ABWP Phase I Decommissioning

Marine Strategy Framework Directive Assessment

Volume 3, Appendix 1.4



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Project name ABWP Phase I Decommissioning

Project no. 1620011606-002

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Document revision history

Version	Reason for issue	Author	Date	Checked	Date	Approved	Date
1	Client First Issue	AvV/LH	18.06.2026	JT	22.06.2026	KB	23.06.2026
2	Client Second Issue	AvV	07.07.2026	JT	12.07.2026	KB	16.07.2026

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Statement of Authority

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Glossary

Term	Meaning
Arklow Bank Wind Park (ABWP) Phase I	Arklow Bank Wind Park (ABWP) Phase I comprises: • Offshore infrastructure seaward of High Water Mark (HWM), including: – Seven Wind Turbine Generators (WTG) with a combined capacity of 25.2 MW; – One meteorological (met) mast; – Inter-array cables connecting the WTGs and met mast; and – One offshore export cable connecting WTG T4 with landfall at HWM; • Onshore infrastructure landward of HWM including: – One onshore cable connecting landfall at HWM with the onshore substation; and – One onshore substation compound, where the onshore substation and ancillary infrastructure are located.
Appropriate Assessment (AA)	An assessment of the likely significant effects of a plan or project (in combination with other plans or projects) on the Natura 2000 site network, which in Ireland comprises Special Areas of Conservation (SACs) and Special Protection Areas (SPAs). These sites are protected by National and European law. The assessment is underpinned by the precautionary principle whereby a proposal cannot be granted permission if significant impacts are anticipated or cannot be ruled out. It entails the preparation of a Natura Impact Statement (NIS) for projects, or a Natura Impact Report (NIR) for plans under the Planning and Development (Amendment) Act 2010 (Office of the Planning Regulator, n.d.).

Term	Meaning
AA screening	A process undertaken by the competent authority to assess, in view of best scientific knowledge, if a proposed development, individually or in combination with other plan or project is likely to have a significant effect on a European site, and whether an appropriate assessment (AA) is required or not (Section 177U(1), Planning and Development Act 2000 (as amended)).
Additional mitigation	Actions that will be required to reduce the significance of environmental effects of the Proposed Works, which will be dependent on the significance of effects assessed in the EIAR. Also referred to as secondary mitigation in Institute of Environmental Management and Assessment (IEMA) (2024). IEMA is now the Institute of Sustainability and Environmental Professionals (ISEP).
Anthropogenic	Originating from human activity or influence.
Arklow Energy	Arklow Energy Limited, the entity seeking planning permission for the Proposed Works, i.e. the applicant.
Baseline	A description of the relevant aspects of the current state of the environment (baseline scenario) (EIA Directive 2014/52/EU).
Commercial Fishing	Any form of fishing activity legally undertaken where the catch is sold for taxable profit.
Conservation Objective (CO)	A specified population size and distribution objective for a species, or a specified area and quality objective for a habitat, to ensure that a site contributes as best as possible to achieving favourable conservation status at national, biogeographical or European level (Article 1(k) of the Habitats Directive (92/43/EEC)).
Decommissioning	The final closing down and putting into a state of safety of a development, project or process when it has come to the end of its useful life (EPA, 2022).
Detailed Marine Mammal Mitigation Protocol (MMMP)	The contractor-developed version of the MMMP, to be prepared before Proposed Works Offshore commence and maintained as a live document until completion.
Detailed Offshore Decommissioning Environmental Management Plan (DEMP)	The contractor-developed version of the Outline Offshore DEMP, to be prepared before Proposed Works Offshore commence and maintained as a live document until completion.
Detailed Offshore Waste Management Plan (WMP)	The contractor-developed version of the Outline Offshore WMP, to be prepared before Proposed Works Offshore commence and maintained as a live document until completion.
Detailed Onshore Decommissioning Management Plan (DEMP)	The contractor-developed version of the Outline Onshore DEMP, to be prepared before Proposed Works Onshore commence and maintained as a live document until completion.
Detailed Onshore Waste Management Plan (WMP)	The contractor-developed version of the Outline Onshore WMP, to be prepared before Proposed Works Onshore commence and maintained as a live document until completion.
Detailed Vessel Management Plan (VMP)	The contractor-developed version of the Outline VMP, to be prepared before Proposed Works Offshore commence and maintained as a live document until completion.
Dredged material	Seabed material arising from localised dredging potentially required to facilitate safe vessel access during Proposed Works Offshore, and / or extraction of seabed material located inside monopile (MP) foundations, as part of MP decommissioning.
Ecosystem	Dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit (United Nations, 1992).
Embedded mitigation	Mitigation measures included as part of the Proposed Works. Include modifications arising through the iterative design process; and standard industry practice that would occur even without input from the EIA process, e.g. actions undertaken to meet other existing legislative

Term	Meaning
	requirements, or actions that are standard practices used to manage commonly occurring environmental effects. Correspond to primary and tertiary mitigation defined in Institute of Environmental Management and Assessment (IEMA) (now Institute of Sustainability and Environmental Professionals (ISEP)) (2024).
Environmental Impact Assessment (EIA)	Process of assessment of the effects of a project or development proposal on the environment. In the planning area, it is undertaken by a planning authority or An Coimisiún Pleanála during the consideration of applications for planning permission, taking account of an Environmental Impact Assessment Report (EIAR). The projects which require EIA are listed in Annex I and Annex II of the EIA Directive, as amended (Office of the Planning Regulator, n.d.).
Environmental Impact Assessment Report (EIAR)	A report or statement of the effects, if any, that Proposed Works, if carried out, would have on the environment. It is prepared by the developer to inform the EIA process (Office of the Planning Regulator, n.d.).
Exclusive Economic Zone (EEZ)	Area beyond and adjacent to the territorial sea, subject to the specific legal regime established in this Part (UNCLOS, 1982). The EEZ in Ireland extends up to 200 nautical miles (nm) from the outer edge of the territorial sea.
Favourable Conservation Status (FCS)	Refers to an approach to habitat/species conservation through a system based on functioning ecological networks, provision of ecosystem services and resilience to the impacts of climate change
Fishing Ground	An area of water or seabed targeted by fishing activity.
Fleet	A physical group of vessels sharing similar characteristics (e.g. nationality).
Geographic Information System (GIS)	An array of technological tools for the management, analysis and display of spatial data that can provide evidence-based information to support biodiversity impact assessment and natural resource management (Office of the Planning Regulator, n.d.).
Good Environmental Status (GES)	Environmental status of marine waters where these provide ecologically diverse and dynamic oceans and seas which are clean, healthy and productive within their intrinsic conditions, and the use of the marine environment is at a level that is sustainable, thus safeguarding the potential for uses and activities by current and future generations (Marine Strategy Framework Directive (MSFD) (2008/56/EC)).
Grapnel Run	A cable recovery technique involving dragging a grapnel along the seabed, causing shallow and temporary seabed disturbance.
Impact	A change brought about by the Proposed Works.
Impulsive sound	Sound that is broadband, extremely short in duration, with a rapid rise time and a peak level higher than its energy-averaged level.
Inter-array cables	Subsea power lines that link individual wind turbine generators (WTGs) together in an offshore wind farm, forming an electrical network. In ABWP Phase I, inter-array cables connect WTGs and the met mast to each other and have an overall length of 7.4 km.
Intertidal	The area between the HWM and the Low Water Mark (LWM).
List of Waste (LoW)	The classification system used to assign waste codes to hazardous and non-hazardous waste.
Magnitude	A combination of the spatial extent, duration, frequency and reversibility of an impact.
Maximum design scenario (MDS)	Represents 'realistic worst case' assessment parameters for each impact.
Meteorological (Met) mast	A mast with a number of meteorological sensors located at different heights to record meteorological and sea condition data

Term	Meaning
Mitigation measures	Measures to avoid, prevent or reduce impacts (EPA, 2022), which comprise both embedded and additional mitigation, see separate definitions for these.
Monitoring	The periodic or continuous observation of biodiversity indicators and of other parameters that may affect biodiversity for any changes that may occur over time, so as to confirm predictions made with respect to likely effects and identify adverse changes that may require remedial action (Office of the Planning Regulator, n.d.).
Monopile (MP)	Hollow steel cylinder driven into the seabed typically used to anchor an offshore wind turbine generator (WTG). In ABWP Phase I, MPs support the seven WTGs as well as the meteorological (met) mast.
Morphodynamics	The study of morphological changes in seabed features driven by sediment transport processes.
Natura Impact Statement (NIS)	A statement, for the purposes of Article 6(3) of the Habitats Directive, of the implications of a proposed development, on its own or in combination with other plans or projects, for one or more than one European site, in view of the conservation objectives of the site or sites. This is prepared by the applicant (Office of the Planning Regulator, n.d.).
Noise	The terms noise and sound are often used interchangeably. Noise usually refers to unwanted or disturbing sounds that interfere with normal hearing and can be unpleasant or harmful. It is often characterised by irregularities in the sound waves and is considered a form of sound pollution.
Non-impulsive sound	Sound that is continuous or occurs intermittently but does not exhibit the distinctive features associated with impulsive sound.
Offshore export cable	Subsea power cable that transports the total generated power from an offshore wind farm to the onshore power grid. In ABWP Phase I, the offshore export cable connects the wind turbine generator (WTG) T4 to landfall with an approximate overall length of 15.6 km. At landfall, the offshore export cable transitions to the onshore cable connecting to the onshore substation.
Offshore Site	Part of the Site where Proposed Works Offshore are proposed to take place. In this application for planning permission, the Offshore Site comprises the Sub Lease Area, where the ABWP Phase I wind turbine generators (WTGs), met mast and inter-array cables are located, and the offshore export cable 10 m corridor connecting WTG T4 to the landfall at high water mark (HWM) near Arklow Harbour.
Pathway	The route by which an effect is conveyed between a source and a receptor (EPA, 2022).
Planning permission	Formal, legal approval required from a local planning authority or An Coimisiún Pleanála (ACP) to carry out development. The Proposed Works require planning permission submitted from ACP under Section 291 of the Planning and Development Act 2000, as amended.
Polychlorinated biphenyls (PCB)	A class of chemicals that belong to a broad family of human-created organic chemicals known as chlorinated hydrocarbons. Although most were banned in 1986, they linger on in detectable levels in animals, fish and humans.
Potting	Static gear fishery using baited pots or creels to target shellfish species such as whelk, lobster and brown crab.
Principal Decommissioning Contractor	In this document, meaning the contractor(s) appointed to undertake the Proposed Works Offshore and to prepare, implement and update the Detailed Environmental Management Plan (DEMP) and associated management plans, keeping them as live documents until completion.
Proposed Works	The Proposed Works include decommissioning of ABWP Phase I offshore infrastructure (Proposed Works Offshore) and decommissioning of ABWP Phase I onshore infrastructure (Proposed Works Onshore).
Receptor	Any element in the environment which is subject to impacts (EPA, 2022).

Term	Meaning
Residual effect	The final predicted effect / impact remaining after mitigation (EPA, 2022).
Scour protection	Engineered barrier typically placed on the seabed around WTG foundations and subsea cables to prevents sediment erosion caused by accelerated water currents and waves, safeguarding the WTG's stability and protecting subsea cables. In ABWP Phase I, scour protection was originally introduced in the form of rock armour, however, this proved ineffective, and was removed in 2005. Since then, scour protection has been introduced through sandbags.
Shellfish	Within the context of commercial fisheries and aquaculture, shellfish is considered a generic term to define molluscs and crustaceans; fish with a hard outer case or shell.
Sound	The terms noise and sound are often used interchangeably. Sound is a broad term that refers to any auditory experience created by vibrations that travel through a medium such as air, water, or solids to the ear.
Source	The activity or place from which an effect originates (EPA, 2022)
Sub Lease Area	Area where the ABWP Phase I WTGs, met mast and inter-array cables are located, as defined in the Sub Lease granted by Sure Partners Limited (SPL) to Arklow Energy Limited (Arklow Energy) to construct and operate ABWP Phase I.
Surface water	Surface waters include rivers, lakes, transitional and coastal waters.
Temporary Threshold Shift (TTS)	A recoverable reversible increase in the threshold of audibility.
Waste	Any substance or object belonging to a category of waste specified in the First Schedule or for the time being included in the European Waste Catalogue which the holder discards or intends or is required to discard, and anything which is discarded or otherwise dealt with as if it were waste shall be presumed to be waste until the contrary is proved (Waste Management Act 1996 (as amended)).
Waste Hierarchy	The order of preference for managing waste, prioritising prevention, reuse, recycling and recovery ahead of disposal.
Wind Turbine Generator (WTG)	Structure that converts the kinetic energy of ocean winds into electrical energy. ABWP Phase I includes seven GE Energy 3.6s WTGs with a rated capacity of 3.6 megawatts (MW) per WTG.

Acronyms

Acronym	Meaning
AA	Appropriate Assessment
ABWP	Arklow Bank Wind Park
ACP	An Coimisin Pleanla
BWM	BWM Convention - Ballast Water Management Convention
DCCAE	Department of Communications, Climate Action & Environment
DEMP	Decommissioning Environmental Management Plan
DHLGH	Department of Housing, Local Government and Heritage
DP	Dynamic Positioning
EEZ	Exclusive Economic Zone
EIAR	Environmental Impact Assessment Report
EPA	Environmental Protection Agency
EU	European Union

Acronym	Meaning
FMMS	Fisheries Management and Mitigation Strategy
GES	Good Environmental Status
IEMA	Institute of Environmental Management and Assessment
JNCC	Joint Nature Conservation Committee
JUB	Jack-Up Barge
LF	Low Frequency
MDB	MacCabe Durney Barnes
MMMP	Marine Mammal Mitigation Protocol
MP	Monopile
MPCP	Marine Pollution Contingency Plan
MRU	Marine Reporting Unit
MSFD	Marine Strategy Framework Directive
OPRC	Oil Pollution Preparedness, Response and Co-Operation Convention
OSPAR Convention	Convention for the Protection of the Marine Environment of the North-East Atlantic
SBP	Sub Bottom Profiling
SEAI	Sustainable Energy Authority of Ireland
SI	Statutory Instrument
SSC	Suspended Sediment Concentration
TTS	Temporary Threshold Shift
uPBTs	ubiquitous,persistent,bioaccumulative,andtoxicsubstances
USBL	Ultra-Short Baseline
VMP	Vessel Management Plan
WFD	Water Framework Directive
WMP	Waste Management Plan
WTG	Wind Turbine Generators

Units

Unit	Meaning
km	Kilometre
kV	Kilovolts
m	Metre
MW	Megawatts
nm	Nautical mile

Executive Summary

This Marine Strategy Framework Directive (MSFD) Assessment seeks to demonstrate that the decommissioning of Arklow Bank Wind Park (ABWP) Phase I (the Proposed Works) is in line with the objectives of Ireland's national Marine Strategy, which is underpinned by the MSFD. The MSFD provides a framework to achieve a clean, healthy, biologically diverse and sustainably used marine environment.

This MSFD Assessment describes the legislative context of the MSFD, including setting out the 11 descriptors for determining Good Environmental Status (GES). This assessment also summarises the current status of Ireland's marine environment against the 11 descriptors, as detailed within Ireland's most recent Marine Strategy Part 1 (Department of Housing, Local Government and Heritage, 2024).

A qualitative approach, drawing on the outcomes of the Environmental Impact Assessment Report (EIAR) for the Proposed Works, has been adopted to determine whether the Proposed Works could undermine or otherwise influence Ireland's ability to attain or maintain GES for each of the 11 descriptors. Threshold values for determining GES have also been considered, where these have been established.

As no impact pathway is expected between the Proposed Works Onshore and the marine environment, and given the nature, scale and duration of the Proposed Works Offshore and the mitigation measures that will be in place to minimise or mitigate potential environmental effects, it is concluded that the Proposed Works are highly unlikely to prevent the achievement or maintenance of GES in Ireland.

1 Introduction

1.1.1.1 Arklow Energy Limited (Arklow Energy) is seeking planning permission to decommission Arklow Bank Wind Park (ABWP) Phase I (referred to hereafter as 'the Proposed Works'). The Proposed Works include decommissioning of ABWP Phase I offshore infrastructure (Proposed Works Offshore) and decommissioning of ABWP Phase I onshore infrastructure (Proposed Works Onshore).

1.1.1.2 This Marine Strategy Framework Directive (MSFD) Assessment aims to demonstrate that the Proposed Works are in line with the MSFD and Ireland's national Marine Strategy, through which the MSFD is implemented.

1.1.1.3 This MSFD Assessment draws on the outcomes of the Environmental Impact Assessment Report (EIAR) for the Proposed Works. As such, this MSFD Assessment is informed by the following EIAR chapters (and their accompanying appendices):

- **Volume 2, Chapter 1: Introduction**;
- **Volume 2, Chapter 3: Proposed Works Description**;
- **Volume 2, Chapter 4: Coastal Processes, Water and Sediment Quality**;
- **Volume 2, Chapter 5: Marine Biodiversity**; and
- **Volume 2, Chapter 6: Commercial Fisheries and Aquaculture**.

1.1.1.4 The specific objectives of this MSFD Assessment are to:

- Assess whether the Proposed Works are in accordance with the objectives of Ireland's national Marine Strategy, underpinned by the MSFD;
- Provide an assessment of the Proposed Works against the MSFD's 11 descriptors, including summarising and sign-posting to the relevant outcomes of the EIAR; and
- Determine whether the Proposed Works may undermine or otherwise influence Ireland's ability to attain or maintain Good Environmental Status (GES).

1.1.1.5 This MSFD Assessment has been prepared with the aim of supporting decision making by the consenting authority An Coimisiún Pleanála (ACP) in relation to the potential implications of the Proposed Works on Ireland's ability to achieve and maintain GES.

2 Legislative Context

2.1 Marine Strategy Framework Directive

2.1.1.1 Directive 2008/56/EC of the European Parliament and of the Council of 17 June 2008 (the Marine Strategy Framework Directive, MSFD) (as amended by Commission Directive (EU) 2017/845 of 17 May 2017) establishes a framework for community action in the field of marine environmental policy.

2.1.1.2 The MSFD provides a framework to achieve a clean, healthy, biologically diverse and sustainably used marine environment. Accordingly, the aims of the MSFD include but are not limited to the following:

- Protect and preserve the marine environment, including preventing deterioration and encouraging restoration;
- Enable sustainable use of marine-related resources and sustainable levels of activity;
- Reduce impacts on or risks to marine biodiversity, marine ecosystems, human health or legitimate uses of the sea;
- Apply an ecosystem-based approach to the management of human activities;
- Attain and/or maintain GES of marine waters; and
- Allow a coordinated and coherent approach to protection of the marine environment across European Union (EU) Member States.

2.1.1.3 The MSFD's objectives complement, and are complemented by, other EU legislation such as the European Union (EU) Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (the 'Habitats Directive'), the EU Directive 2009/147/EC on the conservation of wild birds (the 'Birds Directive') and the Council Directive 2000/60/EC establishing a framework for community action in the field of water policy (the 'Water Framework Directive' (WFD)). These Directives have been considered fully within the standalone **Appropriate Assessment (AA) Screening Report** and **Natura Impact Statement** prepared in support of the application of planning permission for the Proposed Works and in the EIAR **Volume 3, Appendix 4.5: WFD Assessment**, respectively.

2.1.1.4 The MSFD establishes a framework within which Member States must act. The MSFD applies to all marine waters, as defined in Article 3(1):

a) "waters, the seabed and subsoil on the seaward side of the baseline from which the extent of territorial waters is measured extending to the outmost reach of the area where a Member State has and/or exercises jurisdictional rights, in accordance with the Unclos [United Nations Convention on the Law of the Sea], with the exception of waters adjacent to the countries and territories mentioned in Annex II to the Treaty and the French Overseas Departments and Collectivities; and
b) coastal waters as defined by Directive 2000/60/EC [the WFD], their seabed and their subsoil, in so far as particular aspects of the environmental status of the marine environment are not already addressed through that Directive or other Community legislation"

2.1.1.5 The MSFD was transposed into Irish national legislation by the European Communities (Marine Strategy Framework) Regulations 2011 S.I. No. 249 of 2011 (as amended).

2.2 Good Environmental Status

2.2.1.1 GES is defined under Article 3(5) of the MSFD as "the environmental status of marine waters where these provide ecologically diverse and dynamic oceans and seas which are clean, healthy and productive within their intrinsic conditions, and the use of the marine environment is at a level that is sustainable, thus safeguarding the potential for uses and activities by current and future generations".

2.2.1.2 This definition has regard to the structure, function and processes of the constituent marine ecosystems and their associated physiographic, geographic, biological, geological and climatic factors and hydro-morphological, physical and chemical properties.

2.2.1.3 Annex I of the MSFD provides 11 qualitative descriptors for determining GES (D1 – D11), which refer to both the condition of the marine environment (state-based descriptors) and a variety of anthropogenic pressures (pressure-based descriptors):

1. "Biological diversity is maintained. The quality and occurrence of habitats and the distribution and abundance of species are in line with prevailing physiographic, geographic and climatic conditions.
2. Non-indigenous species introduced by human activities are at levels that do not adversely alter the ecosystems.
3. Populations of all commercially exploited fish and shellfish are within safe biological limits, exhibiting a population age and size distribution that is indicative of a healthy stock.
4. All elements of the marine food webs, to the extent that they are known, occur at normal abundance and diversity and levels capable of ensuring the long-term abundance of the species and the retention of their full reproductive capacity.
5. Human-induced eutrophication is minimised, especially adverse effects thereof, such as losses in biodiversity, ecosystem degradation, harmful algae blooms and oxygen deficiency in bottom waters.
6. Sea-floor integrity is at a level that ensures that the structure and functions of the ecosystems are safeguarded and benthic ecosystems, in particular, are not adversely affected.
7. Permanent alteration of hydrographical conditions does not adversely affect marine ecosystems.
8. Concentrations of contaminants are at levels not giving rise to pollution effects.
9. Contaminants in fish and other seafood for human consumption do not exceed levels established by Community legislation or other relevant standards.
10. Properties and quantities of marine litter do not cause harm to the coastal and marine environment.
11. Introduction of energy, including underwater noise, is at levels that do not adversely affect the marine environment."

2.3 Ireland's Marine Strategy

2.3.1.1 Under Article 5(1) of the MSFD, each EU Member State is required to prepare a marine strategy for its marine waters, including waters, seabed and subsoil. As such, the MSFD is implemented in Ireland through the national Marine Strategy. The Department of Housing, Local Government and Heritage (DHLGH) is responsible for developing Ireland's Marine Strategy.

2.3.1.2 As defined under Article 4(1) and 4(2)(a)(ii), Ireland's marine waters are located within the Celtic Seas marine subregion of the Northeast Atlantic Ocean marine region. Ireland's MSFD assessment area covers the marine waters between the inner limit of its WFD coastal waterbodies and the outer limit of its Exclusive Economic Zone (EEZ), in addition to the benthos of the rectangle beyond the EEZ limit in the southwest (see **Figure 1**).

2.3.1.3 Where applicable to specific descriptors for determining GES, further Marine Reporting Units (MRUs) are used, as described within Annex V to Part 1 of Ireland's Marine Strategy (DHLGH, 2024).

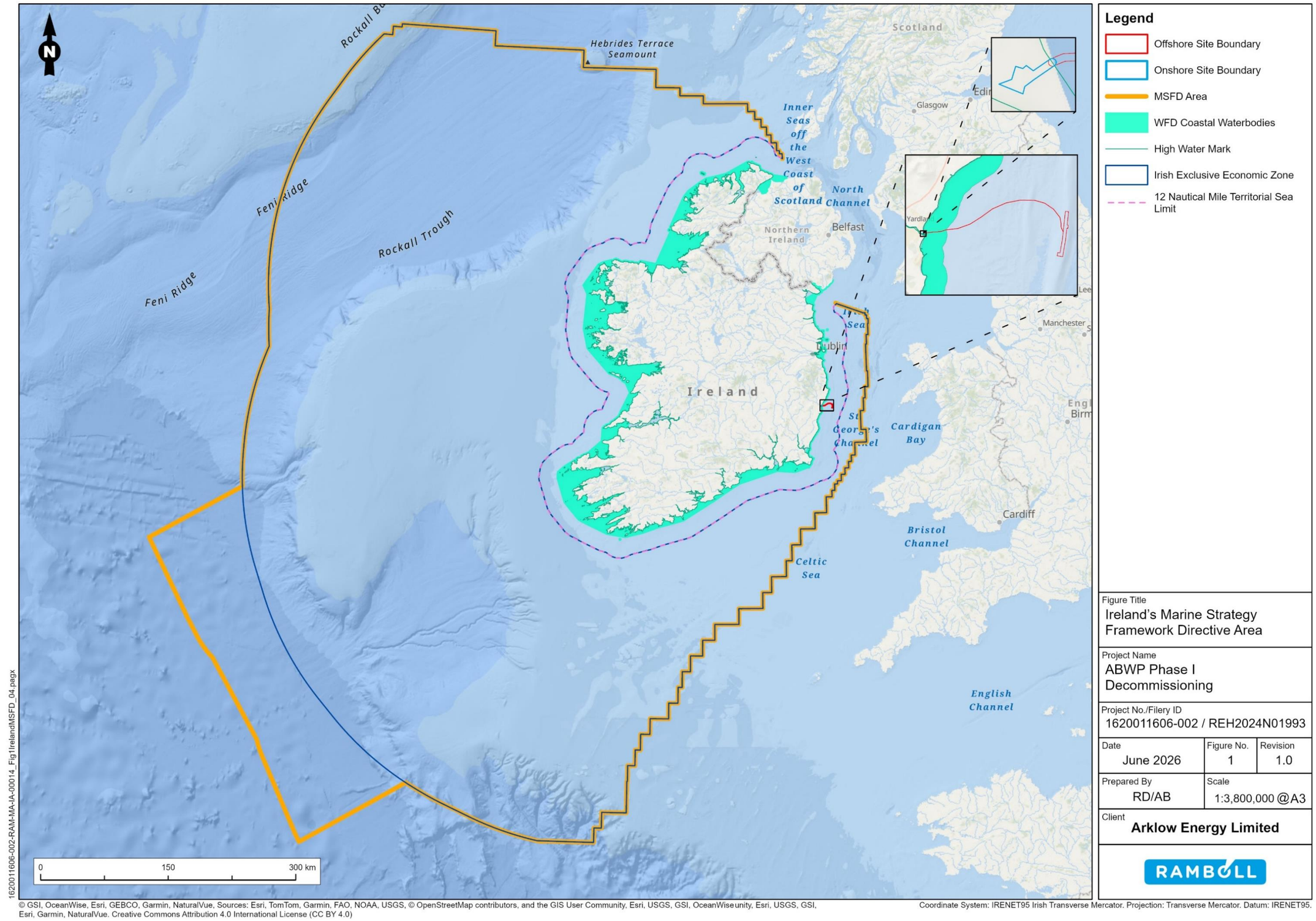


Figure 1: Ireland's Marine Strategy Framework Directive Area

2.3.1.4 In accordance with the MSFD, EU Member States preparing marine strategies must undertake the following:

- Assessment (Article 8): Undertake an initial assessment of the current environmental status of their marine waters, including analysis of features, characteristics, pressures, impacts and cost of degradation;
- Determination of GES (Article 9): Determine a set of characteristics for GES, on the basis of the 11 qualitative descriptors set out within the MSFD, to define the environmental quality to be achieved;
- Establishment of environmental targets (Article 10): Establish environmental targets and associated indicators to guide the achievement of GES;
- Monitoring programmes (Article 11): Establish and implement a monitoring programme for ongoing assessment and revision of targets; and
- Programmes of measures (Article 13): Identify and implement a programme of measures to attain or maintain GES.

2.3.1.5 The MSFD is implemented in six-year cycles, with Cycle 3 currently in progress in Ireland (2023-2028). Ireland's Marine Strategy consists of three parts, reported on separately every six years.

2.3.1.6 Ireland's Marine Strategy Part 1 (DHLGH, 2024), most recently updated in 2024 as part of MSFD Cycle 3, provides an assessment of the marine environmental status (Article 8), determination of GES (Article 9) and the establishment of environmental targets and indicators (Article 10).

2.3.1.7 Ireland's Marine Strategy Part 2 (most recently updated in 2021) (DHLGH, 2021), provides a review of monitoring programmes (Article 11), and Ireland's Marine Strategy Part 3 (DHLGH, 2022) (most recently updated in 2022), updated the programme of measures (Article 13).

3 Current Marine Strategy Framework Status in Ireland

3.1.1.1 Ireland's Marine Strategy Part 1 (2024) provides the most recent and comprehensive assessment of the status of Ireland's marine environment. This assessment integrates data from over 20 national monitoring programmes and 22 detailed scientific assessments, addressing all 11 MSFD descriptors.

3.1.1.2 At the time of the 2020 Marine Strategy Part 1 assessment under Cycle 2, Ireland had achieved or maintained GES for five of the 11 descriptors (D2 - non-indigenous species, D5 - eutrophication, D7 - hydrographical conditions, D8 - contaminants and D9 - contaminants in seafood), with partial achievement for several other descriptors due primarily to data limitations and the complexity of pressures acting on marine ecosystems. The 2024 Marine Strategy Part 1 assessment under Cycle 3 updated these findings, identifying areas of progress, persisting pressures and knowledge gaps that will inform future monitoring, assessment and management actions.

3.1.1.3 Ireland's Marine Strategy Part 1 (2024) report, published by DHLGH, summarises the current status of progress towards GES for each of the descriptors, as detailed in **Table 3.1**.

Table 3.1: Summary of Ireland's current GES status (DHLGH, 2024)

Descriptor	Feature	Current GES status
Descriptor 1: Biodiversity (Incidental bycatch criterion only)	Mammals	GES Unknown for seven of ten species GES Not Achieved for Harbour Porpoise/Common Dolphin GES Achieved for Grey Seal
	Birds	GES Unknown for seven of eight species GES Achieved for Roseate Tern
	Reptiles	GES Unknown
	Fish	GES Unknown for 57% of species/stocks GES Not Achieved for 21% of species/stocks GES Achieved for 23% of species/stocks
Descriptor 1: Biodiversity (All criteria)	Mammals	GES Unknown for seven of ten species GES Not Achieved for Harbour Porpoise/Common Dolphin GES Achieved for Grey Seal
	Birds	GES Achieved for seven of 14 species GES Not Achieved for six of 14 species GES Unknown for one species
	Reptiles	GES Unknown
	Fish	GES Unknown for 45.1% of species/stocks GES Not Achieved for 39.4% of species/stocks GES Achieved for 15.5% of species/stocks
Descriptor 2: Non-indigenous species	Newly introduced non-indigenous species	GES Achieved
Descriptor 3: Commercially exploited fish and shellfish	Stocks of commercially exploited fish and shellfish	GES Achieved for 29 of 174 stocks of commercially-exploited fish and shellfish GES Not Achieved for 46 of 174 stocks GES Unknown for 99 of 174 stocks
Descriptor 4: Food webs	Coastal Ecosystems	GES Unknown
	Shelf Ecosystems	GES Unknown
	Oceanic/Deep-Sea Ecosystems	GES Unknown

Descriptor	Feature	Current GES status
Descriptor 5: Eutrophication	Eutrophication	GES Achieved
Descriptor 6: Sea Floor Integrity	Benthic Broad Habitat Types and other habitat types	GES Achieved in 74% of Ireland's MSFD assessment area GES Unknown/Not Assessed in 15% of Ireland's MSFD assessment area GES Not Achieved in 11% of Ireland's MSFD assessment area The Proposed Works are located in the Celtic Sea North Inner MRU. 0.38% of the Celtic Sea North Inner MRU seafloor area is lost, and 41% is experiencing some degree of disturbance.
Descriptor 7: Hydrographical Conditions	Hydrographical Conditions in Coastal Areas	GES Achieved
	Hydrographical Conditions in Offshore Water	GES Achieved
Descriptor 8: Contaminants	Ubiquitous substances (uPBTs)	The Proposed Works are located in the Irish Sea MRU: GES Unknown, Achieved and Not Achieved depending on uPBT
	Non-Ubiquitous substances	The Proposed Works are located in the Irish Sea MRU: GES Achieved or Unknown depending on Non-Ubiquitous substance
	Contaminant Effect	GES Achieved
	Significant Acute Pollution Event	GES Achieved
Descriptor 9: Contaminants in Seafood	Contaminants in Seafood	GES Achieved
Descriptor 10: Marine Litter	Litter in the Marine Environment (Beach Litter)	GES Not Achieved
	Litter in the Marine Environment (Seafloor Litter)	GES Unknown
Descriptor 11: Underwater Noise	Continuous Noise	GES Achieved
	Impulsive Noise	GES Achieved

4 Approach to Assessment

4.1.1.1 There is currently no specific guidance or methodology for MSFD Assessments for projects in Ireland, the United Kingdom or other EU Member States. A qualitative approach has therefore been adopted when assessing the ability of the Proposed Works to undermine or otherwise influence Ireland's ability to attain or maintain GES.

4.1.1.2 The following assessment methodology has been adopted:

- Review the 11 descriptors and Ireland's GES determinations for each, including threshold values where these have been established (as set out within Ireland's Marine Strategy Part 1, 2024);
- Summarise the activities, impacts and effects of the Proposed Works relevant to each descriptor, including summarising any measures in place to minimise or mitigate potential environmental effects; and
- Conclude whether the Proposed Works are likely to influence Ireland's ability to attain or maintain GES for each descriptor.

4.1.1.3 The MSFD Assessment draws on the findings of the EIAR prepared for the Proposed Works. The technical chapters of the EIAR (**Volume 2, Chapters 4 – 8**) should be referred to for detailed assessment of the anticipated environmental effects of the Proposed Works.

4.1.1.4 **Section 5** of this report presents the assessment of the Proposed Works Offshore against the 11 descriptors and GES determinations. As set out in **Volume 3, Appendix 1.1: Scoping Presentation**, no in-stream works are required as part of the Proposed Works Onshore and therefore no impact pathway is expected between the Proposed Works Onshore and the marine environment. Accordingly, it is considered that there is no pathway by which the Proposed Works Onshore could compromise or otherwise influence Ireland's ability to attain or maintain GES in its marine waters. Therefore, the scope of the assessment undertaken within **Section 5** is limited to consideration of the Proposed Works Offshore.

4.1.1.5 **Section 6** concludes whether the Proposed Works are in alignment with Ireland's Marine Strategy.

5 Assessment of the Proposed Works Offshore

5.1.1.1 Discussion of the Proposed Works Offshore in relation to each of the MSFD descriptors is provided in **Table 5.1**. Where relevant, **Table 5.1** provides a summary of relevant information and refers to those chapters and appendices of the EIAR which contain further detail.

Table 5.1: MSFD descriptors and assessment of the Proposed Works Offshore

MSFD descriptor	Criteria and GES determination (DHLGH, 2024)	Assessment of the Proposed Works Offshore
1. Biodiversity	D1C1 Bycatch Ireland has achieved GES when the mortality rate per species from incidental bycatch is below levels which threaten the species, such that its long-term viability is ensured. Various thresholds exist, according to the species/species group. Where available, mortality rate threshold values agreed regionally under OSPAR apply, although for some species/species groups no thresholds have been agreed for bycatch at a regional or EU level. For fish, Ireland has achieved GES for a particular species or stock when: 1. Commercial fish: the fishing mortality rate of populations of fish species is at or below levels which can produce the maximum sustainable yield. 2. Species listed for protection under the EU Habitats Directive (i.e. four relevant species) are at a Favourable Conservation Status.	As set out in **Section 3**, the achievement of GES for Descriptor 1 (D1C1 Bycatch only) varies across species groups and species. The Proposed Works Offshore do not involve fishing nor the use of fishing equipment. Accordingly, no incidental capture of species could arise from the Proposed Works Offshore and they would not undermine the current GES status nor inhibit the achievement of targets for Descriptor 1, in relation to D1C1, in Ireland.
	D1C2 Abundance Ireland has achieved GES when the population abundance of the species is not adversely affected due to anthropogenic pressures, such that its long-term viability is ensured. Various thresholds exist, according to the species/species group, and generally relate to achievement of Favourable Conservation Status with respect to population abundance and threshold values agreed regionally under OSPAR, although for some species/species groups no thresholds have been agreed at a regional or EU level.	As set out in **Section 3**, the achievement of GES for Descriptor 1 varies across species groups and species. **Volume 2, Chapter 5: Marine Biodiversity** considers impacts that could arise on marine ecological receptors from the Proposed Works Offshore, including but not limited to impacts from temporary habitat loss/disturbance, changes in prey resources, disturbance/displacement, alteration of seabed habitat and injury/disturbance from underwater noise and vessel activity. The receptors of relevance are subtidal and intertidal habitats and species, fish and shellfish, marine mammals and marine ornithology. Embedded mitigation measures for the Proposed Works Offshore would reduce the potential for impacts on marine biodiversity. The following management plans and mitigation protocols will be in place prior to the commencement of the Proposed Works Offshore: • Detailed Offshore Decommissioning Environmental Management Plan (DEMP) (see outline version in **Volume 3, Appendix 3.4**); • Detailed Vessel Management Plan (VMP) (see outline version in **Volume 3, Appendix 3.5**); and • Detailed Offshore Waste Management Plan (see outline version in **Volume 3, Appendix 3.8**). These, together with additional mitigation through the implementation of specific measures that form part of the Marine Mammal Mitigation Protocol (MMMP) (**Volume 3, Appendix 5.3**), result in no significant effects predicted on marine ecological receptors as a result of the Proposed Works Offshore. This has been concluded on the basis of the
	D1C3 Population Demographic GES determination threshold not specified in Ireland's Marine Strategy Part 1 (2024) Annex I: Good Environmental Status (Article 9).	
	D1C4 Distribution Ireland has achieved GES when the species distributional range and, where relevant, pattern is in line with prevailing physiographic, geographic and climatic conditions. Various thresholds exist, according to the species/species group, and generally relate to achievement of Favourable Conservation Status with respect to distribution. For some	

MSFD descriptor	Criteria and GES determination (DHLGH, 2024)	Assessment of the Proposed Works Offshore
	species/species groups no thresholds have been agreed at a regional or EU level.	nature of the Proposed Works Offshore (removal of infrastructure), the localised scale of activities and the anticipated short-term duration and associated impacts (see **Volume 2, Chapter 5: Marine Biodiversity** for further detail). As such, with respect to marine biodiversity and the conservation status and long-term viability of species, the Proposed Works Offshore are not expected to lead to any attributable nor significant change in abundance, population demographic, distribution range/patterns, and habitat extent and condition. It is not considered likely that the Proposed Works Offshore would undermine the current GES status nor inhibit the achievement of targets for Descriptor 1 in Ireland.
	D1C5 Habitat Ireland has achieved GES when the habitat for the species has the necessary extent and condition to support the different stages in the life history of the species. Various thresholds exist, according to the species/species group, and generally relate to achievement of Favourable Conservation Status with respect to habitat. For some species/species groups no thresholds have been agreed at a regional or EU level.	
	D1C6 Pelagic habitat condition GES determination threshold not specified in Ireland's Marine Strategy Part 1 (2024) Annex I: Good Environmental Status (Article 9).	
2. Non-indigenous species	D2C1 Newly introduced Non-indigenous species Ireland has achieved GIS when the number of non-indigenous species which are newly introduced via human activity into the wild, per assessment period (six years), measured from the reference year as reported for the initial assessment under Article 8(1) of Directive 2008/56/EC, is minimised and where possible reduced to zero.	As set out in **Section 3**, GES has been achieved for Descriptor 2. **Volume 2, Chapter 5: Marine Biodiversity** concludes that no significant effects on benthic subtidal species and habitats would arise from increased risk of invasive and non-native species introduction/spread due to the use of vessels for the Proposed Works Offshore. Although decommissioning vessels are likely to be mobilised from a European port, the Proposed Works Offshore would be subject to a Detailed Offshore DEMP and Detailed VMP (see outline versions in **Volume 3, Appendices 3.4** and **3.5,** respectively), which include management measures and controls to prevent hull-fouling and transfer of non-indigenous species through ballast water, in line with standard industry practice and legal requirements, such as the Biofouling Guidelines (2011) and Ballast Water Management (BWM) Convention (2004). These measures will reduce the risk of new introduction of non-indigenous species into the marine environment from the Proposed Works Offshore. As such, it is not considered likely that the Proposed Works Offshore would undermine the current GES status nor inhibit the achievement of targets for Descriptor 2 in Ireland.
3. Population of commercial fish/shellfish	D3C1 Commercially exploited fish: death Ireland has achieved GES when the fishing mortality rate of populations of commercially exploited species of fish and shellfish is at or below levels which can produce the maximum sustainable yield.	As set out in **Section 3**, the achievement of GES for Descriptor 3 varies across the commercially-exploited fish and shellfish stocks considered. The Proposed Works Offshore do not involve fishing. However, the potential for impacts on fish and shellfish, and commercial fisheries and aquaculture, have been considered in the EIAR. The Proposed Works Offshore are not expected to significantly influence the age, size, spawning stock biomass or mortality rate of commercially exploited species, and as such would not influence in any attributable way the viability or sustainable use of commercially exploited fish stocks. Loss or restricted access to fishing grounds and interference with fishing activity, accidental spill prevention and control, and navigational safety risks will be managed
	D3C2 Commercially exploited fish: spawning stock biomass Ireland has achieved GES when the Spawning Stock Biomass of populations of commercially exploited species are above biomass levels capable of producing maximum sustainable yield.	

MSFD descriptor	Criteria and GES determination (DHLGH, 2024)	Assessment of the Proposed Works Offshore
	D3C3 Commercially exploited fish: distribution of age/size GES determination threshold not specified in Ireland's Marine Strategy Part 1 (2024) Annex I: Good Environmental Status (Article 9).	through several mitigation measures such as adherence to a Detailed VMP (see outline version in **Volume 3, Appendix 3.5**), a Detailed Offshore DEMP (see outline version in **Volume 3, Appendix 3.4**), and the Fisheries Management and Mitigation Strategy (FMMS, **Volume 3, Appendix 3.6**). The FMMS sets out specific procedures relating to mitigation of effects on commercial fisheries including standard industry practice, legal requirements and liaison measures with the sector to facilitate co-existence between the Proposed Works Offshore and commercial fisheries. This includes additional mitigation to avoid significant adverse effects associated with the temporary loss of access to fishing grounds for the potting fleet along the offshore export cable route. **Volume 2, Chapter 5: Marine Biodiversity** concludes that no significant effects on fish and shellfish would arise from the Proposed Works Offshore, given the limited scale, extent and duration of impacts considered, such as temporary habitat loss/disturbance, increased suspended sediment concentration (SSC) and deposition, disturbance/remobilisation of sediment bound contaminants and injury/disturbance from underwater noise. **Volume 2, Chapter 6: Commercial Fisheries and Aquaculture** considers impacts to populations of commercial fish/shellfish and commercial fishing activity. While potential biological effects on commercially important fish and shellfish may arise, **Volume 2, Chapter 5: Marine Biodiversity** concludes that these effects are not significant. **Volume 2, Chapter 6: Commercial Fisheries and Aquaculture** identifies that, with the implementation of embedded and additional mitigation, no significant adverse effects on fisheries resulting from loss or restricted access to fishing grounds, displacement of fishing activity, interference with fishing activity or increased fishing gear snagging risk. Overall, it is not considered likely that the Proposed Works Offshore would undermine the current GES status nor inhibit the achievement of targets for Descriptor 3 in Ireland.
4. Marine food webs	D4C1 Trophic guild species diversity Ireland has achieved GES when the diversity (species composition and their relative abundance) of at least three trophic guilds per assessed ecosystem is not adversely affected due to anthropogenic pressures. Currently no thresholds have been agreed at a regional or EU level that can be used at a national level.	As set out in Section 3, GES is unknown for Descriptor 4. **Volume 2, Chapter 5: Marine Biodiversity** considers impacts that could arise on marine ecological receptors from the Proposed Works Offshore, including but not limited to impacts from temporary habitat loss/disturbance, changes in prey resources, disturbance/displacement, alteration of seabed habitat and injury/disturbance from underwater noise and vessel activity. The receptors of relevance are subtidal and intertidal habitats and species, fish and shellfish, marine mammals and marine ornithology. Embedded mitigation measures for the Proposed Works Offshore including the implementation of a Detailed Offshore DEMP, Detailed VMP and Detailed Offshore WMP (**Volume 3, Appendices 3.4, 3.5 and 3.8**), together with the implementation of additional mitigation in the form of a MMMP (**Volume 3, Appendix 5.3**) would reduce the potential for significant impacts. No significant effects are predicted on marine ecological receptors as a result of the Proposed Works Offshore. This has been concluded on the basis of the nature of the Proposed Works Offshore (removal of infrastructure), the localised scale of activities and the anticipated short-term duration of the Proposed Works Offshore and associated impacts (see **Volume 2, Chapter 5: Marine Biodiversity** for further detail).
	D4C2 Abundance across trophic guilds Ireland has achieved GES when the balance of total abundance between at least three trophic guilds per assessed ecosystem is not adversely affected due to anthropogenic pressures. Currently no thresholds have been agreed at a regional or EU level that can be used at a national level.	
	D4C3 Trophic guild size distribution	

MSFD descriptor	Criteria and GES determination (DHLGH, 2024)	Assessment of the Proposed Works Offshore
	GES determination threshold not specified in Ireland's Marine Strategy Part 1 (2024) Annex I: Good Environmental Status (Article 9).	As such, the Proposed Works Offshore are not expected to contribute any attributable nor significant change to marine food webs, with respect to trophic guild species diversity, abundance, distribution or productivity. It is not considered likely that the Proposed Works Offshore would undermine the current GES status nor inhibit the achievement of targets for Descriptor 4 in Ireland.
	D4C4 Trophic guild productivity GES determination threshold not specified in Ireland's Marine Strategy Part 1 (2024) Annex I: Good Environmental Status (Article 9).	
5. Eutrophication	D5C1 Nutrient concentrations Ireland has achieved GES when nutrient concentrations are not at levels that indicate adverse eutrophication effects. GES is achieved in coastal waters when nutrient levels do not exceed the environmental quality standards set nationally in accordance with Directive 2000/60/EC (the WFD) (S.I. 272 of 2009 as amended). GES is achieved beyond coastal waters when nutrient levels are less than the threshold values set through the Common Procedure for the Identification of the Eutrophication Status of the OSPAR Maritime Area (OSPAR Agreement 2022-07)	As set out in **Section 3**, GES has been achieved for Descriptor 5. The Proposed Works are not expected to give rise to any adverse eutrophication effects as no significant change in nutrients (nitrogen and phosphorus), chlorophyll or dissolved oxygen concentrations is predicted as a result of the Proposed Works. For example, no new diffuse or point sources of pollution (e.g. outfall or surface water run-off) are to be introduced and any sediment disturbed during the Proposed Works would not release significant concentrations of nutrients or organic matter. As demonstrated by the numerical modelling in **Volume 3, Appendix 4.2: Coastal Processes Modelling** and described within **Volume 2, Chapter 4: Coastal Processes, Water and Sediment Quality** and **Volume 2, Chapter 5: Marine Biodiversity**, increased SSC (due to dredging, if required, and grapnel runs) and associated deposition will not give rise to significant effects on water quality or benthic habitats (e.g. smothering). As no significant nutrient enrichment, changes to water clarity, or smothering of benthic habitats are expected as a result of the Proposed Works, no eutrophication effects are predicted. Therefore, it is not considered likely that the Proposed Works would undermine the current GES status nor inhibit the achievement of targets for Descriptor 5 in Ireland.
	D5C2 Chlorophyll-a concentration Ireland has achieved GES when chlorophyll concentrations are not at levels that indicate adverse effects of nutrient enrichment. GES is achieved in coastal waters when chlorophyll concentrations do not exceed the environmental quality standards set nationally in accordance with Directive 2000/60/EC (the WFD) (S.I. 272 of 2009 as amended). GES is achieved beyond coastal waters when chlorophyll concentrations are less than the threshold values set through the Common Procedure for the Identification of the Eutrophication Status of the OSPAR Maritime Area (OSPAR Agreement 2022-07).	
	D5C5 Dissolved oxygen concentration Ireland has achieved GES when the concentration of dissolved oxygen due to nutrient enrichment, does not reach concentrations that indicate adverse effects on benthic habitats (including on associated biota and mobile species) or other eutrophication effects. GES is achieved when dissolved oxygen concentrations in coastal waters are between the environmental quality standards set nationally in accordance with Directive 2000/60/EC (the WFD) (S.I. 272 of 2009 as amended). GES is achieved beyond coastal waters, when dissolved oxygen concentrations are above the threshold values set through the Common Procedure for	

MSFD descriptor	Criteria and GES determination (DHLGH, 2024)	Assessment of the Proposed Works Offshore
	the Identification of the Eutrophication Status of the OSPAR Maritime Area (OSPAR Agreement 2022-07).	
6. Sea floor integrity	D6C1 Physical loss of the seabed GES determination threshold not specified in Ireland's Marine Strategy Part 1 (2024) Annex I: Good Environmental Status (Article 9).	As set out in **Section 3**, GES for sea floor integrity has been achieved in 74% of Ireland's MSFD assessment area, however 15% remains either not assessed or unknown, while 11% is not in good status. This descriptor particularly considers loss due to sealing of the seafloor and disturbance due to anthropogenic activities (DHLGH, 2024). In terms of interactions with the seabed, the Proposed Works Offshore will involve the removal of infrastructure and use of vessels interacting with the seabed (e.g. jack-up barge (JUB) spud legs) which would give rise to seabed disturbance, particularly if localised dredging and subsequent disposal in the close vicinity is required to facilitate vessel access. However, as the Proposed Works Offshore involve the decommissioning and removal of infrastructure, with no proposed installation of new infrastructure, no permanent physical loss or sealing of seabed will occur. The Proposed Works Offshore would return the seabed to predominantly sandy sediment. Under the Maximum Design Scenario, dredging (if required) is expected to occur in the Sub Lease Area over a total area of approximately 0.287 km^2 (21.3% of the Sub Lease Area). The removal of exposed hard infrastructure from the seabed (with exception of any scour protection sandbags that may become exposed) is expected to result in temporary habitat disturbance over a total area of 0.07 km^2. The scale of the Proposed Works Offshore is therefore small in comparison to the total Celtic Sea North Inner MRU area (of which 0.38% (261.50 km^2) is already lost and 41% (28,000 km^2) is disturbed). **Volume 2, Chapter 4: Coastal Processes, Water and Sediment Quality** considers the potential for impacts to the Arklow Bank morphology and coastline due to changes in seabed morphology (resulting from seafloor disturbance and removal of infrastructure) and considers the development of scour around any potential residual monopile (MP) exposure post-decommissioning. No significant adverse effects are predicted and the Proposed Works Offshore are generally expected to have minor effects on coastal processes, with embedded mitigation in place to minimise effects on seabed morphology and seafloor integrity: dredged material is proposed to be disposed within the Sub Lease Area, updrift from the dredge location, so that the materials stay within the sedimentary system, and MPs will be cut below the seabed to very low and rare seabed level values to minimise post-decommissioning MP exposure risks. **Volume 2, Chapter 5: Marine Biodiversity** considers the potential for effects on benthic subtidal and benthic intertidal habitats and species due to temporary habitat loss/disturbance and alteration of seabed habitat from changes in physical processes. No significant adverse effects are predicted. Habitat disturbance is expected to occur over a limited spatial extent and temporal duration and any changes in water flow or sediment are expected to be minor and localised. The predominantly sandy, highly mobile sediment habitats affected by the Proposed Works Offshore are anticipated to have a high rate of recovery, as natural hydrodynamic and sediment transport processes would allow the rapid backfill of disturbed habitat by sediment. Overall, the Proposed Works Offshore would not lead to any permanent physical loss of seabed (as no new infrastructure is to be installed) and therefore would not contribute to D6C1 or to the 2% threshold mentioned in D6C4 and D6C5. Rather, the removal of
	D6C2 Physical disturbance to the seabed GES determination threshold not specified in Ireland's Marine Strategy Part 1 (2024) Annex I: Good Environmental Status (Article 9).	
	D6C3 Adverse effects from physical disturbance Ireland has achieved GES when the extent of habitat disturbance due to anthropogenic pressures is less than 25% of the spatial extent of each Benthic Broad Habitat Type.	
	D6C4 Benthic habitat extent Ireland has achieved GES when the amount of (seabed) loss from anthropogenic pressures does not exceed 2% of each Benthic Broad Habitat Type. The 2% threshold was agreed through the MSFD Common Implementation Strategy process in 2023.	
	D6C5 Benthic habitat condition Ireland has achieved GES when the extent of adverse effects in any particular Benthic Broad Habitat Type is less than 25% of the habitat extent, of which no more than 2% is habitat loss. The quality indicator for adverse effects is not yet agreed upon at Union Level so the Habitats Directive and the Water Framework Directive state-based assessments, and the pressure indicators (BH3) developed through OSPAR for benthic habitats, are used.	

MSFD descriptor	Criteria and GES determination (DHLGH, 2024)	Assessment of the Proposed Works Offshore
		infrastructure would return the seabed to sediment. In relation to seabed disturbance (D6C2) and the 25% thresholds mentioned in D6C3 and D6C5, the Proposed Works Offshore are not expected to contribute in any long-term way to the D6C2, D6C3 and D6C5 thresholds, due to the nature of the disturbance (infrastructure removal, interaction of spud legs with the seabed, and relatively localised dredging, if required) and given that high rates of recovery in the context of the dynamic sediment regime would lead to short-term effects only. The scale and duration of the impact means no significant adverse effects from physical disturbance or contribution to the 25% threshold is expected. Accordingly, the Proposed Works Offshore are not expected to lead to any significant change in the biotic or abiotic structure, condition or function of the benthic habitat. Any effects would be highly localised in the context of both the Celtic Seas North Inner MRU and Ireland's overall MSFD assessment area. It is therefore not considered likely that the Proposed Works Offshore would undermine the current GES status nor inhibit the achievement of targets for Descriptor 6 in Ireland.
7. Alteration of hydrographical conditions	D7C1 Permanent alteration of hydrographical conditions In Ireland, GES is achieved when human activities do not result in significant alterations to the waterbody in terms of the spatial extent and distribution of hydrographical conditions (e.g. changes in wave action, currents, salinity, temperature) so that the structure and function of ecosystems are safeguarded. For coastal waters this significant alteration is determined through a Hydromorphological Quality Index developed under Directive 2000/60/EC (the WFD). Good environmental status is achieved when 75% of the area of an MRU achieves a Hydromorphological Quality Index score of 0.75 or higher. D7C2 Adverse effects from permanent alteration of hydrographical conditions For offshore areas GES is achieved when the spatial extent of each benthic habitat type adversely affected (physical and hydrographical characteristics and associated biological communities) due to permanent alteration of hydrographical conditions is not significant. Alterations to hydrographical conditions will be considered if a significant physical disturbance or loss is determined as defined in criterion D6C3 and D6C4 respectively.	As set out in **Section 3**, GES has been achieved for Descriptor 7. In terms of activities that could influence hydrographical conditions, the Proposed Works Offshore will involve the cut and removal of the WTG and met mast MP foundations, the removal of inter-array cables and offshore export cable, removal of visible / accessible scour protection sandbags and potential localised dredging and disposal to allow vessel access. These activities could give rise to localised and minor changes in morphological conditions and physical processes (e.g. sediment and hydrodynamic regime), in offshore waters (the wider MSFD assessment area) and coastal waters (the Southwestern Irish Sea – Brittas Bay, the WFD coastal waterbody through which the offshore export cable runs, see **Volume 3, Appendix 4.5: WFD Assessment**). As described in **Volume 2, Chapter 4: Coastal Processes, Water and Sediment Quality**, no significant adverse effects are predicted in relation to changes in physical processes and seabed morphology, as evidenced by numerical modelling presented in **Volume 3, Appendix 4.2: Coastal Processes Modelling**. No significant alterations to hydrographical conditions are predicted; the removal of the MPs is not anticipated to lead to any measurable far-field impacts on wave climate, currents, or large-scale morphology of Arklow Bank, and the removal of cables will lead to localised seabed disturbance only. With regard to increased SSC, modelling presented in **Volume 3, Appendix 4.2: Coastal Processes Modelling** indicates that in the case of the worst-case/most widespread sediment plume (sediment mobilised during access channel backhoe dredging), small amounts of fines such as clay and silt would disperse over 7 km and resettle to background SSC levels within 42 days. Coarse materials are likely to be deposited immediately adjacent to the area of disturbance, with less coarse sand travelling a maximum distance of 0.048 km and depositing within approximately 23.81 seconds and fine-grained sediment such as mud expected to disperse over a distance of 2 km during approximately 16 minutes. As such, no significant adverse effects are predicted in relation to increased SSC and deposition. Similarly, no significant adverse effects due to scour development around potential residual MP exposure post-decommissioning are predicted (see **Volume 2, Chapter 4: Coastal Processes, Water and Sediment Quality and Volume 3, Appendix 4.3: Scour Assessment** for detail).

MSFD descriptor	Criteria and GES determination (DHLGH, 2024)	Assessment of the Proposed Works Offshore
		The Proposed Works Offshore are generally expected to have minor effects on coastal processes, with embedded mitigation in place to minimise effects on seabed morphology and seafloor integrity: dredged material is proposed to be disposed within the Sub Lease Area, updrift from the dredge location, so that the materials stay within the sedimentary system, and MPs will be cut below the seabed to very low and rare seabed level value to minimise post-decommissioning MP exposure risks. The Proposed Works Offshore would return the seabed to predominantly mobile soft sediment. The existing wave conditions and sediment regime, with sandbank morphodynamics largely driven by tidal currents, are expected to persist post-decommissioning. Impacts on salinity or temperature are not anticipated. In relation to D7C2 (offshore areas) specifically, the achievement of GES is closely linked to Descriptor 6 (sea-floor integrity). As no significant physical disturbance or permanent loss is predicted as a result of the Proposed Works Offshore (see Descriptor 6 above), no significant alteration to hydrographical conditions or consequent significant effect on benthic habitats are predicted (see **Volume 2, Chapter 5: Marine Biodiversity** for further detail). Overall, the Proposed Works Offshore are not expected to lead to any significant change in the extent and distribution of hydrographical conditions, such as wave action, currents, salinity and temperature. Any changes to seabed morphology and physical processes are expected to be localised and not expected to adversely affect ecosystem structure or function. It is therefore not considered likely that the Proposed Works Offshore would undermine the current GES status nor inhibit the achievement of targets for Descriptor 7 in Ireland.
8. Concentration of contaminants	D8C1 Contaminant in environment (non-uPBT substances) Ireland has achieved GES within coastal and territorial waters when the concentrations of contaminants do not exceed thresholds in accordance with Directive 2000/60/EC (the WFD) (SI 272 of 2009 as amended) and do not exceed OSPAR Environmental Assessment Criteria for the OSPAR Coordinated Environmental Monitoring Programme and concentrations are not increasing significantly.	As set out in **Section 3**, the achievement of GES for Descriptor 8 varies across contaminants. GES has been achieved or is unknown for Descriptor 8 in relation to uPBT and non-uPBT substances in the Irish Sea MRU, with the exception of mercury for which GES is not achieved. GES has been achieved in relation to contaminant effects. It is not anticipated that the Proposed Works Offshore would lead to any significant release of such contaminants into the marine environment. While vessels release trace levels of contaminants due to fuel combustion, given the anticipated number of vessel trips and duration of Proposed Works Offshore, these would not lead to a detectable level of change. As set out within **Volume 2, Chapter 4: Coastal Processes, Water and Sediment Quality** and **Volume 3, Appendix 4.4: Sediment Sampling Results**, low levels of contamination were recorded in sediment samples obtained within and in the vicinity of the Offshore Site Boundary. Given the baseline sediment quality and the scale of the Proposed Works Offshore, both **Volume 2, Chapter 4: Coastal Processes, Water and Sediment Quality** and **Volume 2, Chapter 5: Marine Biodiversity** conclude that no significant adverse effects would arise on receptors such as water quality and fish and shellfish due to potential disturbance/mobilisation of sediment-bound contamination, assuming a Maximum Design Scenario where localised dredging is required. Particle size analysis of samples obtained at Arklow Bank recorded very low amounts of fine sediment (less than 63 µm), with a percentage range of 0% to 4.75% recorded. Similarly, sediment samples taken in proximity to the offshore export cable
	D8C1 Contaminant in environment (uPBT substances) Ireland has achieved GES within coastal and territorial waters when the concentrations of contaminants do not exceed thresholds in accordance with Directive 2000/60/EC (the WFD) (SI 272 of 2009 as amended) and do not exceed OSPAR Environmental Assessment Criteria for the OSPAR Coordinated Environmental Monitoring Programme and concentrations are not increasing significantly.	
	D8C2 Adverse effects of contaminants Ireland has achieved GES when the health of species are not adversely affected due to contaminants. GES is achieved when biological and ecological effects are below	

MSFD descriptor	Criteria and GES determination (DHLGH, 2024)	Assessment of the Proposed Works Offshore
	the criteria as agreed under OSPAR Environmental Assessment Criteria. At present, this is limited to the evaluation of reproductive impairment in marine gastropods associated with tributyltin.	corridor recorded predominantly sand with approximately 9% fine sediment. Finer particle sizes, such as clays and muds, can act as adsorption surfaces for contaminants that may be released into the water column, while sediments consisting of coarser sand and gravel carry a much lower contamination risk (see **Volume 2, Chapter 4: Coastal Processes, Water and Sediment Quality** for detail). Given the baseline sediment chemical quality and particle size composition, and the modelling presented in **Volume 3, Appendix 4.2: Coastal Processes Modelling Report** and described above (see Descriptor 7), the disturbance of any sediment-bound contaminant is expected to be limited and will be rapidly diluted and dispersed with no adverse significant effects predicted. The Proposed Works Offshore are overall not predicted to lead to any significant increase in contaminants in the water environment, marine sediment or in biota. Therefore, it is not considered likely that the Proposed Works Offshore would undermine the current GES status nor inhibit the achievement of targets for Descriptor 8 in Ireland.
	D8C3 Significant acute pollution events Ireland has achieved GES within its maritime area when the spatial extent and duration of significant acute pollution events are minimised. There is currently no agreed definition of "significant acute pollution events" or relevant agreed threshold levels at an EU level, therefore GES cannot be evaluated.	As set out in **Section 3**, for Descriptor 8, GES has been achieved in relation to significant acute pollution events. It is not anticipated that the Proposed Works would result in any significant acute pollution event. With regards to the Proposed Works Offshore, the Detailed Offshore DEMP and Detailed VMP (see outline versions in **Volume 3, Appendices 3.4** and **3.5,** respectively) will set out the standard industry practice and legal requirements for accidental spill prevention and controls and define best-practice vessel management measures in relation to accidental spillage risks. Vessels will comply with requirements under the International Convention on the Prevention of Pollution from Ships (MARPOL Convention) and the Oil Pollution Preparedness, Response and Co-Operation Convention (OPRC). The Offshore DEMP will also include a Marine Pollution Contingency Plan (MPCP), to be prepared by the Principal Decommissioning Contractor. With such management measures, procedures and controls in place for accidental spills, it is considered that the likelihood of an event and magnitude of any potential impacts are minimised. Overall, it is not anticipated that the Proposed Works will result in any significant acute pollution event. Therefore, it is not considered likely that the Proposed Works would undermine the current GES status nor inhibit the achievement of targets for Descriptor 8 in Ireland.
9. Contaminants in fish/seafood for human consumption	D9C1 Contaminants in Seafood Ireland has achieved GES when the level of contaminants in edible tissues of seafood caught or harvested in the wild (excluding fin-fish from mariculture) does not exceed maximum limits listed in EU Regulation 2023/915.	As set out in **Section 3**, GES has been achieved in Ireland for Descriptor 9. Contaminants of particular concern in relation to seafood include pesticides, polychlorinated biphenyls and dioxins, flame retardants and also heavy metals and hydrocarbons (DHLGH, 2024). As described in relation to Descriptor 8 above, and assessed within **Volume 2, Chapter 4: Coastal Processes, Water and Sediment Quality** and **Volume 2, Chapter 5: Marine Biodiversity**, the Proposed Works Offshore are not expected to give rise to any significant adverse effects relating to contaminant mobilisation, given the baseline sediment quality with low contaminant concentrations. As such, it is not considered that the Proposed Works Offshore could lead to any attributable or measurable change to the level of contaminants measured in edible tissues of seafood caught or harvested.

MSFD descriptor	Criteria and GES determination (DHLGH, 2024)	Assessment of the Proposed Works Offshore
		Overall, it is not considered likely that the Proposed Works Offshore would undermine the current GES status nor inhibit the achievement of targets for Descriptor 9 in Ireland.
10. Marine litter	D10C1 Litter (excluding micro-litter) Ireland has achieved GES when the amount of litter on the coastline is below the threshold value of 20 items per 100 m. There are currently no agreed thresholds values for seafloor Litter at an EU or Regional level.	As set out in **Section 3**, for Descriptor 10, GES has not been achieved in relation to beach litter and GES is unknown in relation to seafloor litter. The Proposed Works Offshore would involve the decommissioning, dismantling and removal of infrastructure elements and equipment, including the WTG components and offshore export and inter-array cables (see **Volume 2, Chapter 3: Proposed Works Description**). Scour protection sandbags have historically been placed around the MPs, although these are likely to have since degraded, moved or been buried. Where residual scour protection sandbags are identified during pre- or post- decommissioning surveys, these will be recovered and material re-released (see **Volume 2, Chapter 3: Proposed Works Description**). While no threshold values have been set for seafloor litter, the recovery of any sandbags (if present in the Sub Lease Area) is considered to be beneficial. The Proposed Works Onshore and Proposed Works Offshore would be subject to a Detailed Onshore WMP and Detailed Offshore WMP respectively (see outline versions in **Volume 3, Appendices 3.3** and **3.8**), which include waste management and treatment measures in line with relevant policies, legislation and standards, including following the waste hierarchy. The Detailed Onshore and Offshore WMPs will also assign roles and responsibilities with regard to waste. Authorised waste collectors and appropriate licensed waste facilities would be selected for further processing and disposal. Furthermore, the Detailed Onshore DEMP and Detailed Offshore DEMP (see outline versions in **Volume 3, Appendices 3.1 and 3.4**) will provide a framework for environmental management, including appropriate site housekeeping and requirement for training and toolbox talks for all site personnel on environmental issues, such as waste/litter. Overall, it is not anticipated that the Proposed Works will discharge litter into the marine environment either on the coast or seabed, accordingly the Proposed Works are not expected to influence or increase litter quantity, composition and distribution. Rather, the Proposed Works Offshore consist of the decommissioning and removal of infrastructure (including residual scour protection sandbags, where identified) from the marine environment and as such are considered to support the achievement of GES in relation to Descriptor 10. It is not considered likely that the Proposed Works would undermine the current GES status nor inhibit the achievement of targets for Descriptor 10 in Ireland.

MSFD descriptor	Criteria and GES determination (DHLGH, 2024)	Assessment of the Proposed Works Offshore
11. Underwater noise	D11C1 Anthropogenic impulsive sound Ireland has achieved GES when the spatial distribution, temporal extent, and levels of anthropogenic impulsive sound sources do not exceed levels that adversely affect populations of marine animals. GES is achieved when the spatial distribution levels of anthropogenic impulsive sound sources do not exceed the average 20% area annual threshold and 10% area average daily thresholds.	As set out in **Section 3**, GES has been achieved in Ireland for Descriptor 11 in relation to impulsive noise. An assessment of the potential for significant effects on marine mammals and fish and shellfish in relation to injury and/or disturbance from underwater noise has been undertaken and is presented within **Volume 2, Chapter 5: Marine Biodiversity**. The assessment is underpinned by underwater sound modelling specific to the Proposed Works Offshore, presented in **Volume 3, Appendix 5.3: Underwater Sound Modelling.** The assessment has considered the following impulsive sound sources associated with pre-decommissioning geophysical surveys: sub-bottom profiler (SBP) chirps and Ultra-Short-Baseline (USBL) activities. The following non-impulsive sound sources have been considered: support vessels, dredging, dynamic positioning (DP), jet lancing, underwater mechanical cutting, vibratory extraction tool, and vessel noise from the use of JUB. Pre-decommissioning surveys are anticipated to last 10 days, while the subsequent decommissioning works (including vessel transit and removal works) are expected to last seven months. The potential impact range for both impulsive and non-impulsive sources is restricted to within 10 m of the source, for all fish hearing groups and for both stationary and mobile fish, and only a very a small degree of disturbance is predicted. For auditory injury and Temporary Threshold Shift (TTS) effects, potential impact ranges are localised for all marine mammal functional hearing groups, with the greatest potential impact distance being 1,000 m for TTS effects on Low Frequency (LF) hearing cetaceans due to operation of the vibratory extraction tool. Behavioural disturbance impact ranges for all marine mammal hearing groups were greatest for the vibratory extraction tool, with impacts predicted up to 45,500 m from the sound source, although there is considerable degree of uncertainty and variability in the onset of disturbance (see **Volume 2, Chapter 5: Marine Biodiversity** for detail). A MMMP (**Volume 3, Appendix 5.3**) will be implemented for the Proposed Works Offshore, informed by established guidance to manage the risk to marine mammals from man-made sound sources in Irish waters (Irish National Parks and Wildlife Service, 2014) and JNCC draft guidelines for minimising risks of injury to marine mammals from geophysical surveys (JNCC, 2025). The MMMP sets out roles and responsibilities, reporting requirements and control and mitigation measures, in relation to minimising the potentially injurious or disturbing effects of underwater sound on marine mammals. Overall, **Volume 2, Chapter 5: Marine Biodiversity** concludes that minor adverse (non-significant) residual effects would occur in relation to injury and/or disturbance from underwater noise. In accordance with this, it is not considered that the Proposed Works Offshore would significantly contribute to the 20% area annual and 10% area average daily thresholds in relation to GES. This is concluded on the basis of the temporary and transitory nature of activities and the limited spatial distribution of impact (as demonstrated by the underwater noise modelling, see **Volume 3, Appendix 5.2: Underwater Sound Modelling**). Therefore it is not considered likely that the Proposed Works Offshore would undermine the current GES status nor inhibit the achievement of targets for Descriptor 11 in Ireland.
	D11C2 Anthropogenic continuous low-frequency sound Ireland has achieved GES when the spatial distribution, temporal extent and levels of anthropogenic continuous low-frequency sound do not exceed levels that adversely affect populations of marine animals. GES is achieved when the levels of anthropogenic continuous sound sources do not exceed 20% area annually.	

6 Conclusions

6.1.1.1 Drawing on the outcomes of the EIAR for the Proposed Works, this MSFD assessment demonstrates that the Proposed Works would not inhibit GES or contribute to an exceedance of MSFD thresholds (where these have been established) in any significant or attributable way. No impact pathway is expected between the Proposed Works Onshore and the marine environment, and, as assessed in **Section 5**, due to the nature, scale and duration of the Proposed Works Offshore, it is considered highly unlikely that the Proposed Works Offshore could compromise or otherwise influence Ireland's ability to attain or maintain GES for each of the 11 MSFD descriptors. Overall, the Proposed Works are considered to be in accordance with Ireland's national Marine Strategy, underpinned by the MSFD, and its objectives.

7 References

Department of Climate, Energy and Environment, 2025. The Marine Strategy Framework Directive (MSFD). Available at: https://www.gov.ie (Accessed: April 2026)

Department of Climate, Energy and Environment, 2025. Ireland's Marine Strategy Framework Directive Marine Strategy Part 1: Assessment (Article 8), Determination of Good Environmental Status (Article 9) and Environmental Targets (Article 10). Available at: https://www.gov.ie (Accessed: April 2026)

Department of Housing, Local Government and Heritage, 2024. Ireland's Marine Strategy Part 1, Article 8, 9 and 10 report. Available at: https://assets.gov.ie (Accessed: April 2026)

Department of Housing, Local Government and Heritage, 2021. Article 17 Update to Ireland's Marine Strategy Part 2: Monitoring Programme (Article 11). Available at: https://assets.gov.ie (Accessed: April 2026)

Department of Housing, Local Government and Heritage, 2022. Article 17 Update to Ireland's Marine Strategy Part 3: Programme of Measures (Article 13). Available at: https://assets.gov.ie (Accessed: April 2026)

European Commission, online. Marine environment. EU policies to protect Europe's oceans, seas and coasts. Available at: https://environment.ec.europa.eu (Accessed: April 2026)

European Union (EU), 2017. Directive 2008/56/EC of the European Parliament and of the Council of 17 June 2008 establishing a framework for community action in the field of marine environmental policy (Marine Strategy Framework Directive). Available at: https://eur-lex.europa.eu (Accessed: April 2026)

Environmental Protection Agency (EPA), 2022. Guidelines on the information to be contained in Environmental Impact Assessment Reports. Available at: https://www.epa.ie (Accessed: February 2026)

Institute of Environmental Management and Assessment (IEMA), 2024. Impact Assessment Guidelines: Implementing the Mitigation Hierarchy from Concept to Construction. Available at: https://www.iema.net

Irish Planning Institute, 2025. Department of Climate, Energy and Environment. Marine Strategy Framework Directive. An Introduction. Available at: https://ipi.ie (Accessed: April 2026)

MacCabe Durney Barnes (MDB), 2017. Guidance on EIS and NIS preparation for Offshore Renewable Energy Projects. Prepared for the Department of Communications, Climate Action & Environment (DCCAE) and Sustainable Energy Authority of Ireland (SEAI). Available at: https://assets.gov.ie (Accessed: February 2026)

Office of the Attorney General, 2011. European Communities (Marine Strategy Framework) Regulations 2011 S.I. No. 249 of 2011 (as amended). Available at: https://www.irishstatutebook.ie (Accessed: April 2026)

Office of the Planning Regulator, n.d. Planning Library. Environment and Climate Glossary. Available at: https://www.opr.ie (Accessed: June 2026)

United Nations Convention on the Law of the Sea (UNCLOS), 1982. 1833 UNTS 3. Adopted 10 December 1982, entered into force 16 November 1994. Available at: https://www.un.org (Accessed: March 2026)