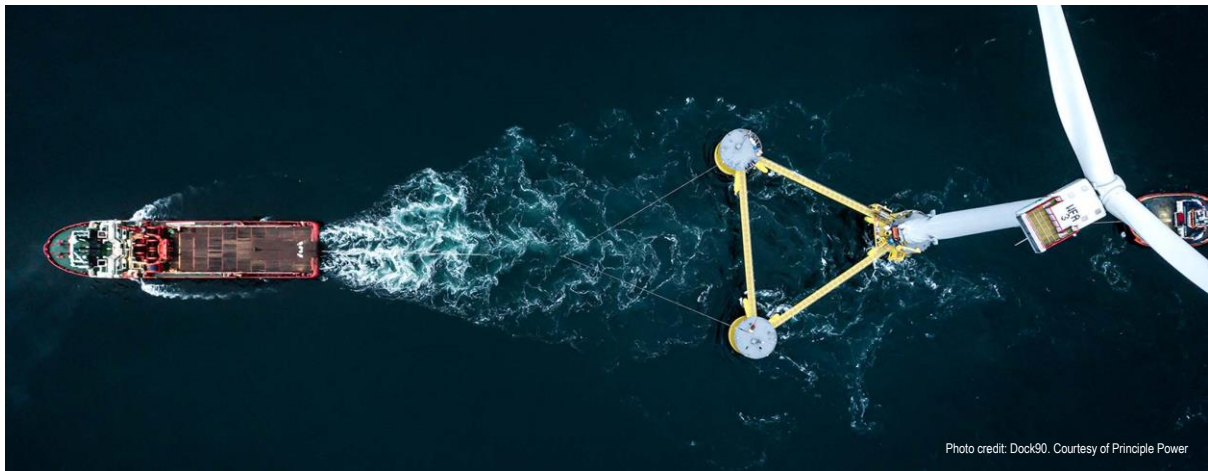




Project Erebus Environmental Statement Chapter 31: Residual Effect Summary

Table of Contents

31.1 Introduction 31-1

Acronyms

Term	Definition
AQMA	Air Quality Management Areas
AOD	Above Ordnance Datum
AONB	Area of Outstanding Natural Beauty
CAA	Civil Aviation Authority
CCW	Countryside Council for Wales
CEA	Cumulative Effects Assessment
ES	Environmental Statement
km	Kilometre
LCA	Landscape Character Area
MCA	Marine Character Area
MHWS	Mean High Water Springs
MLWS	Mean Low Water Springs
MOD	Ministry of Defence
NCA	National Character Area
NRW	Natural Resources Wales
O&M	Operation and Maintenance
OS	Ordnance Survey
PCC	Pembrokeshire County Council
PDZ	Pembrokeshire Demonstration Zone
PCNPA	Pembrokeshire Coast National Park Authority
SCA	Seascape Character Area
SL&V	Seascape, Landscape and Visual
RiAA	Report to Inform Appropriate Assessment
RSPB	Royal Society for the Protection of Birds
SAC	Special Area of Conservation
SINC	Site of Interest for Nature Conservation
SPA	Special Protected Area

Term	Definition
SPEC	Species of European Conservation Concern
SPP	Species Protection Plan
SSSI	Site of Special Scientific Interest
WTG	Wind Turbine Generator
ZOI	Zone of Influence
ZTV	Zone of Theoretical Visibility

Chapter 31 Residual Effect Summary

31.1 Introduction

- 31.1.1.1 This chapter of the Environmental Statement (ES) provides a summary of the additional mitigation measures and residual effects identified in Volume 1, Chapters 6 to 27.
- 31.1.1.2 A range of standard mitigation measures have already been applied to the Project as part of the over-arching site selection and iterative design process, see Chapter 3: Site Selection and Alternatives. Standard mitigation measures which the Project has already implemented, or is committed to in the future, in order to avoid potential impacts are presented in each chapter and the impact assessments are undertaken on the assumption that standard mitigation has been applied.
- 31.1.1.3 Where an impact assessment identifies that an aspect of the Project is likely to give rise to significant environmental impacts additional mitigation measures are proposed, in order to avoid impacts or reduce them to acceptable levels. Mitigation will take place in the following hierarchy, where the first is not feasible due to constraints, including, engineering, technology or geology, the next measure will be engaged.
- 31.1.1.4 The Project design will aim to avoid placing permanent infrastructure or having temporary working areas within protected sites where possible;
- 31.1.1.5 If avoidance of protected sites is not possible, best endeavours will be made to design the proposed Project to avoid direct impact on the specified features of interest within protected sites via specific Construction and Decommissioning methods, where possible;
- 31.1.1.6 Where the feature is not static, the design of the infrastructure of the proposed Project must, where practicable, minimise impact on mobile species, therefore reducing the interaction and harm; and
- 31.1.1.7 Where avoidance of features of interest is not possible, mitigation measures will be developed and agreed with regulatory authorities for Construction, Operation and Decommissioning to minimise effects or provide enhancement measures.
- 31.1.1.8 Mitigation measures proposed for the Project are considered proportionate to the scale of the impact predicted. When appropriate to do so, proposed mitigation measures have been discussed and agreed with relevant regulatory authorities and stakeholders.
- 31.1.1.9 When any of the effects identified are considered major or moderate adverse (significant in EIA terms) despite the standard (embedded) mitigation measures included within the Project design, additional mitigation is required to reduce the significance to non-significant (in EIA terms).
- 31.1.1.10 Table 31.1 provides a summary of the additional mitigation measures incorporated into the Project's design. More information can be found in Volume 1's respective Chapters.
- 31.1.1.11 Table 31.2, Table 31.3 and Table 31.4 provide the summaries of the residual effects, their significance and their nature.

Table 31.1 Summary of Additional mitigation measures

ES Chapter	Additional Mitigation Measures
Chapter 6 - Marine and Coastal Processes	All impacts assessed for marine and coastal process receptor during Construction, Operation and Maintenance (O&M) and Decommissioning have been assessed as minor or negligible which are not significant in EIA terms. Therefore, no additional mitigation is required.
Chapter 7 - Marine Seabed and Water Quality	All impacts assessed for marine seabed and water quality receptors during Construction, O&M and Decommissioning have been assessed as minor or negligible which are not significant in EIA terms. Therefore, no additional mitigation is required.
Chapter 9 - Marine and Coastal Ecology	All impacts assessed for marine and coastal ecology receptors during Construction, O&M and Decommissioning have been assessed as minor or negligible which are not significant in EIA terms. Therefore, no additional mitigation is required.
Chapter 10 - Fish & Shellfish Ecology	All impacts assessed for fish and shellfish receptors during Construction, O&M and Decommissioning have been assessed as minor or negligible which are not significant in EIA terms. Therefore, no additional mitigation is required.
Chapter 11 - Offshore Ornithology	All impacts assessed for offshore ornithology receptors during Construction, O&M and Decommissioning have been assessed as minor or negligible which are not significant in EIA terms. Therefore, no additional mitigation is required.
Chapter 12 - Marine Mammals	All impacts assessed for marine mammal receptors during Construction, O&M and Decommissioning have been assessed as minor or negligible which are not significant in EIA terms. Therefore, no additional mitigation is required.
Chapter 13 - Seascape and Visual Impacts	All impacts assessed for seascape receptors during Construction, O&M and Decommissioning have been assessed as minor or negligible which are not significant in EIA terms. Therefore, no additional mitigation is required.
Chapter 14 - Offshore Archaeology and Cultural Heritage	All impacts assessed for offshore archaeology and cultural heritage receptors during Construction, O&M and Decommissioning have been assessed as minor or negligible which are not significant in EIA terms. Therefore, no additional mitigation is required.

ES Chapter	Additional Mitigation Measures
Chapter 15 - Commercial Fisheries	All impacts assessed for commercial fisheries receptors during Construction, O&M and Decommissioning have been assessed as minor or negligible which are not significant in EIA terms. Therefore, no additional mitigation is required.
Chapter 16 - Shipping and Navigation	All impacts assessed for shipping and navigation receptors during Construction, O&M and Decommissioning have been assessed as minor or negligible which are not significant in EIA terms. Therefore, no additional mitigation is required.
Chapter 17 - Aviation and Radar	Suitable mitigation of the effects on the Ministry of Defence (MOD) Hartland Point Primary Surveillance Radar (PSR) will be identified by the MOD during consultation. Mitigation, if required, might include radar 'blanking' of the PSR in the vicinity of the operational Project to remove Wind Turbine Generator (WTG) radar returns.
Chapter 18 - Coastal and Marine Infrastructure and Other Users	All impacts assessed for other user receptors during Construction, O&M and Decommissioning have been assessed as minor or negligible which are not significant in EIA terms. Therefore, no additional mitigation is required.
Chapter 19 - Onshore Geology, Hydrogeology and Hydrology	• Enabling works for onshore export cable installation in vicinity of 250 m Private Water Supply (PWS) buffer to be overseen full time by a suitably qualified environmental engineer • An appropriate Water Quality Monitoring Plan (WQMP) will be designed for the PWSs identified as being at risk of water quality deterioration to include a comprehensive sampling programme • Frequent communication and liaison with PWS property owner while the onshore export cable installation is within the 250 m buffer –Contractor to provide a nominated person as point of contact • In the event that a PWS is affected by activities associated with the onshore export cable installation works, contingency supply arrangements will be ready for implementation under these circumstances. This will include ensuring that alternative sources of drinking water and water for general use will be provided should it be required. • Enhanced sampling frequency of PWS source extraction point while the onshore export cable installation is within the 250 m PWS buffer. This will involve daily sampling and will include insitu testing via multiparameter probes which provides 'instantaneous' results. The sampling results and insitu probe results will be monitored daily to ensure any deterioration of the PWS is identified quickly and ensure contingency supply arrangements are implemented if required.

ES Chapter		Additional Mitigation Measures
		Should a temporary alternative supply be provided, the existing supply would be reinstated following the Construction and a water quality and quantity monitoring programme will be employed to ensure the water supply is reinstated to baseline conditions
Chapter 20 - Terrestrial and Coastal Ecology and Onshore Ornithology	Pembrokeshire Bat Sites and Bosherston Lakes Special Areas of Conservation (SAC) / The Oriellon Stable Block and Cellars Sites of Special Scientific Interest (SSSI) Milford Haven Waterway SSSI Castlemartin Range SSSI	Species Protection Plan (SPP), maintaining linear connection of hedgerows overnight in areas where hedges are severed. No night-time working in areas where severance of hedgerows cannot be avoided. Overall enhancement of the hedgerow network along the onshore cable corridor. Habitat enhancement and generation in and around the substation building.
	Habitat - Arable Field Margins	ECoW (Ecological Clerk of Work) attendance and micro-siting of cable installation to avoid sensitive areas. Reinstatement and enhancement by re-seeding following Construction works.
	Habitat - Hedgerows	ECoW attendance and micro-siting of cable installation to avoid sensitive areas. Reinstatement and enhancement by re-seeding and planting following Construction works.
	Specific habitats	ECoW attendance and micro-siting of cable installation to avoid areas of better-quality habitat. Reinstatement and enhancement by re-seeding and planting following Construction works.

ES Chapter		Additional Mitigation Measures
	Bats (general assemblage)	SPP, maintaining linear connection of hedgerows overnight in areas where hedges are severed. No night-time working in areas where severance of hedgerows cannot be avoided. Use of sensitive lighting in and around the substation building. Overall enhancement of the hedgerow network along the onshore cable corridor. Habitat enhancement and generation in and around the substation building.
	Dormouse	Pre-Construction surveys and implementation of Dormouse Mitigation Strategy. Use of sensitive lighting in and around the substation building. Overall enhancement of the hedgerow network along the onshore cable corridor. Habitat enhancement and generation in and around the substation building.
	Breeding and Wintering Bird Assemblage	Pre-works surveys and vegetation clearance out with the breeding season. Overall enhancement of the hedgerow network and field margins along the onshore cable corridor. Habitat enhancement and generation in and around the substation building.
	Demolition of transition joint bay and substation building	SPP, including pre-works surveys for protected species. No night-time working but if unavoidable then the use of sensitive lighting in and around the substation building and surrounding habitats.
Chapter 21 - Landscape and Visual Impact		Additional mitigation measures could be developed at detailed design stage, including - detailed planting proposals for the onshore substation; detailed design and materials selection for the onshore substation; and detailed consideration of the onshore substation building colour and finish.
Chapter 22 - Onshore Noise and Vibration	Increased noise on residential receptors along the Study Area	Provision of targeted noise barriers to Construction equipment.
	Increased operational noise on residential from the	The Applicant will submit and agree with PCC (in writing) an operational noise assessment to demonstrate that operational noise from the onshore substation will not exceed a noise rating level (in accordance with BS4142:2014+A1:2019) of 36 dB $L_{Ar,15min}$ (specific sound level plus any adjustment for the characteristic features of the sound including specified interval over which the specific sound level is determined) at any time at the nearest

ES Chapter		Additional Mitigation Measures
	onshore substation	Noise Sensitive Receptors. The operational noise assessment shall demonstrate, by monitoring or appropriate alternative means, compliance with the rating level detailed above.
Chapter 23 - Onshore Archaeology and Cultural Heritage		Preliminary geophysical survey potentially followed by trenched archaeological evaluation. Subsequently standard mitigation may suffice, or additional mitigation in the form of archaeological excavation, may be required.
		Considerations of size, materials, distribution, lighting and screening in the final design of the substation.
Chapter 24 - Land Use		All impacts assessed for land use during Construction, O&M and Decommissioning have been assessed as minor or negligible which are not significant in EIA terms. Therefore, no additional mitigation is required.
Chapter 25 - Traffic and Transport		All impacts assessed for traffic and transport during Construction, O&M and Decommissioning have been assessed as minor or negligible which are not significant in EIA terms. Therefore, no additional mitigation is required.
Chapter 26 - Air Quality		Avoid works at landfall site during tourist season to prevent impacts at West Angle Caravan Park. Additional barriers and covering of temporary spoil piles may be required for the sections of the cabling route closest to the permanent residential properties within West Angle Bay Caravan park and existing solar farms to prevent dust deposition.
		Enhanced wheel washing at access points from the B4230 near the designated sites
		Construction phase traffic will be instructed not to travel through the Pembroke Air Quality Management Areas (AQMA) to prevent potential congestion or blockages in the narrow street leading to increased emissions from other vehicles and to avoid the potential for nuisance complaints.
		Additional barriers and covering of temporary spoil piles may be required for the sections of the cabling route adjacent to existing solar farms to prevent deposition of dust onto solar panels.
Chapter 27 - Socio-economics, Tourism and Recreation		Disruption to the Café at West Angle Bay (Wavecrest) and the West Angle Caravan Park during the Project's Construction phase will be mitigated by site-specific solutions such as temporary screening and noise barriers will be applied around the main items of noise generating activities; and a communication strategy and Community Liaison Officer will be employed to inform businesses and residents of the Construction schedule and programme and location of Construction activities.

Table 31.2 Summary of potential residual effects arising from the Construction phase of the Project

ES Chapter	Description of Effect	Receptor	Significance of the Residual Effect	Nature of the Residual Effect (Beneficial/Adverse)
Chapter 6 - Marine and Coastal Processes	Potential increases in Suspended Sediment Concentration (SSC) and associated changes to seabed substrate.	[Potential pathway of effect for other topics]	[Potential pathway of effect for other topics]	[Potential pathway of effect for other topics]
	Potential changes to sediment transport system by changes in wave and current climate.	[Potential pathway of effect for other topics]	[Potential pathway of effect for other topics]	[Potential pathway of effect for other topics]
	Potential changes to the morphology of the seabed (including scour).	Pembrokeshire Marine SAC; The West Wales Marine SAC; and Skomer, Skokholm and the Seas off Pembrokeshire SPA.	Minor	Adverse
	Potential changes in morphology of the coast.	The coastline	Minor	Adverse
Chapter 7 - Marine Seabed and Water Quality	Impact on water quality via drilling and disposal of drill arisings.	Water quality; WFD designated features such as shellfish waters or designated bathing waters	Negligible	-
	Accidental release of fluids into the environment.	Water quality;	Negligible	-

ES Chapter	Description of Effect	Receptor	Significance of the Residual Effect	Nature of the Residual Effect (Beneficial/Adverse)
		WFD designated features such as shellfish waters or designated bathing waters		
	Cable installation works may cause changes to water quality through sediment re-suspension.	Water quality; WFD designated features such as shellfish waters or designated bathing waters	Minor	Adverse
	Water quality may be altered through the mobilisation of contaminated sediments.	Water quality; WFD designated features such as shellfish waters or designated bathing waters	Minor	Adverse
Chapter 9 - Marine and Coastal Ecology	Temporary habitat disturbance (direct)	Sedimentary and rock benthic habitats identified (Valued Ecological Receptor (VER) groups A-H rock, and VER groups I-L sediment) and Annex I habitat	Minor	Adverse
	Temporary increases in suspended sediments/ smothering (indirect)		Minor	Adverse
	Introduction of Invasive non-native species (indirect)		Minor	Adverse
	Protection of benthic habitats from fishing restrictions (indirect)		Minor	Beneficial
	Accidental release of pollutants from vessels (direct)		Minor	Adverse

ES Chapter	Description of Effect	Receptor	Significance of the Residual Effect	Nature of the Residual Effect (Beneficial/Adverse)
	Accidental release of pollutants through disturbance of the sediments (indirect)		Minor	Adverse
Chapter 10 - Fish & Shellfish Ecology	Temporary habitat disturbances/damage to sedentary species via moorings and cable installation	Elasmobranchs; Demersal fish; Pelagic fish Migratory fish; and Shellfish.	Minor	Adverse
	Increased suspended sediment and sediment deposition		Fish adult life stages: Negligible Fish eggs/larval life stages, spawning and nursery grounds, and shellfish: Minor	- Adverse
	Low-level, non-impulsive subsea noise		Negligible	-
	High-level impulsive subsea noise (piling)		Minor	Adverse
	Disturbance, injury and mortality from subsea noise produced via Unexploded Ordnance (UXO)		Minor	Adverse
Chapter 11 - Offshore Ornithology	Indirect impacts as a result of displacement of prey due to Construction activities	All seabird receptors	Negligible	-

ES Chapter	Description of Effect	Receptor	Significance of the Residual Effect	Nature of the Residual Effect (Beneficial/Adverse)
	Disturbance and displacement from increased vessel activity (array and Export Cable Corridor (ECC))	Northern fulmar	Negligible	-
		Shearwaters and storm-petrels	Negligible	-
		Northern gannets	Negligible	-
		Gulls	Negligible	-
		Auks	Minor	Adverse
	Disturbance and displacement from underwater noise via Construction activities (including piling and UXO)	Diving seabird receptors (northern gannet, Manx shearwater, common guillemot, razorbill and Atlantic puffin)	Negligible	-
Chapter 12 - Marine Mammals	Permanent Threshold Shift (PTS) from UXO	All marine mammal receptors	Negligible	-
	Disturbance from UXO	All marine mammal receptors	Negligible	-
	PTS from pile driving	All marine mammal receptors	Negligible	-
	Disturbance from pile driving	All marine mammal receptors	Negligible to Minor	Adverse
	PTS from other Construction activities	All marine mammal receptors	Negligible	-

ES Chapter	Description of Effect	Receptor	Significance of the Residual Effect	Nature of the Residual Effect (Beneficial/Adverse)
	Disturbance from other Construction activities	All marine mammal receptors	Negligible	-
	Collision with vessels	All marine mammal receptors	Minor	Adverse
	Disturbance from vessels	All marine mammal receptors	Negligible to Minor	Adverse
	Disturbance at seal haul-outs	Grey seals	Negligible	-
	Indirect impacts on prey	All marine mammal receptors	Negligible	-
Chapter 13 - Seascape and Visual Impacts	The residual effects arising as a result of the Construction of the Proposed Development are assessed as being of the same magnitude and significance on all seascape, landscape and visual receptors as those arising from its operation (summarised in Table 31.3), however the residual effects will be short-term and temporary during the length of the Construction phase and differ mainly due the influence of Construction vessels in the seascape that will not be present during the operational phase.			
Chapter 14 - Offshore Archaeology and Cultural Heritage	Potential impacts to known and potential wreck sites, aviation crash sites and geophysical anomalies	Wreck sites, aviation crash sites and geophysical anomalies	Negligible	-
	Potential impacts to potential submerged prehistoric archaeological sites and palaeoenvironmental remains.	Submerged prehistoric archaeological sites and palaeoenvironmental remains	Minor	Adverse
	Potential impacts to maritime infrastructure, intertidal and adjacent sites.	Maritime infrastructure, intertidal and adjacent sites	Negligible	-

ES Chapter	Description of Effect	Receptor	Significance of the Residual Effect	Nature of the Residual Effect (Beneficial/Adverse)
	Potential impacts to Milford Haven Waterway: Landscape of Outstanding Historic Interest.	Milford Haven Waterway: Landscape of Outstanding Historic Interest	Minor	Adverse
Chapter 15 - Commercial Fisheries	Temporary loss of access to fishing grounds (and associated reduction in revenue) due to presence of installation vessels and (temporary) construction-phase safety zones	≤12 m nearshore static gear vessels	Minor	Adverse
		≤12 m inshore static gear vessels	Minor	Adverse
		>12 m static gear vessels	Minor	Adverse
		>12 m inshore mobile gear vessels	Minor	Adverse
		>12 m offshore mobile gear vessels	Negligible	-
	Temporary displacement of fishing activity into other areas (and associated reduction in revenue) due to presence of installation vessels and construction-phase safety zones	≤12 m nearshore static gear vessels	Minor	Adverse
		≤12 m inshore static gear vessels	Minor	Adverse
		>12 m static gear vessels	Minor	Adverse
		>12 m inshore mobile gear vessels	Minor	Adverse

ES Chapter	Description of Effect	Receptor	Significance of the Residual Effect	Nature of the Residual Effect (Beneficial/Adverse)
	Temporary increased steaming times due to the presence of installation vessels and (temporary) construction-phase safety zones during Construction	>12 m offshore mobile gear vessels	Negligible	-
		≤12 m nearshore static gear vessels	Minor	Adverse
		≤12 m inshore static gear vessels	Minor	Adverse
		>12 m static gear vessels	Negligible	-
		>12 m inshore mobile gear vessels	Negligible	-
		>12 m offshore mobile gear vessels	Negligible	-
	Snagging resulting from seabed obstructions	≤12 m nearshore static gear vessels	Minor	Adverse
		≤12 m inshore static gear vessels	Minor	Adverse
		>12 m static gear vessels	Minor	Adverse
		>12 m inshore mobile gear vessels	Negligible	-

ES Chapter	Description of Effect	Receptor	Significance of the Residual Effect	Nature of the Residual Effect (Beneficial/Adverse)
	Supply chain opportunities for local fishing vessels	>12 m offshore mobile gear vessels	Negligible	-
		≤12 m nearshore static gear vessels	Negligible	-
		≤12 m inshore static gear vessels	Negligible	-
		>12 m static gear vessels	Minor	Beneficial
		>12 m inshore mobile gear vessels	Moderate	Beneficial
		>12 m offshore mobile gear vessels	Moderate	Beneficial
Chapter 16 - Shipping and Navigation	Presence of project-related vessels, and displacement of vessels from the array area or offshore export cable corridor, may lead to vessel-to-vessel collision	Collision of Large Vessels with Large Vessels	Tolerable (if As low as reasonably practicable (ALARP))	Adverse
		Collision of Large Vessels with Small Vessels	Broadly Acceptable	Adverse
		Collision of Small Vessels with Small Vessels	Broadly Acceptable	Adverse

ES Chapter	Description of Effect	Receptor	Significance of the Residual Effect	Nature of the Residual Effect (Beneficial/Adverse)
	Presence of cable laying vessel within port limits and approaches may lead to vessel-to-vessel collision	Collision of Large Vessels with Large Vessels	Tolerable (if ALARP)	Adverse
	Presence of Platform/WTGs (in place) may lead to vessel-to-structure contact	Contact/Allision with Platform/WTGs (in place) of Fishing Vessels	Tolerable (if ALARP)	Adverse
		Contact/Allision with Platform/WTGs (in place) of Offshore Wind Farm (OWF) construction Vessels	Tolerable (if ALARP)	Adverse
		Contact/Allision with Platform /WTGs (in place) of OWF Service Vessels	Tolerable (if ALARP)	Adverse
		Contact/Allision with Platform /WTGs (in place) of Commercial vessels	Broadly Acceptable	Adverse
		Contact/Allision with Platform /WTGs (in place) of Recreational Vessels	Broadly Acceptable	Adverse
		Contact/Allision with Platform /WTGs (in place) of Tankers	Broadly Acceptable	Adverse
		Contact/Allision with Platform /WTGs adrift (due to	Broadly Acceptable	Adverse

ES Chapter	Description of Effect	Receptor	Significance of the Residual Effect	Nature of the Residual Effect (Beneficial/Adverse)
	Breakout of Platform /WTGs (adrift) may lead to vessel-to-structure contact	Platform/WTGs breakout) of Commercial vessels		
		Contact/Allision with Platform /WTGs adrift (due to Platform/WTGs breakout) of Fishing Vessels	Broadly Acceptable	Adverse
		Contact/Allision with Platform /WTGs adrift (due to Platform/WTGs breakout) of OWF construction Vessels	Broadly Acceptable	Adverse
		Contact/Allision with Platform /WTGs adrift (due to Platform/WTGs breakout) of Recreational Vessels	Broadly Acceptable	Adverse
		Contact/Allision with Platform /WTGs adrift (due to Platform/WTGs breakout) of Tankers	Broadly Acceptable	Adverse
	Presence of rock protection may reduce under keel clearance and increase risk of grounding	Grounding (export cable route only) of Fishing Vessels	Broadly Acceptable	Adverse
		Grounding (export cable route only) of Recreational Vessels	Broadly Acceptable	Adverse
		Snagging with Platform/WTGs moorings, inter array cables or	Tolerable (if ALARP)	Adverse

ES Chapter	Description of Effect	Receptor	Significance of the Residual Effect	Nature of the Residual Effect (Beneficial/Adverse)
	Snagging with Platform/WTGs moorings, inter array cable or export cable	export cable of Fishing Vessels		
		Snagging with Platform/WTGs moorings, inter array cables or export cable of OWF construction Vessels	Tolerable (if ALARP)	Adverse
		Snagging with Platform/WTGs moorings, inter array cables or export cable of Commercial vessels	Broadly Acceptable	Adverse
		Snagging with Platform/WTGs moorings, inter array cables or export cable of Recreational Vessels	Broadly Acceptable	Adverse
		Snagging with Platform/WTGs moorings, inter array cables or export cable of Tankers	Broadly Acceptable	Adverse
	Presence of Platform/WTGs (and associated sub-surface infrastructure) may lead to vessel rerouting	Tanker and Cargo vessels rerouting due to presence of Project structures	Broadly Acceptable	Adverse
	Presence of cable laying vessels may disrupt usage of the East and West Channels	Presence of cable layer disrupting usage of the East and West Channels resulting in disruption to Milford Haven	Tolerable (if ALARP)	Adverse

ES Chapter	Description of Effect	Receptor	Significance of the Residual Effect	Nature of the Residual Effect (Beneficial/Adverse)
		Port Authority (MHPA) operations		
	Presence of Platform/WTG (and associated sub-surface infrastructure) may disrupt MHPA tanker waiting area	Presence of Project structures resulting in insufficient sea room for Tankers waiting to enter MHPA and disruption to MHPA operations	Broadly Acceptable	Adverse
	Presence of Platform/WTGs (and associated sub-surface infrastructure) may affect search and rescue operations	Presence of Project structures inhibiting search and rescue assets from entering and operating within array area	Broadly Acceptable	Adverse
	Presence of Platform/WTGs (and associated sub-surface infrastructure) may affect visual navigation and collision avoidance	Presence of Project structures disrupting visual navigation and collision avoidance resulting in increased collision risk	Broadly Acceptable	Adverse
	Presence of Platform/WTGs (and associated sub-surface infrastructure) may affect communications, radar and positioning systems	Presence of Project structures disrupting communications, radar and positioning systems resulting in increased collision and contact (allision) risk	Broadly Acceptable	Adverse
Chapter 17 - Aviation and Radar	Creation of Aviation Obstacle to Fixed Wing and Rotary Aircraft Operating Offshore.	N/A	Negligible	-

ES Chapter	Description of Effect	Receptor	Significance of the Residual Effect	Nature of the Residual Effect (Beneficial/Adverse)
Chapter 18 - Coastal and Marine Infrastructure and Other Users	Disturbance and obstruction to other marine renewable project activities arising from the use of the Port of Milford Haven, construction vessels, and associated safety zones during Decommissioning activities	N/A	Minor	Adverse
	Disruption to firing exercise and other military activities due to the presence of construction vessels	N/A	Minor	Adverse
	Damage or disturbance to existing cables during Construction activities	N/A	Minor	Adverse
Chapter 19 - Onshore Geology, Hydrogeology and Hydrology	Compaction and degradation of soils	Soil	Minor	Adverse
	Pollution Impact from Sediment Run-off/Transport or Chemical Contaminated Run-off on surface water	Surface Water	Negligible	-
	Pollution Impact from Sediment Run-off/Transport or Chemical Contaminated Run-off on groundwater receptors	Groundwater	Minor	Adverse
	Pollution Impact from Sediment Run-off/Transport or Chemical Contaminated Run-off on PWS01	PWS01	Minor	Adverse

ES Chapter	Description of Effect	Receptor	Significance of the Residual Effect	Nature of the Residual Effect (Beneficial/Adverse)
	Impact on the integrity of banking / geomorphological changes to watercourses	Watercourses	Minor	Adverse
Chapter 20 - Terrestrial and Coastal Ecology and Onshore Ornithology	Pembrokeshire Bat Sites and Bosherton Lakes SAC / The Oriellon Stable Block and Cellars SSSI: Greater and lesser horseshoe bats – fragmentation of linear commuting features	Greater and lesser horseshoe bats	Negligible	-
	Milford Haven Waterway SSSI: Greater and lesser horseshoe bats – fragmentation of linear commuting features	Greater and lesser horseshoe bats	Negligible	-
	Castlemartin Range SSSI: Greater and lesser horseshoe bats – fragmentation of linear commuting features	Greater and lesser horseshoe bats	Negligible	-
	Habitat - Arable Field Margins: Temporary habitat loss associated with excavations and Construction works.	Arable Field Margins	Negligible	-
	Habitat - Hedgerows: Temporary habitat loss associated with excavations and Construction works.	Hedgerows	Negligible	-

ES Chapter	Description of Effect	Receptor	Significance of the Residual Effect	Nature of the Residual Effect (Beneficial/Adverse)
	Specific habitats: Temporary loss of grassland and rush-pasture habitats, including MG5 Cynosurus cristatus - Centaurea nigra grassland, MG6 Lolium perenne - Cynosurus cristatus grassland and M23 Juncus effusus/acutiflorus-Galium palustre rush-pasture	Specific habitats	Negligible	-
	Bats (general assemblage): Loss of commuting features and foraging habitats:	Bats (general assemblage)	Negligible	-
	Dormouse: Temporary loss/disturbance of foraging, breeding and hibernation habitat	Dormouse	Negligible	-
Chapter 21 - Landscape and Visual Impact	Physical Landscape Effects	Agricultural Land	Minor and not significant	Adverse
		Hedgerows and hedgerow trees	Moderate and not significant	Adverse
		Coastal Landscape	Moderate-minor and not significant	Adverse
	Landscape Character Effects (onshore substation)	cLCA 25 – Hundelton and Lamphey	Moderate and not significant	Adverse

ES Chapter	Description of Effect	Receptor	Significance of the Residual Effect	Nature of the Residual Effect (Beneficial/Adverse)
	Visual Effects (onshore export cable and landfall)	SCA 32 – Inner Milfor Haven	Minor and not significant	Adverse
		Viewpoint 1: Goldborough Road, east of Wallaston Cross	Moderate and significant	Adverse
		Viewpoint 2: Wales Coast Path, Lambeeth Farm	Moderate-minor and not significant	Adverse
		Viewpoint 3: Goldborough Road, near Moreston	Road users: Minor and not significant Residential: Moderate and not significant	Adverse
		Viewpoint 4: B4320, near Wogaston	Minor and not significant	Adverse
		Viewpoint 5: Pennar	Minor and not significant	Adverse
		Viewpoint 6: B4319, near Junction with B4320	Road users: Moderate and not significant Residential: Moderate-major and significant	Adverse
		Viewpoint 7: Minor Road, North Studdock	Minor and not significant	Adverse
		Viewpoint 8: West Angle Bay	Landfall Option 1: Moderate and not significant	Adverse

ES Chapter	Description of Effect	Receptor	Significance of the Residual Effect	Nature of the Residual Effect (Beneficial/Adverse)
			Landfall Option 2: Moderate-minor and not significant Landfall Option 3: Moderate-major and significant	
		Individual Properties at Wallaston Green, Neath Farm and Beach House	Moderate-major and significant	Adverse
		Angle settlement	Moderate-major and significant	Adverse
	Visual Effects (onshore substation)	Viewpoint 1: Goldborough Road, east of Wallaston Cross	Moderate-minor and not significant	Adverse
		Viewpoint 2: Wales Coast Path, Lambeeth Farm	Moderate and significant	Adverse
		Viewpoint 3: Goldborough Road, near Moreston	Road users: Moderate and significant Residential: Moderate-major and significant	Adverse
		Viewpoint 4: B4320, near Wogaston	Moderate-minor and not significant	Adverse
		Viewpoint 5: Pennar	Moderate-minor and not significant	Adverse

ES Chapter	Description of Effect	Receptor	Significance of the Residual Effect	Nature of the Residual Effect (Beneficial/Adverse)
Chapter 22 - Onshore Noise and Vibration	Increased noise along the Study Area	Residential Receptors	Minor	Adverse
	Vibration disturbance along the Study Area	Residential Receptors	Negligible	-
Chapter 23 - Onshore Archaeology and Cultural Heritage	Construction activity around high value sites	PRNs 7931, 7932, 35014 and EWF12	Negligible	-
	Ground-breaking works around low value sites	PRNs 33855, 35015, 102553, 107739, EWF01, EWF02, EWF03 EWF06, EWF08, EWF09, EWF10, EWF11, EWF13, EWF14, EWF15, EWF16, EWF20, EWF23, EWF24 and EWF25	Minor	Adverse
	Ground-breaking works around medium value sites	EWF05 and EWF07	Minor	Adverse
	Ground-breaking works and general Construction activity around high value sites.	PRNs 3244, 101389 and 101392	Minor	Adverse
	Visual impact and disruption in access to sites and viewpoints through Construction activity, thereby temporarily affecting the setting of high value sites.	PE020, PE333, PE494, PE554, LB 17166, LB 17167, LB 17169, HLCA 341, HLCA 342, HLCA 343 and Angle Conservation Area	Minor	Adverse

ES Chapter	Description of Effect	Receptor	Significance of the Residual Effect	Nature of the Residual Effect (Beneficial/Adverse)
	Ground-breaking works and general Construction activity around medium value sites.	PRNs 44603, 48371, EWF18, EWF19 and Archaeological Potential	Minor	Adverse
Chapter 24 - Land Use	Temporary disruption to Agricultural Land Use	Agricultural Land Use	Negligible	-
	Impacts on Agricultural Land Classification (ALC) land through soil disturbance	ALC	Negligible	-
	Impacts on soil resources	Soil resources	Negligible	-
	Disruption to existing Industrial sites	Industrial Sites	No impact	No impact
	Disruption to existing Military sites	Castlemartin Firing Range	No impact	No impact
Chapter 25 - Traffic and Transport	Increase in vehicle flows	Road Users	Negligible	-
	Severance	Road Users	Negligible	-
	Driver Delay	Road Users	Negligible	-
	Pedestrian Amenity	Road Users	Negligible	-
	Accidents and Safety	Road Users	Negligible	-

ES Chapter	Description of Effect	Receptor	Significance of the Residual Effect	Nature of the Residual Effect (Beneficial/Adverse)
	Dust and Dirt	Road Users	Negligible	-
Chapter 26 - Air Quality	Dust deposition (nuisance) on two residential and three commercial properties during earthworks and Construction	Residential and commercial properties	Negligible	-
	Dust deposition (nuisance) on 37 residential properties and four commercial properties during trackout	Residential and commercial properties	Negligible	-
	Human Health Impacts at two residential and three commercial properties during earthworks	Residential and commercial properties	Negligible	-
	Human Health Impacts at one residential and two commercial properties during Construction	Residential and commercial properties	Negligible	-
	Human Health impacts at 37 residential properties and four commercial properties during trackout	Residential and commercial properties	Negligible	-
	Human Health impacts at residential properties due to Construction vehicle and Non-Road Mobile Machinery (NRMM) emissions	Residential and commercial properties	Negligible	-

ES Chapter	Description of Effect	Receptor	Significance of the Residual Effect	Nature of the Residual Effect (Beneficial/Adverse)
Chapter 27 - Socio-economics, Tourism and Recreation	Disruption/reduced access for coastal tourism		Minor	Adverse
	Disruption / reduced access to local businesses	Café at West Angle Bay (Wavecrest Café) and West Angle Caravan Park	Minor	Adverse
		Castle Farm and Newton Farm Campsites and Caravan Park	Negligible	-
		Café Mor and Pembrokeshire Surf Club Outer Reef School	Negligible	-
	Disruption/reduced access for terrestrial recreational users;	N/A	Minor	Adverse
	Disruption/reduced access for coastal recreational users;	N/A	Minor	Adverse
	Disruption to Recreational Vessel Activity	N/A	Minor	Adverse
	Disruption to Chartered Boat Tours	N/A	Minor	Adverse
	Direct and indirect employment benefits, including inward migration of economically active people,	N/A	Minor	Beneficial

ES Chapter	Description of Effect	Receptor	Significance of the Residual Effect	Nature of the Residual Effect (Beneficial/Adverse)
	safeguarding the existing supply chain, new supply chain opportunities			
	Increase in professional roles and training opportunities	N/A	Minor	Beneficial
	Gross Value Added (GVA) Impacts Supported by Construction Activity	N/A	Minor	Beneficial
	Increased Performance of the Local Renewable Energy Sector	N/A	Minor	Beneficial
	Health effects from direct economic benefits/employment	N/A	Minor	Beneficial

Table 31.3 Summary of potential residual effects arising from the Operation and Maintenance phases of the Project

ES Chapter	Description of Effect	Receptor	Significance of the Residual Effect	Nature of the Residual Effect (Beneficial/Adverse)
Chapter 6 - Marine and Coastal Processes	Potential changes to sediment transport system by changes in wave and current climate.	[Potential pathway of effect for other topics]	[Potential pathway of effect for other topics]	[Potential pathway of effect for other topics]
	Potential changes to the morphology of the seabed (including scour).	Pembrokeshire Marine SAC;	Minor	Adverse

ES Chapter	Description of Effect	Receptor	Significance of the Residual Effect	Nature of the Residual Effect (Beneficial/Adverse)
		The West Wales Marine SAC; and Skomer, Skokholm and the Seas off Pembrokeshire SPA.		
	Potential changes in morphology of the coast.	The coastline	Minor	Adverse
Chapter 7 - Marine Seabed and Water Quality	Accidental release of fluids into the environment.	Water quality; WFD designated features such as shellfish waters or designated bathing waters	Negligible	-
	Benthic sediments may be mobilised through scouring effects caused by installation of turbine foundations, anchor points and cable protection. Sediment re-suspension could lead to deterioration in water quality.	Seabed; Bedforms	Negligible	-

ES Chapter	Description of Effect	Receptor	Significance of the Residual Effect	Nature of the Residual Effect (Beneficial/Adverse)
	The introduction of transmission assets may heat surrounding sediments and cause increase bacterial growth.	Water quality	Negligible	-
Chapter 9 - Marine and Coastal Ecology	Effects on brown trout populations on site during operation	Sedimentary and rock benthic habitats identified (Valued Ecological Receptor (VER) groups A-H rock, and VER groups I-L sediment) and Annex I habitat	Negligible	-
	Temporary habitat disturbance (direct)		Minor	Adverse
	Temporary increases in suspended sediments/ smothering (indirect)		Minor	Adverse
	Colonisation of infrastructure by Invasive non-native species (INNS)(indirect)		Minor	Adverse
	Colonisation of infrastructure by marine organisms (non-INNS) (indirect)		Minor	Beneficial
	Protection of benthic habitats from fishing restrictions (indirect)		Minor	Beneficial
	Accidental release of pollutants from vessels (direct)		Minor	Adverse
	Accidental release of pollutants through disturbance of the sediments (indirect)		Minor	Adverse

ES Chapter	Description of Effect	Receptor	Significance of the Residual Effect	Nature of the Residual Effect (Beneficial/Adverse)
	Electric & Magnetic Fields (EMF) from electrical cables (direct)		Minor	Adverse
	Permanent changes to physical processes (indirect)		Minor	Adverse
	Permanent loss of habitat via project infrastructure		Minor	Adverse
Chapter 10 - Fish & Shellfish Ecology	Temporary habitat disturbances via repair and remediation works	Elasmobranchs; Demersal fish; Pelagic fish Migratory fish; and Shellfish.	Minor	Adverse
	Increased suspended sediment and sediment deposition via repairs and remediation works		Fish adult life stages: Negligible Fish eggs/larval life stages, spawning and nursery grounds, and shellfish: Minor	Adverse
	Fish aggregating device and collision effects		Minor	Adverse
	Reduced fishing pressures within the Project area		Minor	Beneficial
	EMF effects from cables		Minor	Adverse

ES Chapter	Description of Effect	Receptor	Significance of the Residual Effect	Nature of the Residual Effect (Beneficial/Adverse)
	Disturbance, injury and mortality from subsea noise produced via operational activities		Negligible	-
Chapter 11 - Offshore Ornithology	Collision Risk	Northern fulmar	Negligible	-
		Manx shearwater	Negligible	-
		Balearic shearwater	Minor	Adverse
		European storm-petrel	Minor	Adverse
		Northern gannet	Negligible	-
		Herring gull	Minor	Adverse
		Great black-backed gull	Minor	Adverse
		Lesser black-backed gull	Minor	Adverse
		Black-legged kittiwake	Minor	Adverse
		Atlantic puffin	Minor	Adverse
		Common guillemot	Minor	Adverse
		Razorbill	Minor	Adverse

ES Chapter	Description of Effect	Receptor	Significance of the Residual Effect	Nature of the Residual Effect (Beneficial/Adverse)
	Displacement	Manx shearwater	Minor	Adverse
		Balearic shearwater	Minor	Adverse
		Northern gannet	Minor	Adverse
		Black-legged kittiwake	Negligible	-
		Atlantic puffin	Minor	Adverse
		Common guillemot	Minor	Adverse
		Razorbill	Minor	Adverse
	Disturbance and displacement from vessel activities (O&M and cable repairs)	Northern fulmar	Negligible	-
		Shearwaters and storm-petrels	Negligible	-
		Northern gannets	Negligible	-
		Gulls	Negligible	-
		Auks	Minor	Adverse

ES Chapter	Description of Effect	Receptor	Significance of the Residual Effect	Nature of the Residual Effect (Beneficial/Adverse)
	Disturbance to foraging birds from underwater noise and vibration via operational activities	Diving seabirds (northern gannet, Manx shearwater, common guillemot, razorbill and Atlantic puffin)	Negligible	-
	Barrier effect of wind turbine generators to regular movements of birds to and from breeding colonies or on migration	All seabirds	Minor	Adverse
	Indirect impacts through effects on habitats and prey species	All seabirds	Negligible	-
	Aggregating effects of turbine structures	All seabirds	Minor	Adverse
	Entanglement risk from ghost fishing gear	All seabirds	Minor	Adverse
	Attraction of nocturnal seabirds (shearwaters and petrels) to lighting on project infrastructure	All seabirds	Minor	Adverse
Chapter 12 - Marine Mammals	Entanglement and collision	All marine mammal receptors	Minor	Adverse
	Collision with vessels	All marine mammal receptors	Minor	Adverse
	Disturbance from vessels	All marine mammal receptors	Negligible to Minor	Adverse
	Disturbance at seal haul outs	Grey seals	Negligible	-

ES Chapter	Description of Effect	Receptor	Significance of the Residual Effect	Nature of the Residual Effect (Beneficial/Adverse)
	Indirect impacts on prey	All marine mammal receptors	Negligible	-
Chapter 13 - Seascape and Visual Impacts	Visual Effects	Viewpoint 1 Caerfai Bay	Low magnitude, not significant (moderate/minor)	Adverse
		Viewpoint 2 St Brides Bay, Nolton Haven	Negligible magnitude, not significant (minor)	Adverse
		Viewpoint 3 Marloes Beacon	Low magnitude, not significant (moderate/minor)	Adverse
		Viewpoint 4 Skomer Island	Medium-low magnitude, not significant (moderate)	Adverse
		Viewpoint 5 St Ann's Head	Low magnitude, not significant (moderate/minor)	Adverse
		Viewpoint 6 South Hook Fort	Low magnitude, not significant (moderate/minor)	Adverse
		Viewpoint 7 West Angle Bay	Low magnitude, not significant (moderate/minor)	Adverse

ES Chapter	Description of Effect	Receptor	Significance of the Residual Effect	Nature of the Residual Effect (Beneficial/Adverse)
		Viewpoint 8 B4320, near Wogaston	Low magnitude, not significant (moderate/minor)	Adverse
		Viewpoint 9 Stack Rocks	Low magnitude, not significant (moderate/minor)	Adverse
		Viewpoint 10 Freshwater West Beach	Low magnitude, not significant (moderate/minor)	Adverse
		Viewpoint 11 Skokholm Island	Medium-low magnitude, not significant (moderate)	Adverse
		Viewpoint 12 Hooper's Point	Low magnitude, not significant (moderate/minor)	Adverse
		Viewpoint 13 Sheep Island	Low magnitude, not significant (moderate/minor)	Adverse
		Viewpoint 14 Castlemartin Range Trail (Cold Comfort)	Low magnitude, not significant (moderate/minor)	Adverse

ES Chapter	Description of Effect	Receptor	Significance of the Residual Effect	Nature of the Residual Effect (Beneficial/Adverse)
		Viewpoint 15 Carn Llidi	Low magnitude, not significant (moderate/minor)	Adverse
		Viewpoint A Martin's Haven	Low magnitude, not significant (moderate/minor)	Adverse
		Viewpoint B Kete National Trust (Car Park)	Low magnitude, not significant (moderate/minor)	Adverse
		Viewpoint C Freshwater West Beach	Low magnitude, not significant (moderate/minor)	Adverse
		Viewpoint D Marloes National Trust (Car Park)	Negligible magnitude, not significant (minor)	Adverse
		Pembrokeshire Coast Path Sections 4, 5, 6, 12, 13	Low magnitude, not significant (moderate/minor)	Adverse
		Pembrokeshire Coast Path Sections 16, 17, 18, 19, 20	Negligible magnitude, not significant (moderate/minor)	Adverse

ES Chapter	Description of Effect	Receptor	Significance of the Residual Effect	Nature of the Residual Effect (Beneficial/Adverse)
		Pembrokeshire Coast Path Section 3, 7, 8, 9, 10, 14, 15, 17, 20	Zero change, not significant	Neutral
		Martin's Haven to Skomer Island Ferry	Low magnitude, not significant (moderate/minor)	Adverse
	Seascape effects	SCA 25 Skomer Island and Marloes Peninsula	Medium-low magnitude, not significant (moderate)	Adverse
		SCA 26 Skokholm and Gateholm coastal waters	Medium-low magnitude, not significant (moderate)	Adverse
		SCA 31 Outer Milford Haven	Low magnitude, not significant (moderate/minor)	Adverse
		SCA 34 Freshwater West	Low magnitude, not significant (moderate/minor)	Adverse
		SCA 35 Castlemartin coastal waters	Low magnitude, not significant (moderate/minor)	Adverse

ES Chapter	Description of Effect	Receptor	Significance of the Residual Effect	Nature of the Residual Effect (Beneficial/Adverse)
	Pembrokeshire Coast National Park Authority (PCNPA) Special Qualities	SCA 25 Skomer Island and Marloes Peninsula	Medium-low magnitude, not significant (moderate)	Adverse
		1. Coastal Splendour	Low magnitude, not significant (moderate/minor)	Adverse
		3. Diversity of Landscape	Low magnitude, not significant (moderate/minor)	Adverse
		8. Islands	Low magnitude, not significant (moderate/minor)	Adverse
		10. Space to Breathe	Low magnitude, not significant (moderate/minor)	Adverse
		11. Remoteness, Tranquility and Wildness	Low magnitude, not significant (moderate/minor)	Adverse
		12. Diversity and Combination of Special Qualities	Low magnitude, not significant (moderate/minor)	Adverse

ES Chapter	Description of Effect	Receptor	Significance of the Residual Effect	Nature of the Residual Effect (Beneficial/Adverse)
Chapter 14 - Offshore Archaeology and Cultural Heritage	Potential impacts to known and potential wreck sites, aviation crash sites and geophysical anomalies	Wreck sites, aviation crash sites and geophysical anomalies	Negligible	
	Potential impacts to potential submerged prehistoric archaeological sites and palaeoenvironmental remains.	Submerged prehistoric archaeological sites and palaeoenvironmental remains	Minor	Adverse
	Potential impacts to maritime infrastructure, intertidal and adjacent sites.	Maritime infrastructure, intertidal and adjacent sites.	Negligible	-
	Potential impacts to Milford Haven Waterway: Landscape of Outstanding Historic Interest.	Milford Haven Waterway: Landscape of Outstanding Historic Interest.	Minor	Adverse
Chapter 15 - Commercial Fisheries	Loss of access to fishing grounds (and associated reduction in revenue) due to long-term presence of Project infrastructure	≤12 m nearshore static gear vessels	No effect	NA
		≤12 m inshore static gear vessels	No effect	NA
		>12 m static gear vessels	No effect	NA
		>12 m inshore mobile gear vessels	No effect	NA
		>12 m offshore mobile gear vessels	Negligible	-

ES Chapter	Description of Effect	Receptor	Significance of the Residual Effect	Nature of the Residual Effect (Beneficial/Adverse)
	Displacement of fishing activity into other areas due to long-term presence of Project infrastructure	≤12 m nearshore static gear vessels	No effect	NA
		≤12 m inshore static gear vessels	No effect	NA
		>12 m static gear vessels	Minor	Adverse
		>12 m inshore mobile gear vessels	Minor	Adverse
		>12 m offshore mobile gear vessels	Negligible	-
		≤12 m nearshore static gear vessels	Minor	Adverse
	Temporary loss of access to fishing grounds) (and associated reduction in revenue) and/or displacement due to presence of export cable repair/remediation vessels and (temporary) advisory exclusion zones	≤12 m inshore static gear vessels	Minor	Adverse
		>12 m static gear vessels	Minor	Adverse
		>12 m inshore mobile gear vessels	Minor	Adverse
		>12 m offshore mobile gear vessels	Negligible	-
		≤12 m nearshore static gear vessels	No effect	NA

ES Chapter	Description of Effect	Receptor	Significance of the Residual Effect	Nature of the Residual Effect (Beneficial/Adverse)
	Increased steaming times due to the presence of the Proposed Development	≤12 m inshore static gear vessels	No effect	NA
		>12 m static gear vessels	No effect	NA
		>12 m inshore mobile gear vessels	No effect	NA
		>12 m offshore mobile gear vessels	Negligible	-
		≤12 m nearshore static gear vessels	Minor	Adverse
	Snagging resulting from seabed obstructions	≤12 m inshore static gear vessels	Minor	Adverse
		>12 m static gear vessels	Minor	Adverse
		>12 m inshore mobile gear vessels	Negligible	-
		>12 m offshore mobile gear vessels	Negligible	-
		≤12 m nearshore static gear vessels	Negligible	-
		≤12 m inshore static gear vessels	Negligible	-

ES Chapter	Description of Effect	Receptor	Significance of the Residual Effect	Nature of the Residual Effect (Beneficial/Adverse)
	Supply chain opportunities for local fishing vessels	>12 m static gear vessels	Minor	Beneficial
		>12 m inshore mobile gear vessels	Moderate	Beneficial
		>12 m offshore mobile gear vessels	Moderate	Beneficial
		≤12 m nearshore static gear vessels	Negligible	-
Chapter 16 - Shipping and Navigation	Presence of project-related vessels, and displacement of vessels from the array area or offshore export cable corridor, may lead to vessel-to-vessel collision	Collision of Large Vessels with Large Vessels	Tolerable (if ALARP)	Adverse
		Collision of Large Vessels with Small Vessels	Broadly Acceptable	Adverse
	Presence of cable laying vessel within port limits and approaches may lead to vessel-to-vessel collision	Collision of Large Vessels with Large Vessels	Tolerable (if ALARP)	Adverse
	Presence of Platform/WTGs (in place) may lead to vessel-to-structure contact	Contact/Allision with Platform/WTGs (in place) of Fishing Vessels	Tolerable (if ALARP)	Adverse
		Contact/Allision with Platform/WTGs (in place) of OWF Service Vessels	Tolerable (if ALARP)	Adverse

ES Chapter	Description of Effect	Receptor	Significance of the Residual Effect	Nature of the Residual Effect (Beneficial/Adverse)
		Contact/Allision with Platform/WTGs (in place) of Commercial vessels	Broadly Acceptable	Adverse
		Contact/Allision with Platform/WTGs (in place) of Recreational Vessels	Broadly Acceptable	Adverse
		Contact/Allision with Platform/WTGs (in place) of Tankers	Broadly Acceptable	Adverse
	Breakout of Platform/WTGs (adrift) may lead to vessel-to-structure contact	Contact/Allision with Platform/WTGs adrift (due to Platform/WTGs breakout) of Commercial vessels	Broadly Acceptable	Adverse
		Contact/Allision with Platform/WTGs adrift (due to Platform/WTGs breakout) of OWF Service Vessels	Broadly Acceptable	Adverse
		Contact/Allision with Platform/WTGs adrift (due to Platform/WTGs breakout) of Fishing Vessels	Broadly Acceptable	Adverse

ES Chapter	Description of Effect	Receptor	Significance of the Residual Effect	Nature of the Residual Effect (Beneficial/Adverse)
		Contact/Allision with Platform/WTGs adrift (due to Platform/WTGs breakout) of Recreational Vessels	Broadly Acceptable	Adverse
		Contact/Allision with Platform/WTGs adrift (due to Platform/WTGs breakout) of Tankers	Broadly Acceptable	Adverse
	Presence of rock protection may reduce under keel clearance and increase risk of grounding	Grounding (export cable route only) of Fishing Vessels	Broadly Acceptable	Adverse
		Grounding (export cable route only) of Recreational Vessels	Broadly Acceptable	Adverse
	Snagging with Platform/WTGs moorings, inter array cable or export cable	Snagging with Platform/WTGs moorings, inter array cables or export cable of Fishing Vessels	Tolerable (if ALARP)	Adverse
		Snagging with Platform/WTGs moorings, inter array cables or export cable of OWF Service Vessels	Broadly Acceptable	Adverse
		Snagging with Platform/WTGs moorings, inter array cables or export cable of Commercial vessels	Broadly Acceptable	Adverse

ES Chapter	Description of Effect	Receptor	Significance of the Residual Effect	Nature of the Residual Effect (Beneficial/Adverse)
		Snagging with Platform/WTGs moorings, inter array cables or export cable of Recreational Vessels	Broadly Acceptable	Adverse
		Snagging with Platform/WTGs moorings, inter array cables or export cable of Tankers	Broadly Acceptable	Adverse
	Presence of Platform/ wind turbine generator (WTG) (and associated sub-surface infrastructure) may lead to vessel rerouting	Tanker and Cargo vessels rerouting due to presence of Project structures	Broadly Acceptable	Adverse
	Presence of Platform/WTG (and associated sub-surface infrastructure) may disrupt MHPA tanker waiting area	Presence of Project structures resulting in insufficient sea room for Tankers waiting to enter MHPA and disruption to MHPA operations	Broadly Acceptable	Adverse
	Presence of Platform/WTG (and associated sub-surface infrastructure) may affect search and rescue operations	Presence of Project structures inhibiting search and rescue assets from entering and operating within array area	Broadly Acceptable	Adverse
	Presence of Platform/WTG (and associated sub-surface infrastructure) may affect visual navigation and collision avoidance	Presence of Project structures disrupting visual navigation and collision avoidance resulting in increased collision risk	Broadly Acceptable	Adverse

ES Chapter	Description of Effect	Receptor	Significance of the Residual Effect	Nature of the Residual Effect (Beneficial/Adverse)
	Presence of Platform/WTG (and associated sub-surface infrastructure) may affect communications, radar and positioning systems	Presence of Project structures disrupting communications, radar and positioning systems resulting in increased collision and contact (allision) risk	Broadly Acceptable	Adverse
Chapter 17 - Aviation and Radar	Creation of Aviation Obstacle to Fixed Wing and Rotary Aircraft Operating Offshore	Fixed Wing and Rotary Aircraft	Negligible	-
	WTG causing Interference on Civil and Military Radar Systems	Civil and Military Radar Systems	Minor	Adverse
Chapter 18 - Coastal and Marine Infrastructure and Other Users	Disturbance and obstruction to other marine renewable project activities arising from the use of the Port of Milford Haven, O&M vessels, and associated safety zones during O&M activities.	META Bombora Valorous	Minor	Adverse
	Disruption to firing exercise and other military activities due to the presence of O&M vessels	MoD	Minor	Adverse
	Damage or disturbance to existing cables during Construction activities	SOLAS Greenlink	Minor	Adverse
	Changes to hydrology	Hydrology	Negligible	-

ES Chapter	Description of Effect	Receptor	Significance of the Residual Effect	Nature of the Residual Effect (Beneficial/Adverse)
Chapter 19 - Onshore Geology, Hydrogeology and Hydrology	Surface Water Drainage (Increased Rate of Surface Water Run-off) and Alteration to flood risk	Surface Water Drainage	Negligible	-
	Long-term Changes to Groundwater Flow Regime	Groundwater	Minor	Adverse
Chapter 20 - Terrestrial and Coastal Ecology and Onshore Ornithology	Designated Sites: Pembrokeshire Bat Sites and Bosherston Lakes SAC / The Orierton Stable Block and Cellars SSSI; Milford Haven Waterway SSSI; and Castlemartin Range SSSI Greater and lesser horseshoe bats – fragmentation of linear commuting features	Greater and lesser horseshoe bats	Moderate	Beneficial
	Habitats - Arable Field Margins and Hedgerows: Temporary habitat loss associated with excavations and Construction works.	Arable Field Margins and Hedgerows	Moderate	Beneficial
	Loss of commuting features and foraging habitats	Bats (general assemblage)	Moderate	Beneficial
	Temporary loss/disturbance of foraging, breeding and hibernation habitat	Dormouse	Moderate	Beneficial
	Disturbance / Loss of breeding / foraging habitat	Breeding and Wintering Bird Assemblage	Low	Beneficial

ES Chapter	Description of Effect	Receptor	Significance of the Residual Effect	Nature of the Residual Effect (Beneficial/Adverse)
Chapter 21 - Landscape and Visual Impact	Landscape characters effects (onshore substation)	cLCA 25 – Hundelton and Lamphey	(After 15 years) Moderate-minor and not significant	Adverse
		SCA 32 – Inner Milfor Haven	(After 15 years) Minor and not significant	Adverse
	Visual effects (onshore substation)	Viewpoint 1: Goldborough Road, east of Wallaston Cross	(After 15 years) Moderate-minor and not significant	Adverse
		Viewpoint 2: Wales Coast Path, Lambeeth Farm	(After 15 years) Moderate and not significant	Adverse
		Viewpoint 3: Goldborough Road, near Moreston	(After 15 years) Road users: Minor and not significant (After 15 years) Residential: Moderate and not significant	Adverse
		Viewpoint 4: B4320, near Wogaston	(After 15 years) Moderate-minor and not significant	Adverse
		Viewpoint 5: Pennar	(After 15 years) Minor and not significant	Adverse

ES Chapter	Description of Effect	Receptor	Significance of the Residual Effect	Nature of the Residual Effect (Beneficial/Adverse)
Chapter 22 - Onshore Noise and Vibration	Noise from the onshore substation	Residential Receptors	Negligible	-
Chapter 23 - Onshore Archaeology and Cultural Heritage	Visual impacts of the substation development on the setting of high value sites.	PE059, PE064, LB 6598 and HLCA 341	Minor	Adverse
Chapter 24 - Land Use	Permanent change of land use	Land Use	Minor	Adverse
	Impacts on ALC land	ALC	Minor	Adverse
	Permanent restriction of land use within the cable easement	Land Use	Negligible	-
Chapter 25 - Traffic and Transport	No effects are expected during the Operational phase.			
Chapter 26 - Air Quality	No effects are expected during the Operational phase.			
Chapter 27 - Socio-economics, Tourism and Recreation	Disruption / reduced access to local businesses	Local businesses	Minor	Adverse
	Disruption to Recreational Vessel Activity	Recreational vessels	Minor	Adverse
	Disruption to Chartered Boat Tours	Chartered boat tours	Minor	Adverse

ES Chapter	Description of Effect	Receptor	Significance of the Residual Effect	Nature of the Residual Effect (Beneficial/Adverse)
	Operational Employment, including Supply Chain Impacts	Local employment market and supply chain	Minor	Beneficial
	Increase in professional roles and training opportunities	Local employment market and supply chain	Minor	Beneficial
	Gross Value Added (GVA) Impacts Supported by O&M Activity	GVA	Minor	Beneficial
	Increased Performance of the Local Renewable Energy Sector	Local Renewable Energy Sector	Minor	Beneficial
	Electromagnetic Field Impacts	Local population	Negligible	-
	Well-being of Future Generations Goals associated with green energy	Local population	Minor	Beneficial

Table 31.4 Summary of potential residual effects arising from the Decommissioning phase of the Project

ES Chapter	Description of Effect	Receptor	Significance of the Residual Effect	Nature of the Residual Effect (Beneficial/Adverse)
Chapter 6 - Marine and Coastal Processes	Potential increases in SSC and associated changes to seabed substrate.	[Potential pathway of effect for other topics]	[Potential pathway of effect for other topics]	[Potential pathway of effect for other topics]
	Potential changes to sediment transport system by changes in wave and current climate.	[Potential pathway of effect for other topics]	[Potential pathway of effect for other topics]	[Potential pathway of effect for other topics]

ES Chapter	Description of Effect	Receptor	Significance of the Residual Effect	Nature of the Residual Effect (Beneficial/Adverse)
	Potential changes to the morphology of the seabed (including scour).	Pembrokeshire Marine SAC; The West Wales Marine SAC; and Skomer, Skokholm and the Seas off Pembrokeshire SPA.	Minor	Adverse
	Potential changes in morphology of the coast.	The coastline	Minor	Adverse
Chapter 7 - Marine Seabed and Water Quality	Removal of piles drilled into hard rock seabed during Decommissioning may produce additional suspended particles which may become part of the local sediment transport regime.	Water quality; WFD designated features such as shellfish waters or designated bathing waters	Negligible	-
	Accidental release of fluids into the environment.	Water quality; WFD designated features such as shellfish waters or designated bathing waters	Negligible	-
Chapter 9 - Marine and Coastal Ecology	Temporary habitat loss and disturbance (direct)	Sedimentary and rock benthic habitats identified (Valued Ecological Receptor (VER) groups A-H rock, and VER groups I-L sediment) and Annex I habitat	Minor	Adverse
	Temporary increases in suspended sediments/ smothering (indirect)		Minor	Adverse
	Introduction of INNS (indirect)		Minor	Adverse
	Accidental release of pollutants from vessels (direct)		Minor	Adverse
	Accidental release of pollutants through disturbance of the sediments (indirect)		Minor	Adverse
Chapter 10 - Fish &	Temporary habitat disturbance via removal of moorings and cables	Elasmobranchs; Demersal fish;	Minor	Adverse

ES Chapter	Description of Effect	Receptor	Significance of the Residual Effect	Nature of the Residual Effect (Beneficial/Adverse)
Shellfish Ecology	Increased suspended sediment and sediment deposition	Pelagic fish Migratory fish; and Shellfish.	Fish adult life stages: Negligible Fish eggs/larval life stages, spawning and nursery grounds, and shellfish: Minor	Adverse
	Disturbance, injury and mortality from subsea noise produced via Decommissioning activities		Minor	Adverse
Chapter 11 - Offshore Ornithology	Indirect impacts as a result of displacement of prey due to Construction activities	All seabirds		
	Disturbance and displacement from increased vessel activity (array and ECC)	Northern fulmar	Negligible	-
		Shearwaters and storm-petrels	Negligible	-
		Northern gannets	Negligible	-
		Gulls	Negligible	-
		Auks	Minor	Adverse
	Disturbance and displacement from underwater noise via Construction activities (including piling and UXO)	Diving seabirds (northern gannet, Manx shearwater, common guillemot, razorbill and Atlantic puffin)	Negligible	-
Chapter 12 - Marine Mammals	Disturbance from removal of structures	All marine mammal receptors	Negligible to Minor	Adverse
	Collision with vessels	All marine mammal receptors	Minor	Adverse
	Disturbance from vessels	All marine mammal receptors	Negligible to Minor	Adverse
	Disturbance at seal haul-outs	Grey seals	Negligible	-
	Indirect impacts on prey	All marine mammal receptors	Negligible	-

ES Chapter	Description of Effect	Receptor	Significance of the Residual Effect	Nature of the Residual Effect (Beneficial/Adverse)
Chapter 13 - Seascape and Visual Impacts	The residual effects arising as a result of the Decommissioning of the Proposed Development are assessed as being of the same magnitude and significance on all seascape, landscape and visual receptors as those arising due to their operation and maintenance, as summarised in Table 31.3, with the residual effects being short-term and temporary, occurring during the length of the Decommissioning phase and differing in nature from the operational effects mainly due the influence of the various Construction vessels in the seascape during the Decommissioning phase that will not be present or result in effects during the operational phase.			
Chapter 14 - Offshore Archaeology and Cultural Heritage	The parameters of decommissioning activities are not yet fixed. However, such activities may have the potential to impact archaeological remains if they involve intrusive works beyond the area of construction, maintenance, and operation impacts. Mitigation should be discussed in detail with the regulator prior to decommissioning. However, at this stage it is recommended that the AEZs and TAEZs are maintained during this phase, and the protocol for reporting finds of historic interest remains in place during decommissioning.			
Chapter 15 - Commercial Fisheries	As per impacts in the Construction phase for the following: temporary loss of access to fishing grounds, temporary increased steaming times, supply chain opportunities and collision risk.			
Chapter 16 - Shipping and Navigation	Presence of project-related vessels, and displacement of vessels from the array area or offshore export cable corridor, may lead to vessel-to-vessel collision	Collision of Large Vessels with Large Vessels	Tolerable (if ALARP)	Adverse
		Collision of Large Vessels with Small Vessels	Broadly Acceptable	Adverse
		Collision of Small Vessels with Small Vessels	Broadly Acceptable	Adverse
	Presence of cable laying vessel within port limits and approaches may lead to vessel-to-vessel collision	Collision of Large Vessels with Large Vessels	Tolerable (if ALARP)	Adverse
	Presence of Platform/WTGs (in place) may lead to vessel-to-structure contact	Contact/Allision with Platform/WTGs (in place) of Fishing Vessels	Tolerable (if ALARP)	Adverse
		Contact/Allision with Platform/WTGs (in place) of OWF Construction Vessels	Tolerable (if ALARP)	Adverse

ES Chapter	Description of Effect	Receptor	Significance of the Residual Effect	Nature of the Residual Effect (Beneficial/Adverse)
		Contact/Allision with Platform/WTGs (in place) of Commercial vessels	Broadly Acceptable	Adverse
		Contact/Allision with Platform/WTGs (in place) of Recreational Vessels	Broadly Acceptable	Adverse
		Contact/Allision with Platform/WTGs (in place) of Tankers	Broadly Acceptable	Adverse
	Breakout of Platform/WTGs (adrift) may lead to vessel-to-structure contact	Contact/Allision with Platform/WTGs adrift (due to Platform/WTGs breakout) of Commercial vessels	Broadly Acceptable	Adverse
		Contact/Allision with Platform/WTGs adrift (due to Platform/WTGs breakout) of Fishing Vessels	Broadly Acceptable	Adverse
		Contact/Allision with Platform/WTGs adrift (due to Platform/WTGs breakout) of OWF Construction Vessels	Broadly Acceptable	Adverse

ES Chapter	Description of Effect	Receptor	Significance of the Residual Effect	Nature of the Residual Effect (Beneficial/Adverse)
		Contact/Allision with Platform/WTGs adrift (due to Platform/WTGs breakout) of Recreational Vessels	Broadly Acceptable	Adverse
		Contact/Allision with Platform/WTGs adrift (due to Platform/WTGs breakout) of Tankers	Broadly Acceptable	Adverse
	Presence of rock protection may reduce under keel clearance and increase risk of grounding	Grounding (export cable route only) of Fishing Vessels	Broadly Acceptable	Adverse
		Grounding (export cable route only) of Recreational Vessels	Broadly Acceptable	Adverse
	Snagging with Platform/WTGs moorings, inter array cable or export cable	Snagging with Platform/WTGs moorings, inter array cables or export cable of Fishing Vessels	Tolerable (if ALARP)	Adverse
		Snagging with Platform/WTGs moorings, inter array cables or export cable of OWF Construction Vessels	Tolerable (if ALARP)	Adverse

ES Chapter	Description of Effect	Receptor	Significance of the Residual Effect	Nature of the Residual Effect (Beneficial/Adverse)
		Snagging with Platform/WTGs moorings, inter array cables or export cable of Commercial vessels	Broadly Acceptable	Adverse
		Snagging with Platform/WTGs moorings, inter array cables or export cable of Recreational Vessels	Broadly Acceptable	Adverse
		Snagging with Platform/WTGs moorings, inter array cables or export cable of Tankers	Broadly Acceptable	Adverse
	Presence of Platform/WTG (and associated sub-surface infrastructure) may lead to vessel rerouting	Tanker and Cargo vessels rerouting due to presence of Project structures	Broadly Acceptable	Adverse
	Presence of Platform/WTG (and associated sub-surface infrastructure) may disrupt MHPA tanker waiting area	Presence of Project structures resulting in insufficient sea room for Tankers waiting to enter MHPA and disruption to MHPA operations	Broadly Acceptable	Adverse

ES Chapter	Description of Effect	Receptor	Significance of the Residual Effect	Nature of the Residual Effect (Beneficial/Adverse)
	Presence of Platform/WTG (and associated sub-surface infrastructure) may affect search and rescue operations	Presence of Project structures inhibiting search and rescue assets from entering and operating within array area	Broadly Acceptable	Adverse
	Presence of Platform/WTG (and associated sub-surface infrastructure) may affect visual navigation and collision avoidance	Presence of Project structures disrupting visual navigation and collision avoidance resulting in increased collision risk	Broadly Acceptable	Adverse
	Presence of Platform/WTG (and associated sub-surface infrastructure) may affect communications, radar and positioning systems	Presence of Project structures disrupting communications, radar and positioning systems resulting in increased collision and contact (allision) risk	Broadly Acceptable	Adverse
Chapter 17 - Aviation and Radar	Creation of Aviation Obstacle to Fixed Wing and Rotary Aircraft Operating Offshore	Fixed Wing and Rotary Aircraft	Negligible	-
Chapter 18 - Coastal and Marine Infrastructure and Other Users	Disturbance and obstruction to other marine renewable project activities arising from the use of the Port of Milford Haven, Decommissioning vessels, and associated safety zones during Decommissioning activities.	META Bombora Valorous	Minor	Adverse
	Disruption to firing exercise and other military activities due to the presence of Decommissioning vessels	MoD	Minor	Adverse

ES Chapter	Description of Effect	Receptor	Significance of the Residual Effect	Nature of the Residual Effect (Beneficial/Adverse)
	Damage or disturbance to existing cables during Construction activities	SOLAS Greenlink	Minor	Adverse
Chapter 19 - Onshore Geology, Hydrogeology and Hydrology	Potential effects of the Decommissioning stage on onshore geology, hydrogeology and hydrology are fewer than those at Construction and typically of a lesser magnitude in term of scale and effect. The effect of the Decommissioning phase on onshore geology, hydrogeology and hydrology is considered unlikely to give rise to significant effects, considering a Decommissioning Environmental Management Plan will be in place and considering that the onshore export cable will be left in situ within 250m of the supply to minimise the risk to the PWS, should PWS01 and PWS03 still be serving as PWS's.			
Chapter 20 - Terrestrial and Coastal Ecology and Onshore Ornithology	Demolition of transition joint bay and substation building: Disturbance / displacement of protected species and habitats	N/A	Negligible	-
Chapter 21 - Landscape and Visual Impact	The effects are likely to be similar but no worse than that identified for the Construction phase. The effects would relate principally to the Decommissioning process and are therefore very temporary,			
Chapter 22 - Onshore Noise and Vibration	The effects are likely to be similar but no worse than that identified for the Construction phase.			
Chapter 23 - Onshore Archaeology and Cultural Heritage	No effects are expected during the Decommissioning phase.			
Chapter 24 - Land Use	Cumulative impact on agricultural land use and soils		Minor	Adverse
Chapter 25 - Traffic and Transport	The effects are likely to be similar but no worse than that identified for the Construction phase.			
Chapter 26 - Air Quality	No effects are expected during the Decommissioning phase.			
Chapter 27 - Socio-	The same type and significance of cumulative effects as described for the Construction phase would potentially arise if Decommissioning of the Project and the other projects in the vicinity occurred simultaneously, resulting in no greater than minor adverse effects.			

ES Chapter	Description of Effect	Receptor	Significance of the Residual Effect	Nature of the Residual Effect (Beneficial/Adverse)
economics, Tourism and Recreation				