shellfish	Low	High		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
Displacement or disruption of commercially important fish and shellfish resources	Potting <12m for lobster, brown crab, ballan wrasse etc	Medium	Medium	M002 (Cable Installation Plan), M004 (object retrieval), M006 (INNS Plan), M026 (FMMCP), M019 (EMP), M021 (pollution prevention), M021(MARPOL compliance)	Minor Adverse (Not Significant)	Monitoring & update to FMMCP if necessary	Minor Adverse (Not Significant)
	Potting >12m for lobster, brown crab, ballan wrasse etc	Low	Medium		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Potting for nephrops	Low	Medium		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Demersal trawl fishery for monkfish, haddock,	Low	Medium		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Demersal trawl fishery for nephrops	Low	Medium		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)

Activity and Impact	Receptor	Magnitude of Impact	Sensitivity	Embedded mitigation measures	Significance of effect (significance)	Further Environmental Mitigation	Assessment of Residual Effect (Significance)
	Pelagic trawl targeting mackerel, herring and horse mackerel	Low	Medium		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Handline targeting mackerel (and occasional blue fin tuna)	Low	Medium		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Dredge for scallop	Low	Medium		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Set nets for white fish and rays	Low	Medium		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Commercial diving for shellfish	Low	Medium		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	All other gears and fisheries	Low	Medium		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
Increased vessel traffic associated with the Project within fishing grounds leading to interference with fishing activity	Potting <12m for lobster, brown crab, ballan wrasse etc	Low	Medium	M010 (ERCoP, SAR, guard vessels), M029 (Marine Coordination Centre), M022 (NSVMP), M028 (liaison roles), M026, M027, M037 (local vessels)	Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Potting >12m for lobster, brown crab, ballan wrasse etc	Low	Medium		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Potting for nephrops	Low	Medium		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Demersal trawl fishery for monkfish, haddock,	Low	Low		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Demersal trawl fishery for nephrops	Low	Low		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Pelagic trawl targeting mackerel, herring and horse mackerel	Low	Low		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Handline targeting mackerel (and occasional blue fin tuna)	Low	Low		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Dredge for scallop	Low	Low		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Set nets for white fish and rays	Low	Low		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Commercial diving for shellfish	Low	Low		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	All other gears and fisheries	Low	Low		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
Additional steaming to alternative fishing grounds - all other fleets	Potting <12m for lobster, brown crab, ballan wrasse etc	Low	Medium	M026, M027, M032 (layout & routing information), M038 (gear interaction), M029, M037	Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Potting >12m for lobster, brown crab, ballan wrasse etc	Low	Medium		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Potting for nephrops	Low	Low		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)

Activity and Impact	Receptor	Magnitude of Impact	Sensitivity	Embedded mitigation measures	Significance of effect (significance)	Further Environmental Mitigation	Assessment of Residual Effect (Significance)
	Demersal trawl fishery for monkfish, haddock,	Low	Low		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Demersal trawl fishery for nephrops	Low	Low		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Pelagic trawl targeting mackerel, herring and horse mackerel	Low	Low		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Handline targeting mackerel (and occasional blue fin tuna)	Low	Medium		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Dredge for scallop	Low	Low		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Set nets for white fish and rays	Low	Low		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Commercial diving for shellfish	Low	Low		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	All other gears and fisheries	Low	Low		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
Physical presence of infrastructure leading to gear snagging	Potting <12m for lobster, brown crab, ballan wrasse etc	Medium	Medium	M030 (cable burial & coordination), M032, M038 (gear interaction), M033 (Lighting & Marking Plan), M014 (marking & lighting of Array), M011, M012 (charting & NtMs), M013 (safety zones)	Moderate Adverse (Potentially Significant)	A001, A002, A003	Minor Adverse (Not Significant)
	Potting >12m for lobster, brown crab, ballan wrasse etc	Medium	Medium		Moderate Adverse (Potentially Significant)	A001, A002, A003	Minor Adverse (Not Significant)
	Potting for nephrops	Low	Medium		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Demersal trawl fishery for monkfish, haddock,	Low	Medium		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Demersal trawl fishery for nephrops	Low	Medium		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Pelagic trawl targeting mackerel, herring and horse mackerel	Low	Low		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Handline targeting mackerel (and occasional blue fin tuna)	Low	Low		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Dredge for scallop	Low	Medium		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Set nets for white fish and rays	Medium	Medium		Moderate Adverse (Potentially Significant)	A001, A002, A003	Minor Adverse (Not Significant)
	Commercial diving for shellfish	Low	Medium		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	All other gears and fisheries	Low	Medium		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)

Activity and Impact	Receptor	Magnitude of Impact	Sensitivity	Embedded mitigation measures	Significance of effect (significance)	Further Environmental Mitigation	Assessment of Residual Effect (Significance)
Operation and Maintenance							
Reduction in access to, or exclusion from established fishing grounds within the Array Area	Potting <12m for lobster, brown crab, ballan wrasse etc	Low	High	M026, M027, M028, M013, M029, M032, M036	Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Potting >12m for lobster, brown crab, ballan wrasse etc	Low	Medium		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Potting for nephrops	Negligible	Medium		Negligible (Not Significant)	N/A	Negligible (Not Significant)
	Demersal trawl fishery for monkfish, haddock,	Low	Low		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Demersal trawl fishery for nephrops	Negligible	Low		Negligible (Not Significant)	N/A	Negligible (Not Significant)
	Pelagic trawl targeting mackerel, herring and horse mackerel	Low	Low		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Handline targeting mackerel (and occasional blue fin tuna)	Low	Medium		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Dredge for scallop	Low	Low		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Set nets for white fish and rays	Low	High		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Commercial diving for shellfish	Low	High		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
All other gears and fisheries	Low	Low	Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)		
Reduction in access to, or exclusion from established fishing grounds within the OCC AoS	Potting <12m for lobster, brown crab, ballan wrasse etc	Low	High	M026, M027, M002, M028, M029, M030, M010, M032	Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Potting >12m for lobster, brown crab, ballan wrasse etc	Low	Medium		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Potting for nephrops	Negligible	Medium		Negligible (Not Significant)	N/A	Negligible (Not Significant)
	Demersal trawl fishery for monkfish, haddock,	Low	Low		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Demersal trawl fishery for nephrops	Negligible	Low		Negligible (Not Significant)	N/A	Negligible (Not Significant)
	Pelagic trawl targeting mackerel, herring and horse mackerel	Low	Low		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Handline targeting mackerel (and occasional blue fin tuna)	Low	Medium		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Dredge for scallop	Low	Low		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Set nets for white fish and rays	Low	High		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)

Activity and Impact	Receptor	Magnitude of Impact	Sensitivity	Embedded mitigation measures	Significance of effect (significance)	Further Environmental Mitigation	Assessment of Residual Effect (Significance)
	Commercial diving for shellfish	Low	High		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	All other gears and fisheries	Low	Low		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
Displacement leading to gear conflict and increased fishing pressure on adjacent grounds	Potting <12m for lobster, brown crab, ballan wrasse etc	Low	High	M026, M027, M028, M032, M030	Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Potting >12m for lobster, brown crab, ballan wrasse etc	Low	Medium		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Potting for nephrops	Low	Medium		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Demersal trawl fishery for monkfish, haddock,	Low	Low		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Demersal trawl fishery for nephrops	Low	Low		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Pelagic trawl targeting mackerel, herring and horse mackerel	Low	Low		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Handline targeting mackerel (and occasional blue fin tuna)	Low	Medium		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Dredge for scallop	Low	Low		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Set nets for white fish and rays	Low	High		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Commercial diving for shellfish	Low	High		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	All other gears and fisheries	Low	Low		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
Displacement or disruption of commercially important fish and shellfish resources	Potting <12m for lobster, brown crab, ballan wrasse etc	Low	High	M002, M019, M004, M006, M026, M019, M021	Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Potting >12m for lobster, brown crab, ballan wrasse etc	Low	Medium		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Potting for nephrops	Low	Medium		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Demersal trawl fishery for monkfish, haddock,	Low	Medium		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Demersal trawl fishery for nephrops	Low	Medium		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Pelagic trawl targeting mackerel, herring and horse mackerel	Low	Medium		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Handline targeting mackerel (and occasional blue fin tuna)	Low	Medium		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)

Activity and Impact	Receptor	Magnitude of Impact	Sensitivity	Embedded mitigation measures	Significance of effect (significance)	Further Environmental Mitigation	Assessment of Residual Effect (Significance)
	Dredge for scallop	Low	Medium		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Set nets for white fish and rays	Low	High		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Commercial diving for shellfish	Low	High		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	All other gears and fisheries	Low	Medium		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
Increased vessel traffic associated with the Project within fishing grounds leading to interference with fishing activity	Potting < 12m for lobster, brown crab, ballan wrasse etc	Low	Medium	M010, M029, M022, M028, M026, M027, M037	Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Potting > 12m for lobster, brown crab, ballan wrasse etc	Low	Medium		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Potting for nephrops	Low	Medium		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Demersal trawl fishery for monkfish, haddock,	Low	Low		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Demersal trawl fishery for nephrops	Low	Low		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Pelagic trawl targeting mackerel, herring and horse mackerel	Low	Low		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Handline targeting mackerel (and occasional blue fin tuna)	Low	Low		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Dredge for scallop	Low	Low		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Set nets for white fish and rays	Low	Medium		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Commercial diving for shellfish	Low	Low		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
Additional steaming to alternative fishing grounds - all other fleets	Potting < 12m for lobster, brown crab, ballan wrasse etc	Low	Medium	M026, M027, M032, M038, M029, M037	Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Potting > 12m for lobster, brown crab, ballan wrasse etc	Low	Medium		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Potting for nephrops	Low	Low		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Demersal trawl fishery for monkfish, haddock,	Low	Low		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Demersal trawl fishery for nephrops	Low	Low		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)

Activity and Impact	Receptor	Magnitude of Impact	Sensitivity	Embedded mitigation measures	Significance of effect (significance)	Further Environmental Mitigation	Assessment of Residual Effect (Significance)
	Pelagic trawl targeting mackerel, herring and horse mackerel	Low	Low		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Handline targeting mackerel (and occasional blue fin tuna)	Low	Medium		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Dredge for scallop	Low	Low		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Set nets for white fish and rays	Low	Medium		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Commercial diving for shellfish	Low	Low		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	All other gears and fisheries	Low	Low		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
Physical presence of infrastructure leading to gear snagging	Potting <12m for lobster, brown crab, ballan wrasse etc	Medium	Medium	M030 (cable burial & coordination), M032, M038 (gear interaction), M033 (Lighting & Marking Plan), M014 (marking & lighting of Array), M011, M012 (charting & NtMs), M013 (safety zones)	Moderate Adverse (Potentially Significant)	A001, A002	Minor Adverse (Not Significant)
	Potting >12m for lobster, brown crab, ballan wrasse etc	Medium	Medium		Moderate Adverse (Potentially Significant)	A001, A002	Minor Adverse (Not Significant)
	Potting for nephrops	Low	Medium		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Demersal trawl fishery for monkfish, haddock,	Low	Medium		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Demersal trawl fishery for nephrops	Low	Medium		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Pelagic trawl targeting mackerel, herring and horse mackerel	Low	Low		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Handline targeting mackerel (and occasional blue fin tuna)	Low	Low		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Dredge for scallop	Low	Medium		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	Set nets for white fish and rays	Low	Medium		Moderate Adverse (Potentially Significant)	A001, A002	Minor Adverse (Not Significant)
	Commercial diving for shellfish	Low	Medium		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
	All other gears and fisheries	Low	Medium		Minor Adverse (Not Significant)	N/A	Minor Adverse (Not Significant)
Decommissioning							
As per construction assessment							

24.18 CHAPTER 22: OFFSHORE HUMAN HEALTH

Table 24.17: Summary of assessment of residual effects for Offshore Human Health

Activity and impact	Receptor	Magnitude of impact	Receptor and sensitivity or value	Embedded mitigation measures	Significance of effect (significance)	Further environmental mitigation	Significance of residual effect (significance)
Construction							
Noise impacts	Resident population	Low	Medium	M019, M044	Minor (not significant)	N/A	Minor (not significant)
	Vulnerable groups	Low	Medium	M019, M044	Minor (not significant)	N/A	Minor (not significant)
Visual impacts	Resident population	Low	Medium	M019, M044	Minor (not significant)	N/A	Minor (not significant)
	Vulnerable group	Low	Medium	M019, M044	Minor (not significant)	N/A	Minor (not significant)
Population change	Resident population	Negligible	Medium	M041, M042, M044	Negligible (not significant)	N/A	Minor (not significant)
	Vulnerable groups	Negligible	Medium	M041, M042, M044	Negligible (not significant)	N/A	Minor (not significant)
Operation & Maintenance							
Noise impacts	Resident population	Low	Medium	M044	Minor (not significant)	N/A	Minor (not significant)
	Vulnerable groups	Low	Medium	M044	Minor (not significant)	N/A	Minor (not significant)
Visual impacts	Resident population	Medium	Medium	M040	Moderate (potentially significant)	N/A	Not significant
	Vulnerable groups	Medium	High	M040	Moderate (potentially significant)	N/A	Potentially significant
Population change	Resident population	Low	Medium	M044	Minor (not significant)	N/A	Minor (not significant)
	Vulnerable groups	Low	Medium	M044	Minor (not significant)	N/A	Minor (not significant)
Decommissioning							
As per construction assessment							

24.19 CHAPTER 23: COMBINED EFFECTS

- 24.19.1.1 There are **No Significant** project-lifetime or receptor-led combined effects which are anticipated to a result in an additive effect, and thus a change to the level of significance which has been concluded within a project phase or for a specific receptor or receptor groups, as a result of the Offshore Project.
- 24.19.1.2 There are **No Significant** ecosystem level effects which are anticipated to a result in an additive effect, and thus a change to the level of significance which has been concluded within a project phase or for a specific receptor or receptor groups, as a result of the Offshore Project.
- 24.19.1.3 There are **No Significant** effects arising due to In-Combination Climate Impact which are anticipated to a result in an additive effect, and thus a change to the level of significance which has been concluded within a project phase or for a specific receptor or receptor groups, as a result of the Offshore Project.

24.20 GLOSSARY OF TERMS AND ABBREVIATIONS

24.20.1.1 A list of key terms and acronyms used in this Appendix are provided in **Table 24.18** and **Table 24.19**.

Table 24.18 Acronyms and abbreviations

Term	Definition
EIA	Environmental Impact Assessment
EIAR	Environmental Impact Assessment Report
HDD	Horizontal Directional Drilling
HRA	Habitats Regulations Assessment
IEMA	Institute of Environmental Management and Assessment
MD-LOT	Marine Directorate – Licencing Operations Team
MDS	Maximum Design Scenario
MHWS	Mean High Water Springs
MLWS	Mean Low Water Springs
OCAS	Offshore Cable Area of Search
OSP	Offshore Substation Platform
OTW Project	Onshore Transmission Works Project
OWF	Offshore Wind Farm
PAN	Planning Advice Note
PDE	Project Design Envelope
UXO	Unexploded Ordnance
WTG	Wind Turbine Generators

Table 24.19 Glossary

Term	Definition
the Applicant	Spiorad na Mara Limited (the Project owner)
Array Area	The offshore area within which the offshore wind turbine generators (WTGs), associated foundations, Offshore Cables, and Offshore Substation Platform (OSP) (if required), will be located. This area encompasses the Turbine Area that will contain all above water surface infrastructure (WTGs / OSP) and an additional area within which further below water infrastructure (foundations and cables) may also be located.
Array Cables	The offshore electrical and communication cables that connect infrastructure located within the Array Area, for: <ul style="list-style-type: none"> Scenario 1: Array Cables will used to connect Wind Turbine Generators (WTGs) to each other, and to connect WTGs to the OSP. Scenario 2: Array Cables will used to connect WTGs to each other.
Array Cables to Landfall	The offshore electrical and communication cables located in the Array Area and Offshore Cables Area of Search that connect the wind turbine generators (WTGs) directly to Landfall for Scenario 2.

Term	Definition
Effect	Term used to express the consequence of an impact. The significance of an effect is determined by correlating the magnitude of the impact with the importance, or sensitivity, of the receptor or resource in accordance with defined significance criteria.
Environmental Impact Assessment Report (EIAR)	The Environmental Impact Assessment Report (EIAR) prepared to assess the likely significant effects of the Project on the environment.
Export Cable	The offshore electrical and communication cables located in the Array Area and Offshore Cables Area of Search that connect the Offshore Substation Platform (OSP) (if required) to Landfall for Scenario 1.
Embedded or 'Designed-in' Mitigation	Mitigation measures to avoid or reduce environmental effects that are directly incorporated into the preferred design for the Project. This can include standard practice in accordance with or without guidance. Embedded Mitigation is considered as part of the impact assessment, before effect significance is identified
Landfall	This consists of works from offshore Horizontal Directional Drill (HDD) exit pits (located below MLWS) to onshore at the Transition Joint Bays (TJB) (located above MHWS). The infrastructure and installation methods associated with the Landfall involves both onshore and offshore components.
Offshore Application	The application for a marine licence under the Marine (Scotland) Act 2010 (between 0 and 12nm) and a Section 36 consent under the Electricity Act 1989.
Offshore Cables	Electrical and communication cables located within the Array Area and Offshore Cable Area of Search. The Offshore Cables consist of Array Cables, Array Cables to Landfall, and Export Cables.
Offshore Cable Area of Search (OCAS)	The area within which the offshore cable infrastructure between the Array Area and Landfall up to Mean High Water Springs (MHWS) will be located.
Offshore Project	The offshore components of the Spiorad na Mara offshore wind farm (the Project) located seaward of Mean High Water Springs (MHWS).
Offshore Project Boundary	The 'red line boundary' encompassing the Offshore Project.
Offshore Substation Platform (OSP)	The optional offshore substation located within the Turbine Area. Includes the platform and associated components which allows the voltage to be increased to meet onward transmission requirements.
Onshore Transmission Works (OTW) / Onshore Project	The onshore components of the Spiorad na Mara offshore wind farm (the Project) located landward of Mean Low Water Springs (MLWS). The Applicant will seek consent for the OTW Project through a separate application and so does not form part of this application.
Project	The Spiorad na Mara offshore wind farm development. This term describes the whole development, including all offshore and onshore components.
Project Design Envelope	A description of the range of possible components that make up the Project design options under consideration when the exact engineering parameters are not yet known.

Term	Definition
Scoping Opinion	A report presenting the written opinion of the Scottish Ministers, with input from Comhairle nan Eilean Siar (CnES) for the OTW, as to the scope and level of detail of information to be provided in the Environmental Impact Assessment (EIA) for the Project.
Turbine Area	A reduced area within the Array Area where above water surface infrastructure would be located i.e. wind turbine generators (WTG) or Offshore Substation Platform (OSP) (if required). This area has been developed and refined through stakeholder consultation and environmental assessment.
Wind Turbine Generator (WTG)	The wind turbines that generate electricity consisting of tubular towers and blades attached to a nacelle housing mechanical and electrical generating equipment