ABWP Phase I Decommissioning

Outline Offshore Decommissioning Environmental Management Plan

Volume 3, Appendix 3.4



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Project name ABWP Phase I Decommissioning

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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.
ABWP Phase II	ABWP Phase II comprises: • Offshore Infrastructure, including: – 53 or 47 WTGs and two Offshore Substation Platforms (OSPs) located within the "Array Area"; – Inter-array cables connecting WTGs with the OSPs; and – Two offshore export cables; • Onshore grid connection infrastructure, including a 220 kV substation at Shelton Abbey with an associated connection to the existing National Electricity Transmission Network; • Operations and Maintenance Facility (OMF) at South Dock, Arklow Harbour; and • EirGrid Upgrade Works.

Term	Meaning
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).
Archaeological Exclusion Zone (AEZ)	Area around a known or suspected archaeological feature within which specified activities or works are prohibited.
Archaeology Management Plan (AMP)	Document that sets out clear protocols to follow in the course of a project to ensure compliance with archaeological legislation by all parties, and mitigation of works in accordance with existing national monuments legislation.
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).
Competent authority	Are those authorities that are entitled to give authorisation or consent to a plan or project. In the planning system, this means planning authorities and An Coimisiúin Pleanála. There are, however, a wide range of other competent authorities in respect of other consent regimes e.g. EPA (environmental licencing), Minister for Agriculture, Food and the Marine (forestry, aquaculture and foreshore management), and various state bodies that have authority to undertake development under Part 9 of the Planning and Development Regulations (e.g. An Garda Síochána, defence forces, the courts service). The competent authority for this planning application is An Coimisiún Pleanála (ACP).
Consent	This shall include any licence, permission, permit, approval or other such authorisation granted by a public authority for any activity, or project where the authority is obliged to have regard to the requirements of the Environmental Impact Assessment (EIA) and/or Habitats Directive(s) (MDB, 2017).
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 Lighting and Marking Plan (LMP)	The contractor-developed version of the Outline LMP, to be prepared before Proposed Works Offshore commence and maintained as a live document until completion.
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 this 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 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.
Dumping	Any deliberate disposal in the maritime area (including side-cast dredging, plough dredging, water injection dredging and other such dredging techniques of a substance or material from or in conjunction with a vessel or aircraft or offshore installation (Dumping at Sea Act 1996 (as amended)).

Term	Meaning
Effect	The consequence of an impact on a receptor. For example, in the offshore environment, vessel activity (activity) results in increased levels of underwater noise (impact), with the potential to disturb marine mammals (effect).
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 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 factor	Refers to environmental factors used to present the characteristics of the environment (EPA, 2022) that are used to organise the description of the environment in the EIAR.
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.).
Fisheries Liaison Officer (FLO)	An individual (or individuals) identified with the responsibility of liaising with the fishing industry to provide communication associated with the Proposed Works Offshore. Liaison duties are undertaken while at sea or from an onshore location.
High Water Mark (HWM)	Level reached by the sea at high tide, measured as the mean of high tides.
Impact	A change brought about by the Proposed Works.
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).
Landfall	The point where the offshore export cable transitions from the offshore marine environment to the onshore terrestrial environment.
Maritime Area Consent (MAC)	State-issued right required to occupy a specific part of the maritime area for development. Maritime Area Consents (MACs) are managed by the Maritime Area Regulatory Authority (MARA).
Meteorological (Met) mast	A mast with a number of meteorological sensors located at different heights to record meteorological and sea condition data
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.
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

Term	Meaning
	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.).
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.
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).
Recycling	Subjection of waste to any process or treatment to make it re-usable in whole or in part (Waste Management Act 1996 (as amended)).
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.
Segregation	The separation of waste streams by type at source to improve reuse, recycling, recovery and traceability.
Sensitivity	The potential of a receptor to be significantly affected (EPA, 2022).
Side scan sonar (SSS)	Underwater remote sensing device that captures an image of the seabed surface across the extent of the area over which the device is deployed
Significance	The importance of the outcome of the impact (or the consequence of change) for the receiving environment (EPA, 2022).
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.

Term	Meaning
Transition Piece	The steel connection structure between the tower and the monopile (MP) foundation.
Underwater sound	The propagation of pressure waves through water, which can be generated by natural sources or human activities.
Vessel Monitoring System (VMS)	A satellite-based monitoring system used to track the activity of larger vessels and assess spatial fishing effort.
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 coordinator	The person appointed to oversee implementation, monitoring and review of waste management arrangements for the Proposed Works Offshore.
Waste Hierarchy	The order of preference for managing waste, prioritising prevention, reuse, recycling and recovery ahead of disposal.
Waste Management Facility (WMF)	A permitted or licensed facility authorised to receive, treat, recover or dispose of waste.
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
ABWP	Arklow Bank Wind Park
ACP	An Coimisiún Pleanála
AEZ	Archaeological Exclusion Zone
AIS	Automatic Identification System
AtoN	Aids to Navigation
BHD	Backhoe dredger
CIL	Commissioners of Irish Lights
CLM	Community Liaison Manager
COLREGs	International Regulations for Preventing Collisions at Sea
ComReg	Commission for Communications Regulation
CRU	Commission for Regulation of Utilities
CSD	Cutter Suction Dredger
DaS	Dumping at Sea
DEMP	Decommissioning Environmental Management Plan
DHLGH	Department of Housing, Local Government and Heritage
DP	Dynamic Positioning
DRP	Decommissioning and Reinstatement Plan
EIA	Environmental Impact Assessment
EIAR	Environmental Impact Assessment Report
ERCoP	Emergency Response Cooperation Plan

Acronym	Meaning
FLO	Fisheries Liaison Officer
FMMS	Fisheries Management and Mitigation Strategy
HWM	High Water Mark
IEMA	Institute of Environmental Management and Assessment
IMO	International Maritime Organization
INNS	Invasive Non-Native Species
IRCG	Irish Coast Guard
JUB	Jack-up Barge
LLA	Local Lighthouse Authority
LMP	Lighting and Marking Plan
MARA	Maritime Area Regulatory Authority
MARPOL	International Convention for the Prevention of Pollution from Ships
MBES	Multi-beam Echosounder
MMMP	Marine Mammal Mitigation Protocol
MP	Monopile
MPCP	Marine Pollution Contingency Plan
MSO	Marine Survey Office
MUL	Maritime Usage Licence
NIS	Natura Impact Statement
NMS	National Monuments Service
NPWS	National Parks and Wildlife Service
NSR	Noise Sensitive Receiver
OPRC	Oil Pollution Preparedness, Response and Co-Operation Convention
OSPAR	Convention for the Protection of the Marine Environment of the North-East Atlantic
PAD	Protocol for Archaeological Discoveries
PSR	Primary Surveillance Radar
RAMS	Risk Assessment Method Statements
ROV	Remotely Operated Vehicle
SAR	Search and Rescue
SBP	Sub-bottom Profiler
SFPA	Sea Fisheries Protection Authority
SOLAS	Safety of Life at Sea
SPRT	Soil plug removal tool
SSC	Suspended sediment concentrations
SSS	Side scan sonar
TBT	Toolbox talk
TP	Transition Piece
UKHO	United Kingdom Hydrographic Office

Acronym	Meaning
USBL	Ultra-short baseline
VMP	Vessel Management Plan
WMP	Waste Management Plan
WTG	Wind Turbine Generator
WWTP	Wastewater Treatment Plant

Units

Unit	Meaning
km	kilometres
kV	kilovolts
m	metre
MW	megawatts

1 INTRODUCTION

1.1 Purpose of the Outline Offshore Decommissioning Environmental Management Plan

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 The purpose of this Outline Offshore Decommissioning Environmental Management Plan (DEMP) is to provide a consolidated framework that outlines the minimum requirements with regard to environmental management during Proposed Works Offshore (above the high water mark (HWM)), including embedded mitigation measures (i.e. mitigation measures included as part of the Proposed Works Offshore, such as modifications arising through the iterative design / methodology development process; and standard industry practice that would occur even without input from the Environmental Impact Assessment (EIA)), as well as additional mitigation measures (i.e. actions that will be required to reduce the significance of environmental effects of the Proposed Works Offshore, as identified in the Environmental Impact Assessment Report (EIAR) and the Natura Impact Statement (NIS), prepared in support of the planning application for Proposed Works Offshore).

1.1.1.3 This Outline Offshore DEMP provides a template whereby the Principal Decommissioning Contractor, once appointed, will be required to update and maintain the Detailed Offshore DEMP, based on the final detailed design and decommissioning methodology, in addition to tracking and complying with any planning conditions relevant to the Proposed Works Offshore. Whilst the Detailed Offshore DEMP will be updated based on the final detailed design, the Principal Decommissioning Contractor will be required to meet the minimum requirements outlined in this outline version of the Offshore DEMP. Instructions for the Principal Decommissioning Contractor to prepare and maintain the Detailed Offshore DEMP are written in *[red font]*.

1.1.1.4 The Detailed Offshore DEMP will be implemented in accordance with the requirements of the planning permission issued under Section 291 of the Planning and Development Act 2000, as amended.

1.2 Document Structure

1.2.1.1 This Outline Offshore DEMP is structured around the following sections:

- **Section 1. Introduction** (this section): presents the purpose of the Outline Offshore DEMP and implementation and maintenance of the Detailed Offshore DEMP by the Principal Decommissioning Contractor. It also makes reference to guidance considered and scope covered;
- **Section 2. Proposed Works Offshore**: provides an overview of Proposed Works Offshore, with a focus on decommissioning methodologies and programme;
- **Section 3. Roles and Responsibilities**: outlines roles and responsibilities in relation to environmental management and mitigation during Proposed Works Offshore;
- **Section 4. Communication and Reporting**: presents minimum communication and reporting requirements related to environmental management of relevance throughout the duration of Proposed Works Offshore;
- **Section 5. Environmental Training, Monitoring, and Auditing:** presents minimum environmental requirements for personnel training, monitoring and auditing of environmental performance; and
- **Section 6. Environmental Management and Mitigation**: provides a consolidated framework for environmental management relevant to Proposed Works Offshore, organised by environmental factor.

1.2.1.2 This Outline Offshore DEMP is supported by a number of appendices that provide relevant supporting information. In some cases, appendices are used as placeholders for the Principal Decommissioning Contractor to include when preparing the Detailed Offshore DEMP. In other cases, appendices cross-reference standalone documents presented as part of the EIAR for the Principal Decommissioning Contractor to update / finalise as part of the Detailed Offshore DEMP (as applicable).

[Principal Decommissioning Contractor to update document structure where applicable]

1.3 Implementation of the Detailed Offshore Decommissioning Environmental Management Plan

1.3.1.1 The Detailed Offshore DEMP will form part of the contract for Proposed Works Offshore between Arklow Energy and the Principal Decommissioning Contractor.

1.3.1.2 The Principal Decommissioning Contractor will prepare the Detailed Offshore DEMP based on this Outline Offshore DEMP, and take ownership of the document, maintaining it as a live document throughout the duration of Proposed Works Offshore, once appointed. The Detailed Offshore DEMP shall be updated following any significant changes in detailed design, decommissioning methodology or further environmental information becoming available. In addition, the Principal Decommissioning Contractor shall ensure that management and mitigation captured in the Detailed Offshore DEMP is in line with planning conditions and requirements from other relevant permits (where applicable).

1.3.1.3 The appointed Principal Decommissioning Contractor and subcontractors will have relevant experience and be aware of standard procedures and practices to avoid environmental impacts. The Principal Decommissioning Contractor will:

- Provide all relevant information, as detailed in and required by this document, to Arklow Energy and/or the relevant authority, to ensure that the Proposed Works Offshore are conducted in compliance with this document and with any other statutory or regulatory requirements;
- Provide all relevant environmental information, including a copy of the Detailed Offshore DEMP and reporting procedures relevant to work undertaken by subcontractors, to subcontractors;
- Consider the requirements contained within the Detailed Offshore DEMP when developing task-specific Risk Assessment Method Statements (RAMS), requiring the same from subcontractors;
- Require subcontractors to identify how they intend to manage environmental issues for their element of the works; and,
- Take responsibility for the environmental performance of subcontractors.

1.3.1.4 Revisions of the Detailed Offshore DEMP will be agreed with Arklow Energy and the consenting authority, as required, and recorded in the document version control. The Detailed Offshore DEMP will be stored electronically by the Principal Decommissioning Contractor. The Detailed Offshore DEMP will be reissued to any relevant authorities and/or stakeholders upon request.

1.4 Relevant Guidance

1.4.1.1 This Outline Offshore DEMP has been prepared in line with the International Institute of Environmental Management and Assessment (IEMA) Impact Assessment Guidelines: Implementing the Mitigation Hierarchy from Concept to Construction (IEMA, 2024).

1.5 Notes on Scope

1.5.1.1 This Outline Offshore DEMP only covers the Proposed Works Offshore, seaward of the HWM, and does not apply to Proposed Works Onshore, landward of the HWM. A separate Outline Onshore DEMP has been developed for these components of the Proposed Works (see **Volume 3, Appendix 3.1: Outline Onshore Decommissioning Environmental Management Plan**).

1.5.1.2 This document does not detail any requirements for Health and Safety risk assessments and prevention measures. It is assumed that, in accordance with standard good practice and Irish legislation, the implementation of appropriate Health and Safety measures will be detailed in other documentation produced by the Principal Decommissioning Contractor.

2 PROPOSED WORKS OFFSHORE

2.1 Overview

2.1.1.1 The ABWP Phase I offshore wind farm includes offshore infrastructure located seaward of the HWM off the coast of Arklow, County Wicklow, in southeast Ireland, located within 10 kilometers (km) of the coast, and comprises:

- Seven Wind Turbine Generators (WTGs), comprising three rotor blades, nacelle and tower, sitting on transition pieces (TPs) and monopile (MP) foundations, with a combined capacity of 25.2 megawatts (MW);
- One meteorological (met) mast sitting on a TP and MP, located south of the southernmost WTG turbine (T1);
- Scour protection, in the form of sandbags, which have historically been placed around MPs to minimise scour and protect MP integrity in accordance with the original MP structural design;
- Inter-array cables that connect WTGs and the met mast, located within the Sub Lease Area; and
- One offshore export cable connecting WTG turbine 4 (T4) to the landfall point at HWM.

2.1.1.2 The Proposed Works Offshore comprise the decommissioning of offshore infrastructure and will be undertaken within the 'Offshore Site', illustrated in **Figure 1**, which includes:

- The Sub Lease Area, where WTGs, met mast and associated scour protection and inter-array cables are located; and
- A 10 m cable corridor along the offshore export cable route connecting T4 to the landfall point at HWM.

2.1.1.3 The vessel access channels and dredging areas illustrated in **Figure 1** are indicative only, and shall be confirmed based on dredging required to ensure safe vessel access, if any.

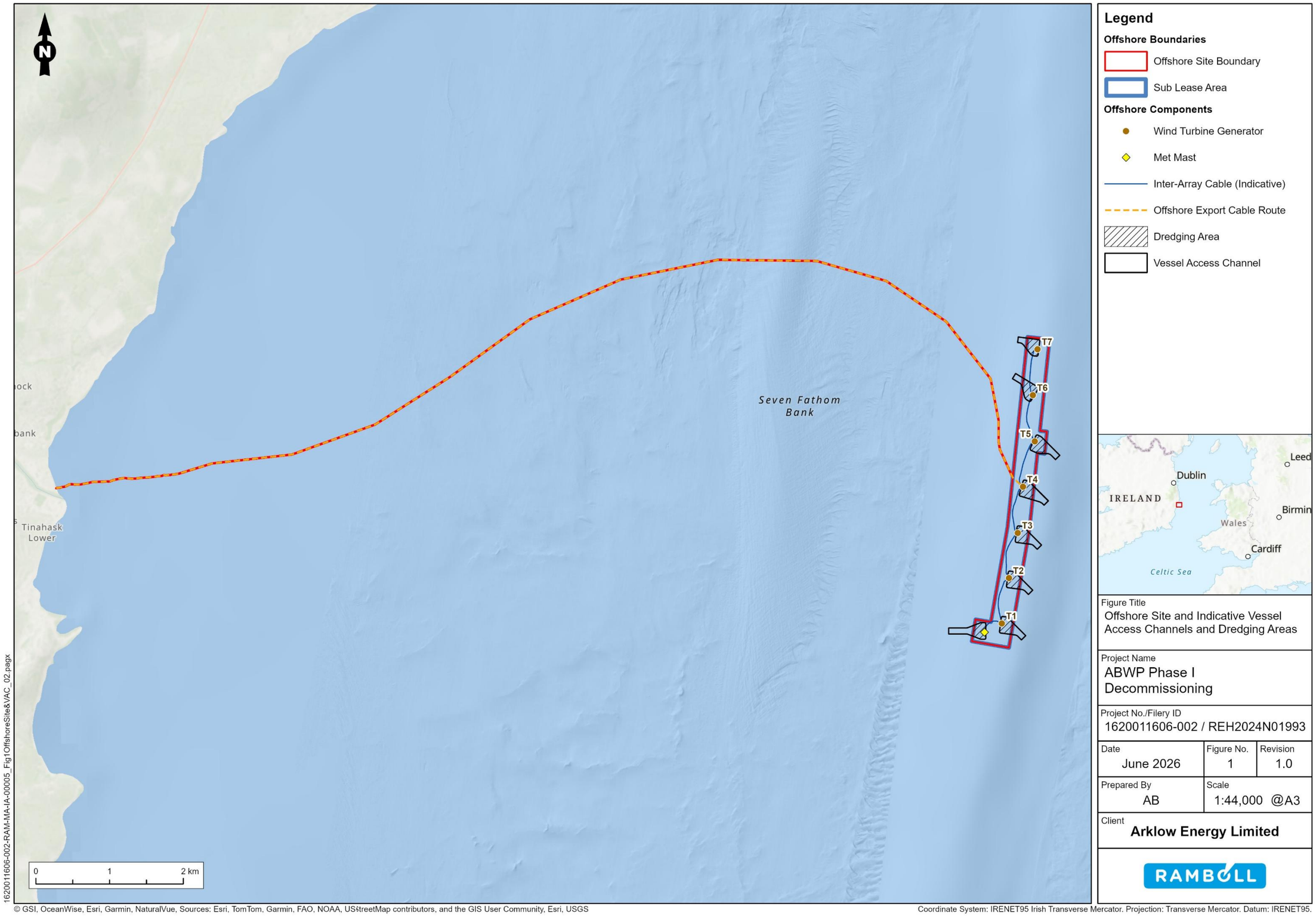


Figure 1: Offshore Site and indicative vessel access channels and dreding areas

2.2 Summary of Proposed Works Offshore Activities

2.2.1.1 A summary of Proposed Works Offshore activities and vessels / plant anticipated is presented in **Table 2.1**. Detailed method statements and/or RAMS are presented in **Appendix A.**

*[Principal Decommissioning Contractor to update Table 2.1 where required, and include detailed method statements / RAMS in **Appendix A**]*

2.2.1.2 In line with the Detailed Lighting and Marking Plan (LMP) (**Appendix J**), a work area around the Sub Lease Area will be demarkated with buoys to cover the area needed for decommissioning vessels to operate safely throughout the duration of Proposed Works Offshore. Along the offshore export cable corridor, a 500 m moving work area will also be implemented.

*[Principal Decommissioning Contractor to include the Detailed LMP, including buoy coordinates, in **Appendix J**]*

Table 2.1: Summary of Proposed Works Offshore

Activities	Anticipated approach / methods	Anticipated vessels required
Pre-decommissioning surveys	Geophysical / Remote Operating Vehicle (ROV) / diver surveys undertaken to confirm bathymetric conditions, identify any obstructions and hazards, and update the decommissioning methodology and programme.	Survey vessel equipped with: • Multi-beam Echosounder (MBES) • Side Scan Sonar (SSS) • Sub-Bottom Profilers (SBP) • Magnetometer • ROV • Dynamic Positioning (DP) • Ultra-Short-Baseline (USBL) acoustic positioning systems
Dredging (to facilitate safe vessel access, if required)	Subject to vessel requirements and bathymetric conditions found at the time of decommissioning: • Pre-dredging bathymetric surveys to confirm bathymetry conditions and refine dredging / disposal areas (if any required), volume estimates and methodologies (to be kept within limits / requirements of Dumping at Sea (DaS) permit, see **Appendix B**); • Dredging within Sub Lease Area using: – a Cutter Suction Dredger (CSD), with disposal via pipeline / sidecasting within the Sub Lease Area; – a backhoe dredger (BHD), with disposal via sidecasting within the Sub Lease Area; – plough dredging, if required to maintain required depth within vessel access channels created following dredging with the above methods.	• Survey vessel equipped with MBES; • CSD supported by a single small tugboat and a shallow draft small survey vessel (equipped with MBES); • BHD supported by a single small tugboat and a single split hopper barge, and a shallow draft survey vessel; and/or • Plough dredger supported by a small survey vessel, equipped with MBES.
Decommissioning of WTGs	Reversal of the installation process: • Preparation works, including inspection, removal / securing loose items, etc; • Position of JUB for pre-load and jack up to working height; • Completion of safety checks and preparation of the WTG for lifting; • Full de-energising of the WTG, routing power supply from JUB if required for dismantling; • Permanent removal of rotor and blades; • Disconnection of power and signal cables between the nacelle and tower before removing nacelle; and	Jack Up Barge (JUB) supported by two tugboats and transport barge, with potential use of: • DP • USBL acoustic positioning systems

Activities	Anticipated approach / methods	Anticipated vessels required
	• Disconnection of power and signal cables between the tower and the TP/ lift system before removing the tower.	
Decommissioning of met mast	Dismantled in two separate sections. The triangular platform will subsequently be dismantled using similar plant and lifting equipment used during WTG decommissioning.	JUB supported by two tugboats and transport barge, with potential use of: • DP • USBL acoustic positioning systems
Decommissioning of TPs	• Position of JUB for pre-load and jack up to working height. Position of transport barge next to JUB and of gangway next to the TP to provide safe access; • General inspection of the TP before preparation activities for safety purposes; • Removal / securing of loose items inside and outside of the TP; • Installation and non-destructive testing of new lifting points, if required; • Securing the TP to crane prior to cutting; and • Lifting TP and cutting spread to the JUB or transport barge.	JUB supported by two tugboats and transport barge, with potential use of: • DP • USBL acoustic positioning systems
Decommissioning of foundations	• Following removal of the TP, then the seabed material inside MPs will be extracted using a soil plug removal tool (SPRT). The target dredging depth will be 3 m below the target cutting depth to ensure the cutting equipment can be safely operated. • Dredged material will be placed within 100 m of the MP locations; • Use of jetting, vibratory or any other friction removal equipment around the MP, if required; • Installation of the internal cutting equipment inside the MP at the required cutting depth; • Securing the MP to the crane for lifting before cutting the MP; • Holding and then lifting the MP whist activating the equipment which may be required to mitigate potential shaft friction; and • Transfer cutting equipment and MP onto the JUB and transport barge respectively.	JUB supported by two tugboats and transport barge, with potential use of: • DP • USBL acoustic positioning systems
Scour protection removal	• Position of support vessel equipped with MBES and grab dredger next to the MP; • Guiding the grab dredger to grab any individual sandbags which are identified and mapped during MBES, and to lift them from the seabed to a skip located on a supporting barge; and • Recovering of sandbags and release of material back into the seabed via side casting.	• Grab dredger • Small barge equipped with MBES and a skip to temporarily store the content of sandbags
Inter-array cable removal	• Positioning the multicat vessel at the designated location near the WTG where the cable needs to be recovered; • Lifting the cable using a running method, pulling out and up using clamps and a cable puller, which is towed slowly across the seabed; and • Cutting the cables underwater or on vessel deck with shears into manageable sections for deposition into containers.	• Multicat vessel of shallow draft equipped with a running method

Activities	Anticipated approach / methods	Anticipated vessels required
Offshore export cable removal	• Positioning the multicat vessel at the designated location near the WTG T4 where the cable needs to be recovered; • Lifting the cable using a running method, pulling out and up using clamps and a cable puller; • Cables will be cut underwater or on vessel deck with shears into manageable sections, deposited in containers for subsequent transfer to port. • The offshore export cable closer to shore will be severed by grapple and shears in the vicinity of landfall and left exposed on the seabed until it is pulled onshore from the land; and •	• Multicat vessel of shallow draft equipped with a running method
Post-decommissioning survey	Geophysical survey undertaken to verify the resulting seabed condition within the Offshore Site.	Survey vessel equipped with: • MBES • SSS • SBP • Magnetometer • DP • USBL acoustic positioning systems

2.3 Ports and Vessel Spread

2.3.1.1 At this stage, it is anticipated that the main decommissioning vessels will be mobilised from a European port, assuming a transit duration of up to 15 days.

2.3.1.2 ABWP Phase I decommissioned components will be taken to an available Irish port (Rosslare, Waterford, Dublin and Greenore are potential ports being considered at this stage).

[Principal Decommissioning Contractor to confirm origin of decommissioning vessels, Irish ports to support Proposed Works Offshore and associated transit times]

2.3.1.3 Upon arrival to the selected port, components will be unloaded using the vessel's main crane, auxiliary cranes/ and land cranes to optimise the programme.

[Principal Decommissioning Contractor to confirm port arrangements for temporary storage of decommissioned components]

2.3.1.4 Components will subsequently be transferred and processed for reuse, recycle or disposal on land in line with legal requirements, transferred to suitable and licenced waste management facilities in Ireland or potentially outside of Ireland in line with the Detailed Offshore Waste Management Plan (WMP) (see **Section 6.11** and **Appendix L**).

*[Principal Decommissioning Contractor to include Detailed Offshore WMP in **Appendix L**]*

2.4 Programme

2.4.1.1 Proposed Works Offshore will be undertaken when seabed level conditions are favourable for safe vessel access and to minimise the extent of dredging works required or avoid them all together, which may result in the Proposed Works Offshore being staged in different years.

2.4.1.2 All Proposed Works Offshore will be programmed during favourable weather / sea state conditions to reduce the risk of downtime and risks to personnel, and be undertaken 24 hours (except where otherwise specified in **Appendix A**), seven days a week to maximise favourable weather / sea state windows of time.

2.4.1.3 **Table 2.2** sets out an indicative programme for the Proposed Works Offshore to be undertaken in one season i.e. without staging, distinguishing between two main campaigns:

- First campaign, focused on the decommissioning of WTGs and met mast; and
- Second campaign, focused on the decommissioning of TPs/MPs, scour protection removal and inter-array and offshore export cable removal; as well as post-decommissioning surveys.

2.4.1.4 The indicative programme illustrated in **Table 2.2** assumes that dredging for vessel access required, if any, and associated pre-dredging surveys would be completed within the timeframes presented.

2.4.1.5 It should be noted that if there are programme gap(s) between campaigns lasting more than one year, then the work area, demarcated with buoys, will be removed during these programme gap(s) when no Proposed Works Offshore take place. During these potential programme gap(s), existing marine marking will be reinstated, with marine lantern marking placed on the TPs.

[Principal Decommissioning Contractor to replace with detailed programme. If works are proposed to be undertaken in different stages, individual programmes for each stage should be presented, as these become available]

Table 2.2: Indicative programme of Proposed Works Offshore

Activities	Expected duration	Weeks																														
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Pre-decommissioning Surveys	10 days																																
Finalisation of Offshore Decommissioning Method Statement and associated management plan	30 days																																
Mobilisation (between off-hire place (European port) to designated Irish port and to Offshore Site)	16 days																																
First Campaign																																	
Decommissioning of WTGs at three locations	19.5 days (6.5 days per WTG)																																
Transfer from Offshore Site to designated Irish port, unloading and remobilization	5 days																																
Decommissioning of WTGs at three locations	19.5 days (6.5 days per WTG)																																
Transfer from Offshore Site to designated Irish port, unloading and remobilization	5 days																																
Decommissioning of final WTG and met mast	9 days (6.5 days for the WTG and 2.5 days for the met mast)																																
Transfer from Offshore Site to designated Irish port, unloading and remobilisation	5 days																																
Second Campaign																																	
Decommissioning of TP/MP at four locations	38 days (9.5 days per TP/MP)																																
Transfer from Offshore Site to designated Irish port, unloading and remobilisation	5 days																																
Decommissioning of TP/MP at four locations	38 days (9.5 days per TP/MP)																																

Activities	Expected duration	Weeks																														
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Transfer from Offshore Site to designated Irish port, unloading and transit to off-hire place (European port)	27 days																																
Scour protection removal	20 days																																
Inter-array cable removal	20 days																																
Offshore export cable removal	35 days																																
Post-decommissioning surveys	10 days																																

3 ROLES AND RESPONSIBILITIES

3.1.1.1 **Table 3.1** sets out the roles and responsibilities referenced within the Outline Offshore DEMP that will be fulfilled by the Principal Decommissioning Contractor or subcontractor personnel in relation to environmental management during the Proposed Works Offshore.

[Principal Decommissioning Contractor to develop list of roles and responsibilities, including names and contact details. Some of these roles may be fulfilled by the same person and additional positions may be added as appropriate]

Table 3.1: Roles and responsibilities

Role Title	Name and Contact Details	Responsibility
Arklow Energy Project Manager	*[To be added]*	• Overall coordination of offshore vessel operations and marine activities during Proposed Works Offshore (i.e. marine coordination), noting that part of the marine coordination role may be handed over to the Principal Offshore Decommissioning Contractor; • Ongoing compliance with the Offshore DEMP and supporting documents, ensuring sufficient and adequate resources and processes are in place; • Appointment of a Principal Decommissioning Contractor and subcontractors, ensuring contractual obligations of these in relation to the Offshore DEMP; • Monitor non-compliance and implementation of corrective and preventive actions, ensuring these are addressed efficiently; and • Report to Arklow Energy's senior management.
Arklow Energy Environmental Manager	*[To be added]*	• Review and approval of the detailed Offshore DEMP prepared and regularly updated by the Principal Decommissioning Contractor, including any associated environmental monitoring; • Conduct environmental audits and/or inspections to ensure compliance of Proposed Works Offshore with the Offshore DEMP and supporting documentation, e.g. ensuring environmental reports and records are generated and maintained; • Ensure that reporting of compliance with planning conditions (and conditions / requirements in other permits with environmental components) is submitted to the relevant authorities / stakeholders in a timely manner and in accordance with conditions; • Promote a positive environmental culture, increasing environmental awareness throughout the Proposed Works Offshore, including via progress meetings, induction and toolbox talks (TBTs) and training (see **Section 4**); • Approve any corrective / preventive actions proposed by the Principal Decommissioning Contractor in response to any environmental hazard, risk, near miss, incident or query raised by the Principal Decommissioning Contractor or subcontractors; • Liaison with relevant stakeholders on matters relating to the environment, as required; and • Report to Arklow Energy Project Manager.
Marine Archaeological Consultant	*[To be added]*	• Support the Arklow Energy Project Manager / Environmental Manager in relation to archaeological matters; • Review of pre-decommissioning surveys to propose refinement of **Archaeological Exclusion Zones** (AEZs), see **Section 6.5**; • Undertake archaeological monitoring works as required, e.g. during potential dredging works (if required); • Support the Arklow Energy Environmental Manager during engagement with the National Monuments Service (NMS), as required; and

Role Title	Name and Contact Details	Responsibility
		• Keep a record of any archaeological issues / non-compliance and course of action taken.
Community Liaison Manager (CLM)	*[To be added]*	• Act as the primary liaison between Arklow Energy / Principal Decommissioning Contractor and local communities, ensuring transparent communication, managing feedback, and coordinating consultation events (if any).
Fisheries Liaison Officer (FLO)	*[To be added]*	• Maintain effective communication with the fishing industry, regulators and other stakeholders; • Where safe coordination between Proposed Works Offshore vessels and fishing vessels is needed, the FLO will act as the primary point of contact at sea between Proposed Works Offshore vessels and fishing vessels; • Develop and maintain a fisheries stakeholder database, including vessel and contact information; • Ensure that relevant information on Proposed Works Offshore activities is distributed in a timely and accessible manner; • Organise and attend meetings with fisheries stakeholders, including port visits where appropriate; • Advise Arklow Energy and contractors on fishing activity, sensitivities and potential interactions; • Maintain a log of communications and any fisheries-related issues raised; and • Coordinate responses to fisheries concerns, including facilitating resolution where practicable.
Principal Decommissioning Contractor	*[To be added]*	• Coordination of offshore vessel operations and marine activities (i.e. marine coordination) during Proposed Works Offshore as required by Arklow Energy Project Manager; • Update and maintain the detailed Offshore DEMP, based on the detailed design and decommissioning methodology, as well as any permits and permissions (**Appendix B**) relevant to the Proposed Works Offshore, preparing and providing RAMS, detailed management plans, and any associated recording and reporting templates in line with the Offshore DEMP, to be provided to Arklow Energy Environmental Manager at least 10 working days in advance of relevant Proposed Works commencing; *[Principal Decommissioning Contractor to record any relevant permits and permissions in **Appendix B**]* • Appointment of an Environmental Manager with a minimum of five years site experience for acceptance by Arklow Energy Environmental Manager prior to commencement of Proposed Works Offshore; • Provide regular updates and support CLM during Proposed Works Offshore, as required; • Responsible for the day-to-day management of the Proposed Works Offshore and practical implementation of the Offshore DEMP, ensuring any required monitoring, reporting and recording is maintained; • Ensure all personnel involved in Proposed Works Offshore receive suitable environmental induction and training prior to undertaking any Proposed Works Offshore; • Accountable for the overall performance of the Offshore DEMP and associated requirements, including subcontractors' performance, providing any requested records to Arklow Energy Environmental Manager without delay; • Notify the Arklow Energy Environmental Manager of any environmental hazard, risk, near miss, incident or environmental queries without delay; and • Report to Arklow Energy Project Manager and Environmental Manager.

Role Title	Name and Contact Details	Responsibility
Subcontractors	*[To be added]*	• Adhere to relevant requirements specified in the detailed Offshore DEMP, including participation in required induction and training; and • Report to Principal Decommissioning Contractor.

3.1.1.2 Prior to commencement of Proposed Works Offshore, a Contacts Sheet will be compiled, which will provide a list of all contact details and be made available to the Project Team, maintained updated regularly throughout the Proposed Works Offshore.

4 COMMUNICATION AND REPORTING

4.1 Internal Communication and Reporting

4.1.1.1 The Principal Decommissioning Contractor will be required to provide the detailed Offshore DEMP, RAMS, detailed management plans, and any associated recording and reporting templates to Arklow Energy Environmental Manager at least 10 working days in advance of relevant Proposed Works Offshore commencing.

4.1.1.2 It is the responsibility of all personnel engaged in the Proposed Works Offshore to report any occurrence of issues, accidents and where an environmental procedure has not been followed.

4.1.1.3 Where environmental issues are identified by any stakeholder or personnel, they will be communicated to Arklow Energy Environmental Manager for review, who will identify a suitable course of action, and will ensure:

- an appropriate action to address the environmental issue is identified and implemented, where appropriate;
- a suitable owner for the action is identified and they are informed of the fact;
- the action owner is monitored during completion of the action; and
- the results of the action are recorded and communicated to those that raised the issue.

4.1.1.4 The procedure, timelines and external notification requirements to be followed in the event of an environmental incident, in line with applicable requirements, is provided **Appendix C** (excluding marine pollution incidents, which are covered in the Marine Pollution Control Plan (MPCP) (**Appendix F**).

[Principal Decommissioning Contractor to include the Environmental Incident Procedure in Appendix C]

4.1.1.5 The Principal Decommissioning Contractor will be required to maintain an Offshore Environmental Action Tracker (**Appendix D**), which will collate all requirements and record environmental issues, accidents or non-compliances, as well as the course of action followed, which will allow for the identification of any additional preventive action to take place and ensure that the event does not occur again.

[Principal Decommissioning Contractor to include the Offshore Environmental Action Tracker in Appendix D]

4.2 External Communication and Reporting

4.2.1.1 The CLM will act as the primary liaison between Arklow Energy / Principal Decommissioning Contractor and local communities, ensuring transparent communication, managing feedback, and coordinating consultation events (if any).

4.2.1.2 Arklow Energy Environmental Manager will be responsible for liaising with any relevant authorities / stakeholders, carrying out any required external communications, notifications and reporting, and responding to any evidence / information requests in line with the detailed Offshore DEMP.

4.2.1.3 The Principal Decommissioning Contractor and subcontractors must ensure that any complaints are accurately recorded and reported in line with a protocol to be agreed with Arklow Energy, and a log will be maintained to include details of the response and actions taken (**Appendix E**).

[Principal Decommissioning Contractor to include the Complaint Protocol Appendix E]

4.2.1.4 The Principal Decommissioning Contractor will ensure complaints are investigated promptly and responses and/or corrective actions implemented. All observations, queries and complaints will be dealt with in a timely manner.

5 ENVIRONMENTAL TRAINING, MONITORING AND AUDITING

5.1 Induction Training

5.1.1.1 TBTs and induction training of all personnel, including subcontractors and individuals external to the Proposed Works Offshore, will be implemented by the Principal Decommissioning Contractor to ensure that all personnel are aware of the content of the detailed Offshore DEMP and its applicability to them, environmental sensitivities of the Offshore Site and surrounding area and the measures that should be implemented to minimise potential impacts on the environment.

5.1.1.2 TBTs will be scheduled in advance of relevant Proposed Works Offshore activities (for example, MP lifting), identifying specific control measures and mitigation requirements.

5.1.1.3 In addition, the Principal Decommissioning Contractor will prepare a series of awareness materials and distribute within the project team, which may include training packs, posters, signs and newsletters.

5.1.1.4 A record of environmental training delivered and attendees will be maintained by the Principal Decommissioning Contractor for potential inspection during environmental audits.

5.2 Environmental Monitoring and Auditing

5.2.1.1 The primary monitoring tool available for the Proposed Works Offshore will be the Offshore Environmental Action Tracker (**Appendix D**), which will provide a log of all requirements to be adhered to throughout the lifetime of the Proposed Works Offshore, including those identified in the EIAR and described in this Outline Offshore DEMP, as well as those from planning conditions, permits and permissions. The Offshore Environmental Action Tracker will also be used to record environmental issues, accidents or non-compliances, and associated course of action taken.

5.2.1.2 The purpose of the Offshore Environmental Action Tracker is to provide a tool intended for use by both Arklow Energy Environment Manager and the Principal Decommissioning Contractor to track compliance and environmental performance, providing a record and audit trail across Proposed Works Offshore.

5.2.1.3 The Principal Decommissioning Contractor will be responsible for compiling the Offshore Environmental Action Tracker list of requirements before Proposed Works Offshore commence, issued to Arklow Energy Environment Manager for approval, and maintain this as a live document throughout the Proposed Works Offshore, shared with Arklow Energy Environmental Manager upon request.

5.2.1.4 The Principal Decommissioning Contractor will be responsible for undertaking environmental audits on a weekly basis, providing audit reports to Arklow Energy Environmental Manager as requested.

5.2.1.5 Arklow Energy Environmental Manager may also carry out independent environmental audits to ensure compliance, including site visits and conversations with employees.

5.2.1.6 Details and findings of all monitoring and audit activities will be recorded. Any observations or corrective actions arising from audits and inspections will be addressed, with procedures updated in the detailed Offshore DEMP as required.

6 ENVIRONMENTAL MANAGEMENT AND MITIGATION

6.1.1.1 This section outlines the environmental aspect-specific management and mitigation measures to be implemented during the Proposed Works Offshore. These measures have been developed through the EIA process.

6.1.1.2 **Sections 6.1 - 6.12** capture proposed mitigation and management measures to be implemented during the Proposed Works Offshore by the Principal Contractor based on available information about the Offshore Site and the Proposed Works Offshore at this stage.

*[Principal Contractor to update **Sections 6.1 - 6.12** in line with any relevant planning conditions or requirements identified by separate decommissioning permits.]*

6.1.1.3 **Sections 6.1 - 6.12** distinguish between embedded and additional mitigation measures identified during the EIA process and cover all environmental aspects that were scoped into the EIAR and assessed for the Proposed Works Offshore. They also include any scoped-out environmental aspects for which embedded mitigation will be applied.

6.1 Coastal Processes, Water and Sediment quality

Environmental Management and Mitigation relevant to Coastal Processes, Water and Sediment Quality	
Potential impacts	• Increased suspended sediment concentrations (SSC) and associated deposition; • Changes in physical processes and seabed morphology; • Scour development around MP exposure post-decommissioning; • Accidental release of pollutants; and • Release of carbon through sediment disturbance.
Embedded mitigation	• Cutting of monopiles to a depth below the seabed that minimises post-decommissioning exposure; • Avoid simultaneous dredging at multiple locations (if dredging is required) to reduce cumulative SSC and schedule works during appropriate tidal conditions; • Turbidity monitoring during dredging / dredged material disposal activities (if required) in line with Cronin *et al.* (2016) and/or the DaS monitoring requirements; • Implement controlled lifting and extraction procedures to minimise sudden release of sediments during Proposed Works Offshore; • Implement measures to minimise and/or control potential release of pollutants during Proposed Works Offshore including: – Storage of chemicals in secure designated areas in line with appropriate regulations and guidelines, including the Safety, Health and Welfare at Work (Chemical Agents) Regulations 2001 (as amended) (Schedule 4, Part 5); International Convention for the Prevention of Pollution from Ships (MARPOL) 1973 (as amended) (Annex II, and Annex III regulations); International Convention for the Safety of Life at Sea (SOLAS) (Chapter VII); OSPAR Annex III: On the Prevention and Elimination of Pollution from Offshore Sources; – Double skinning and labelling of containers containing hazardous substances; – Handling of wastes in accordance with appropriate regulations and guidelines (see **Section 6.11**); all decommissioning-generated wastes (including recovered infrastructure and any dredged material or debris) will be handled and disposed of in accordance with Irish waste legislation and (if applicable) – Adherence to DaS permit requirements related to potential release of pollutants and/or monitoring of dredging works; – Vessel refuelling to take place in port or under permit from the Irish Coast Guard (IRCG). All bunkering procedures and records will be maintained by the vessel Master, and ready for inspection; – Vessel sewage treatment, associated documentation and holding tank(s) will be available for inspection. So far as is reasonably practicable, vessel sewage will be transferred to shore for treatment, when in port, and records of those transfers will be maintained by the vessel Master. Otherwise, all discharges to sea will be compliant with IMO (MARPOL Annex IV) regulations, and recorded (location of discharge start and end, amount discharged, vessel speed, etc), see **Appendix G**; and – Adherence to the MPCP (**Appendix F**) to identify risks, response strategies and step-by-step procedures for managing any spills and contaminant releases or collision incidents arising from Proposed Works Offshore, including key emergency details; *[Principal Decommissioning Contractor to insert MPCP in Appendix F].* • Adherence to the Detailed Vessel Management Plan (VMP) (**Appendix G**) that defines best-practice vessel management measures, including transit routes, speed restrictions, timing of activities, pollution prevention, and crew environmental awareness, to minimise disturbance, collision risk, and ecological harm; *[Principal Decommissioning Contractor to insert Detailed VMP in Appendix G].*

Environmental Management and Mitigation relevant to Coastal Processes, Water and Sediment Quality	
	• Adherence to the Detailed Offshore Waste Management Plan (WMP) (**Appendix L**), which includes requirements for the identification, handling, and management of wastes arising from Proposed Works Offshore, ensuring compliance with standard industry practice and relevant waste legislation; and *[Principal Decommissioning Contractor to insert Detailed Offshore WMP in Appendix L].* • Post-decommissioning monitoring through bathymetric surveys within the Sub Lease Area to verify resulting seabed conditions following Proposed Works Offshore and record any observed residual MP exposure to notify relevant authorities.
Additional mitigation	N/A
Monitoring	No additional monitoring beyond that defined as part of Proposed Works Offshore (embedded mitigation), i.e.: • Turbidity monitoring during dredging / dredged material disposal activities (if required); • Post-decommissioning monitoring.
Emergency measures	• Any accidental pollution of the marine environment shall be immediately reported to the IRCG and to any other local authorities who are likely to be affected by such pollution (see **Section 4.2**). • Implementation of MPCP as required (**Appendix F**). • Implementation of Emergency Response Cooperation Plan (ERCoP) as required (**Appendix K**). *[Any other emergency measures considered to be outside the scope of the MPCP/ ERCoP to be identified by Principal Decommissioning Contractor if necessary].*
Planning conditions, permits and permissions	• DaS Permit (**Appendix B**) *[Principal Decommissioning Contractor to attach DaS permit and associated conditions to Appendix B and summarise here those specifically relevant to coastal processes, water and sediment quality that are not covered by embedded / additional mitigation or monitoring measures listed above]* *[Principal Decommissioning Contractor to identify any other relevant consents, licences and permissions]*
Relevant stakeholders	• Environmental Protection Agency (EPA) • Marine Institute *[Others to be identified by Principal Decommissioning Contractor]*
Additional information	• **Appendix A** – Detailed Method Statements and RAMS • **Appendix B** – Permits and Permissions • **Appendix F** – MPCP • **Appendix G** – Detailed VMP • **Appendix K** – ERCoP • **Appendix L** – Detailed Offshore WMP *[Principal Decommissioning Contractor to identify any other additional information of relevance to the environmental management of Proposed Works Offshore in relation to coastal processes, water and sediment quality]*

6.2 Marine Biodiversity

Environmental Management and Mitigation relevant to Marine Biodiversity	
Potential impacts	• Removal of hard substrates affecting benthic subtidal ecology; fish, shellfish and sea turtle ecology; marine mammals; and ornithology; • Temporary habitat loss / disturbance affecting benthic subtidal and intertidal ecology; and shellfish ecology; • Increased SSC and associated deposition affecting benthic subtidal and intertidal ecology, fish, shellfish and sea turtle ecology; • Disturbance /remobilisation of sediment bound contaminants affecting benthic subtidal and intertidal ecology, fish, shellfish and sea turtle ecology; • Alteration of seabed habitat from changes in physical processes due to the disturbance of the seafloor and the removal of structures affecting benthic subtidal and intertidal ecology, fish, shellfish and sea turtle ecology; • Injury and/or disturbance from underwater noise affecting fish, shellfish and sea turtle ecology, marine mammals; • Disturbance and/or displacement affecting ornithology and bats; • Changes in the fish and shellfish community affecting prey resources affecting marine mammals and ornithology; • Increased risk of invasive and Non-Native Species (INNS) introduction / spread affecting benthic subtidal and intertidal ecology; and • Accidental release of pollutants affecting benthic subtidal and intertidal ecology, fish, shellfish and sea turtle ecology, marine mammals and ornithology.
Embedded mitigation	• Environmental management and mitigation relevant to coastal processes, water and sediment quality of relevance to marine ecology, as presented in **Section 6.1**; • Adherence to the Detailed VMP (**Appendix G**), which includes marine biosecurity measures detailing how the risk of introduction and spread of INNS by the Proposed Works Offshore will be minimised and controlled; *[Principal Decommissioning Contractor to insert Detailed VMP in Appendix G].* • Adherence to the Fisheries Management and Mitigation Strategy (FMMS) (**Appendix I**) which sets out standard industry practice and legal requirements to mitigate any potential impacts to commercial fisheries and liaison measures with the sector throughout the Proposed Works Offshore; *[Principal Decommissioning Contractor to insert FMMS in Appendix I].* • Adherence to the Detailed Lighting and Marking Plan (LMP) (**Appendix J**), which indicates required lighting and marking throughout the Proposed Works offshore in line with relevant regulations and industry standards; *[Principal Decommissioning Contractor to insert Detailed LMP in Appendix J].* • Adherence to the Detailed Offshore WMP (**Appendix L**), which includes requirements for the identification, handling, and management of wastes arising from Proposed Works Offshore, ensuring compliance with standard industry practice and relevant waste legislation. *[Principal Decommissioning Contractor to insert Offshore WMP in Appendix L].*
Additional mitigation	Adherence to the Detailed Marine Mammal Mitigation Protocol (MMMP) (**Appendix H**), which includes procedures for pre-works assessment, monitoring, and mitigation in line with standard industry practice and legal requirements; *[Principal Decommissioning Contractor to insert Detailed MMMP in Appendix H].*
Monitoring	No additional monitoring beyond that defined as part of additional mitigation, i.e. marine mammal monitoring required in the Detailed MMMP.
Emergency measures	• Implementation of MPCP as required (**Appendix F**). • Implementation of ERCoP as required (**Appendix K**).

Environmental Management and Mitigation relevant to Marine Biodiversity	
	[Any other emergency measures considered to be outside the scope of the MPCP/ ERCoP to be identified by Principal Decommissioning Contractor if necessary].
Planning conditions, permits and permissions	• DaS Permit (**Appendix B**) *[Principal Decommissioning Contractor to attach DaS permit and associated conditions to Appendix B]* *[Principal Decommissioning Contractor to attach planning permit and associated planning conditions to Appendix B and summarise here those specifically relevant to marine biodiversity that are not covered by embedded / additional mitigation or monitoring measures listed above]* *[Principal Decommissioning Contractor to identify any other relevant consents, licences and permissions]*
Relevant stakeholders	• National Parks and Wildlife Service (NPWS) *[Others to be identified by Principal Decommissioning Contractor]*
Additional information	• **Appendix A** – Detailed Method Statements and RAMS • **Appendix B** – Permits and Permissions • **Appendix F** – MPCP • **Appendix G** – Detailed VMP • **Appendix H** – Detailed MMMP • **Appendix I** – FMMS • **Appendix J** – Detailed LMP • **Appendix K** – ERCoP • **Appendix L** – Detailed Offshore WMP *[Principal Decommissioning Contractor to identify any other additional information of relevance to the environmental management of Proposed Works Offshore in relation to marine biodiversity]*

6.3 Commercial Fisheries and Aquaculture

Environmental Management and Mitigation relevant to Commercial Fisheries and Aquaculture	
Potential impacts	• Temporary loss of grounds / restricted access within the work area; • Temporary loss of grounds / restricted access within the offshore export cable corridor work area; • Displacement of fishing activity; • Interference with fishing activity / navigational safety risks; and • Effects on commercially important fish and shellfish resources and seafood safety.
Embedded mitigation	• Environmental management and mitigation relevant to coastal processes, water and sediment quality of relevance to marine ecology, as presented in **Section 6.1**; • Environmental management and mitigation relevant to fish and shellfish ecology, as presented in **Section 0**; • Environmental management and mitigation relevant to shipping and navigation, as presented in **Section 6.4**; and • Adherence to the FMMS (**Appendix I**) which sets out standard industry practice and legal requirements to mitigate any potential impacts to commercial fisheries and liaison measures with the sector throughout the Proposed Works Offshore. Copies of the FMMS will be available aboard any vessel engaged in activities associated with the Proposed Works Offshore. *[Principal Decommissioning Contractor to insert FMMS in Appendix I].*
Additional mitigation	Fisheries liaison, activity planning and implementation of Cooperation Agreements in line with FMMS.
Monitoring	N/A
Emergency measures	• Implementation of MPCP as required (**Appendix F**). • Implementation of ERCoP as required (**Appendix K**). *[Any other emergency measures considered to be outside the scope of the MPCP/ ERCoP to be identified by Principal Decommissioning Contractor if necessary].*
Planning conditions, permits and permissions	*[Principal Decommissioning Contractor to attach planning permit and associated planning conditions to Appendix B and summarise here those specifically relevant to commercial fisheries and aquaculture that are not covered by embedded / additional mitigation or monitoring measures listed above]* *[Principal Decommissioning Contractor to identify any other relevant consents, licences and permissions]*
Relevant stakeholders	• Sea Fisheries Protection Authority (SFPA) *[Others to be identified by Principal Decommissioning Contractor]*
Additional information	• **Appendix A** – Detailed Method Statements and RAMS • **Appendix B** – Permits and Permissions • **Appendix F** – MPCP • **Appendix G** – Detailed VMP • **Appendix I** – FMMS • **Appendix K** – ERCoP

Environmental Management and Mitigation relevant to Commercial Fisheries and Aquaculture	
	• **Appendix L** – Detailed Offshore WMP *[Principal Decommissioning Contractor to identify any other additional information of relevance to the environmental management of Proposed Works Offshore in relation to commercial fisheries and aquaculture]*

6.4 Shipping and Navigation

Environmental Management and Mitigation relevant to Shipping and Navigation	
Potential impacts	• Port access restrictions; • Increased collision (vessel to vessel) risk; • Increased allision (vessel to structure) risk; and • Diminished emergency response capability.
Embedded mitigation	• Adherence to the Detailed VMP (**Appendix G**) that defines best-practice vessel management measures, including transit routes, speed restrictions, timing of activities, pollution prevention, and crew environmental awareness, to minimise disturbance, collision risk, and ecological harm; *[Principal Decommissioning Contractor to insert Detailed VMP in Appendix G].* • Adherence to the FMMS (**Appendix I**) which sets out standard industry practice and legal requirements to mitigate any potential impacts to commercial fisheries and liaison measures with the sector throughout the Proposed Works Offshore; *[Principal Decommissioning Contractor to insert FMMS in Appendix I].* • Adherence to the Detailed LMP (**Appendix J**), which indicates required lighting and marking throughout the Proposed Works offshore in line with relevant regulations and industry standards; *[Principal Decommissioning Contractor to insert Detailed LMP in Appendix J, including buoy coordinates].* • Disestablishment / variation of any existing Statutory Sanctions for aids to navigation (AtoN) in line with the approved Detailed LMP; • Vessels will possess all relevant classification certificates (including a class certificate verifying the provision of adequate safety equipment for the type of vessel and the number of on-board personnel), complying with statutory requirements under relevant international conventions, as implemented in Ireland, and national regulations, including but not limited to the following: – Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR Convention); – International Convention on the Prevention of Pollution from Ships (MARPOL Convention); – Oil Pollution Preparedness, Response and Co-Operation Convention (OPRC); and – International Convention on the Control of Harmful Anti-Fouling Systems on Ships or the International Convention on Ballast Water Management (which aims to stop the spread of potentially invasive aquatic species in ships' ballast water), among others; • Adherence to the ERCoP (**Appendix K**), which will outline procedures for coordinating safety incidents should these occur in relation to the Proposed Works Offshore, including responses for search and rescue (SAR), environmental emergencies, and medical emergencies at sea; *[Principal Decommissioning Contractor to insert ERCoP in Appendix K].* • Adherence to the Detailed Offshore WMP (**Appendix L**), which includes requirements for the identification, handling, and management of wastes arising from Proposed Works Offshore, ensuring compliance with standard industry practice and relevant waste legislation. *[Principal Decommissioning Contractor to insert Detailed Offshore WMP in Appendix L].*
Additional mitigation	N/A
Monitoring	No additional monitoring beyond that defined as part of Proposed Works Offshore (embedded mitigation), i.e. post-decommissioning monitoring.
Emergency measures	• Implementation of MPCP as required (Appendix F). • Implementation of ERCoP as required (Appendix K).

Environmental Management and Mitigation relevant to Shipping and Navigation	
	[Any other emergency measures considered to be outside the scope of the MPCP/ ERCoP to be identified by Principal Decommissioning Contractor if necessary].
Planning conditions, permits and permissions	• The Detailed VMP, Detailed LMP, ERCoP and any other relevant management plans shall be submitted to the IRCG for approval before any decommissioning works commence; • The final LMP shall be submitted to the Commissioners of Irish Lights (CIL), through Arklow Energy as the designated Local Lighthouse Authority (LLA), for notification and buoy deployment statutory consent before any decommissioning works commence; • Automatic Identification System (AIS) AtoN licence revocation shall be sought from the Commission for Communications Regulation (ComReg) as required; • Notices shall be submitted to the MSO before any decommissioning works commence; and • All vessels engaged in Proposed Works Offshore are required to hold connect certification as required by the Marine Survey Office (MSO) and international regulations, including International Regulations for Preventing Collisions at Sea (COLREGs) and the International Convention for the Safety of Life at Sea (SOLAS). *[Principal Decommissioning Contractor to attach the planning permit and associated planning conditions to Appendix B and summarise here those specifically relevant to shipping and navigation that are not covered by embedded / additional mitigation or monitoring measures listed above]* *[Principal Decommissioning Contractor to identify any other relevant consents, licences and permissions]*
Relevant stakeholders	• IRCG • MSO • CIL • ComReg *[Others to be identified by Principal Decommissioning Contractor]*
Additional information	• **Appendix A** – Detailed Method Statements and RAMS • **Appendix B** – Permits and Permissions • **Appendix F** – MPCP • **Appendix G** –Detailed VMP • **Appendix I** – Detailed MMMS • **Appendix J** – Detailed LMP • **Appendix K** - ERCoP • **Appendix L** – Detailed Offshore WMP *[Principal Decommissioning Contractor to identify any other additional information of relevance to the environmental management of Proposed Works Offshore in relation to shipping and navigation]*

6.5 Marine Archaeology

Environmental Management and Mitigation relevant to marine archaeology	
Potential impacts	• Sediment disturbance and deposition leading to effects on known and unknown heritage assets; • Direct impacts on historic shipwreck sites; and • Direct impacts on unknown heritage assets associated with buried palaeo landscapes.
Embedded mitigation	• Review of pre-decommissioning surveys by a maritime archaeologist, with findings communicated to the NMS; • Establishment of AEZs around each known shipwreck site and potential archaeological site, within which no Proposed Works Offshore should take place, unless this cannot be avoided, in which case, consent from the NMS will be required. Preliminary AEZs, as identified in the EIAR are presented in **Table 6.1**, **Figure 2** and **Figure 3**; *[Principal Decommissioning Contractor to replace in **Table 6.1, Figure 2** and **Figure 3** with final AEZs, as required]* • Development and adherence to Archaeology Management Plan (AMP), which will set out the principal protocols that will be put in place to ensure the protection of marine archaeology through the course of the Proposed Works Offshore. The AMP facilitates the recording and reporting of any archaeological material discovered during Proposed Works Offshore lifetime should this occur. The AMP addresses protocols for: – archaeological monitoring of works where the recovery of material to the surface is possible. – recording and reporting observations where the recovery of material to the surface is not possible and where the seabed has already been surveyed comprehensively and no archaeological features recorded. – archaeological inputs when a discovery of archaeological material is made. *[Principal Decommissioning Contractor to insert AMP in **Appendix M**].* • Archaeological monitoring of dredging works and/or inter-array / offshore export cable removal where risings are recovered to the surface, with any findings and monitoring report(s) shared with the NMS. Project maritime archaeologists will operate under licence from the DHLGH.
Additional mitigation	N/A
Monitoring	No additional monitoring beyond that defined as part of Proposed Works Offshore (embedded mitigation), i.e. archaeological monitoring of dredging works and/or inter-array / offshore export cable removal where risings are recovered to the surface.
Emergency measures	• Implementation of MPCP as required (**Appendix F**). • Implementation of ERCoP as required (**Appendix K**). *[Any other emergency measures considered to be outside the scope of the MPCP / ERCoP to be identified by Principal Decommissioning Contractor if necessary].*
Planning conditions, permits and permissions	• Consent from NMS if Proposed Works Offshore are required within established AEZs; • Project maritime archaeologists to operate under licence from the DHLGH. *[Principal Decommissioning Contractor to attach planning permit and associated planning conditions to Appendix B and summarise here those specifically relevant to marine archaeology that are not covered by embedded / additional mitigation or monitoring measures listed above]* *[Principal Decommissioning Contractor to identify any other relevant consents, licences and permissions]*
Relevant stakeholders	• NMS *[Others to be identified by Principal Decommissioning Contractor]*

Environmental Management and Mitigation relevant to marine archaeology	
Additional information	• **Appendix A** – Detailed Method Statements and RAMS • **Appendix B** – Permits and Permissions • **Appendix F** – MPCP • **Appendix K** – ERCoP • **Appendix M** – AMP *[Principal Decommissioning Contractor to identify any other additional information of relevance to the environmental management of Proposed Works Offshore in relation to marine archaeology]*

Table 6.1: Known archaeological sites within and adjacent to the Offshore Site Boundary

Reference	Type	Detail	UTM30N Northing	UTM30N Easting	Name	Within Offshore Site Boundary	AEZ radius	Distance to Offshore Site Boundary
W11475	Wreck	UKHO record	288198	5853863		×	50 m	160 m S of offshore export cable
W02650	Wreck	SSS contact	291160	5854218	Unknown	✓	50 m	Within, offshore export cable route
W02649	Wreck	SSS contact 8m long	290401	5854597	Unknown	×	50 m	100 m N of offshore export cable
W02648	Wreck	SSS contact 11m long	294672	5855713	Unknown	×	50 m	27 m N of offshore export cable, AEZ traverses offshore export cable corridor
W02647	Wreck	SSS contact 16m long	297511	5856580	Unknown	×	50 m	170 m N of offshore export cable
W18524	Wreck, possible	SSS contact	297539	5856662	Unknown	×	50 m	215 m N of offshore export cable
W02782	Wreck	Identified during cable lay	300418	5855376	Unknown	×	50 m	36 m SW of offshore export cable. AEZ traverses offshore export cable corridor
W02783	Wreck	SSS contact 16m long	300974	5854757	Unknown	×	80 m	80 m E of offshore export cable
W02781	Wreck	Identified during cable lay	300952	5854652	Unknown	✓	50 m	Within, offshore export cable route
LA_0958	Wreck	SSS contacts 13m long	300677	5854362	Unknown	×	50 m	330 m W of offshore export cable
LA_0855	Wreck	SSS contacts 22m long	300647	5853867	Unknown	×	50 m	400 m W of offshore export cable
GR_SSS_4457	Wreck	SSS contacts 20m long	300557	5853819	Unknown	×	50 m	490 m W of offshore export cable
R2_1035	Wreck	SSS contacts, debris & scour	300650.4	5853694.1	Unknown	×	50 m	385 m W of offshore export cable
LA_0738	Wreck	SSS contacts, debris & scour	300789.0	5853374.6	Unknown	×	50 m	330 m W of offshore export cable
03E1011:3	Flint scraper	Flint scraper	Not recorded	Not recorded	None	✓	0 m	Within, NE of WTG 5

Reference	Type	Detail	UTM30N Northing	UTM30N Easting	Name	Within Offshore Site Boundary	AEZ radius	Distance to Offshore Site Boundary
03E1011:4	Flint core	Flint core	Not recorded	Not recorded	None	✓	0 m	Within, NE of WTG 5
W02780	Wreck	SSS contact 16m long	301782	5853481	Unknown	×	50 m	350 m SE of WTG 5
W02775	Wreck	SSS contact 44m long	300997	5853014	Unknown	×	50 m	300 m SW of offshore export cable route and 330 m SW of WTG 4
W02776	Wreck	SSS contact mound & debris	300775	5852999	Unknown	×	50 m	480 m SW of offshore export cable route and 550 m SW of WTG 4
R2_1070	Wreck	SSS contact 17m long	300689.7	5853034.1	Unknown	×	50 m	540 m SW of offshore export cable and 640 m WSW of WTG 4
W02777	Wreck	SSS contact mound & debris	301024	5852907	Unknown	×	50 m	380 m SW of offshore export cable and 370 m SW of WTG 4
W02778	Wreck	SSS contact mound & debris	300683	5851621	Unknown	×	50 m	370 m NW of WTG 1
W02779	Wreck	SSS contact 5m long	301427	5851389	Unknown	×	50 m	540 m ENE of WTG 1
GR_SSS_0137	Wreck	SSS contact 20m long	300157.6	5851424	Unknown	×	50 m	560 m WNW of Met Mast
LA_0428	Wreck	SSS contact 68m long	300434	5850503	Unknown	×	50 m	680 m S of Met Mast but scour pocket and AEZ reach within 450 m of Mast

Orange highlight indicates sites located within or adjacent to the Offshore Site boundary considered to have an impact risk.

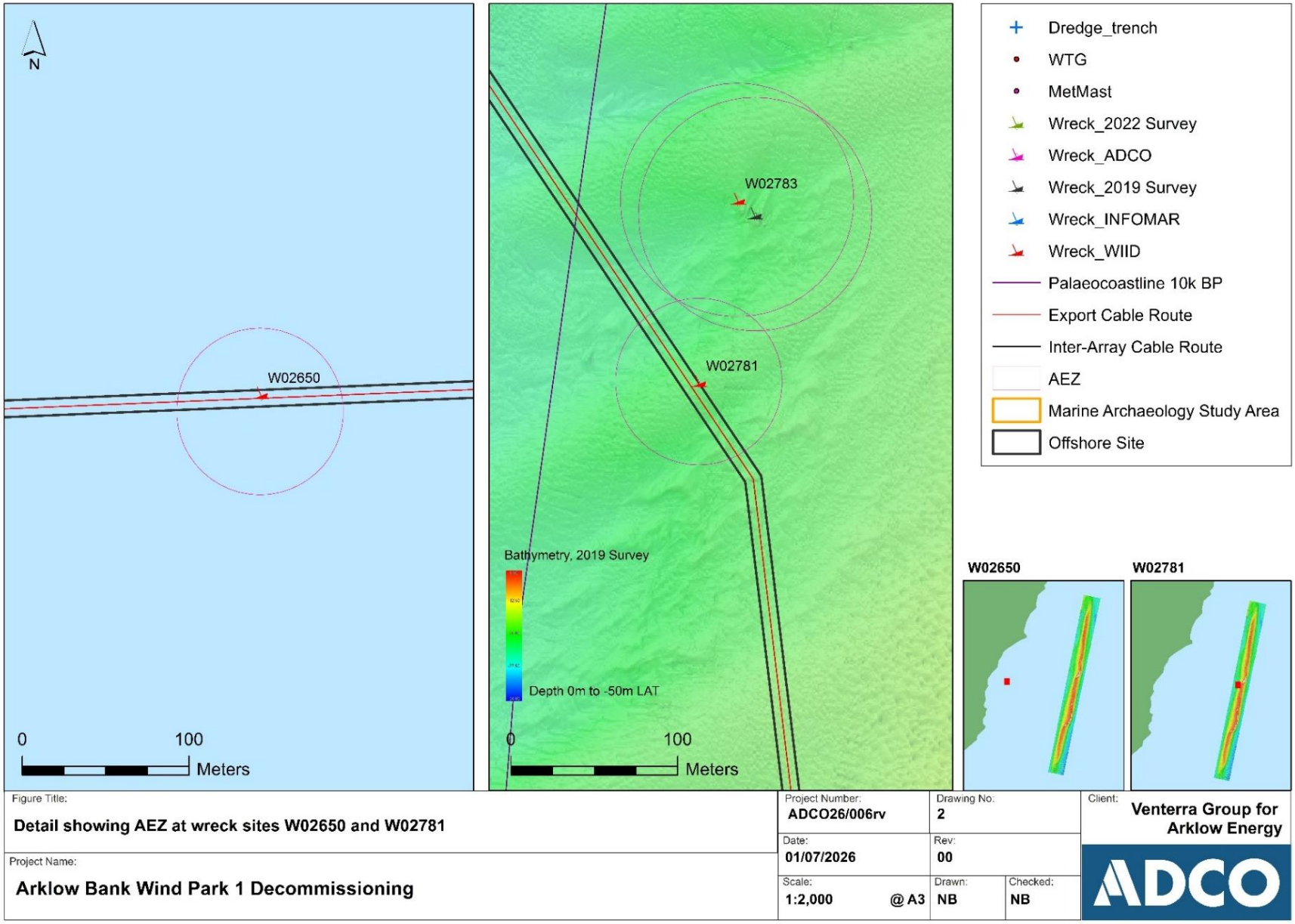


Figure 2: Detail showing AEZs at wreck sites W02650 and W2781

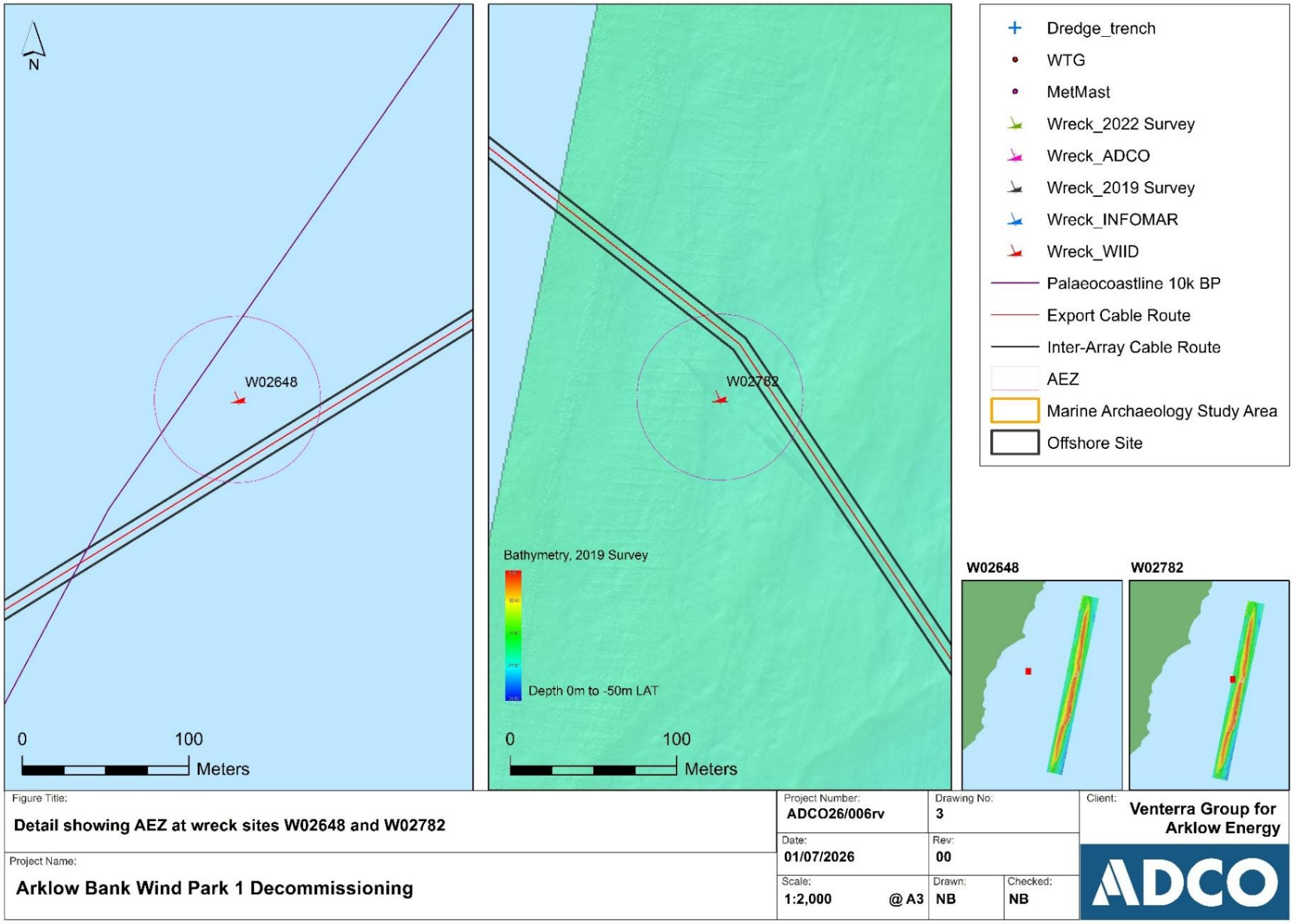


Figure 3: Detail showing AEZs at wreck sites W02648 and W2762

6.6 Airborne Noise

Environmental Management and Mitigation relevant to Airborne Noise	
Potential impacts	Increase of airborne noise levels at Noise Sensitive Receivers (NSRs) along the coastline
Embedded mitigation	Vessels will seek to avoid unnecessary running of engines and idling engines while anchored, in order to minimise noise disturbance. Vessels will shut down engines or maintain low engine power as soon as possible, see Detailed VMP (**Appendix G**). *[Principal Decommissioning Contractor to insert Detailed VMP in Appendix G].*
Additional mitigation	N/A
Monitoring	N/A
Emergency measures	• Implementation of MPCP as required (**Appendix F**). • Implementation of ERCoP as required (**Appendix K**). *[Any other emergency measures considered to be outside the scope of the MPCP / ERCoP to be identified by Principal Decommissioning Contractor if necessary].*
Planning conditions, permits and permissions	*[Principal Decommissioning Contractor to attach planning permit and associated conditions to Appendix B and summarise here those specifically relevant to airborne noise that are not covered by embedded / additional mitigation or monitoring measures listed above]* *[Principal Decommissioning Contractor to identify any other relevant consents, licences and permissions]*
Relevant stakeholders	*[To be identified by Principal Decommissioning Contractor]*
Additional information	• **Appendix A** – Detailed Method Statements and RAMS • **Appendix B** – Permits and Permissions • **Appendix F** – MPCP • **Appendix G** – Detailed VMP • **Appendix K** – ERCoP *[Principal Decommissioning Contractor to identify any other additional information of relevance to the environmental management of Proposed Works Offshore in relation to airborne noise]*

6.7 Marine Infrastructure and Other Users

Environmental Management and Mitigation relevant to Marine Infrastructure and Other Users	
Potential impacts	• Disturbance to other users, such as recreational boating and diving; • Damage to wastewater treatment plant (WWTP) outfall pipeline; and • Damage to offshore export cables associated with ABWP Phase II, should ABWP Phase II be consented and offshore export cables be installed before Proposed Works Offshore.
Embedded mitigation	• Environmental management and mitigation relevant to shipping and navigation, as presented in **Section 6.4;** • Ongoing engagement with SSE Renewables should ABWP Phase II infrastructure be already installed before commencement of Proposed Works Offshore and/or Proposed Works Offshore overlap with the construction of ABWP Phase II; and • Ongoing engagement with Uisce Éireann in the unlikely case that Proposed Works Offshore are anticipated to interfere with the WWTP outfall pipeline.
Additional mitigation	N/A
Monitoring	N/A
Emergency measures	• Implementation of MPCP as required (**Appendix F**). • Implementation of ERCoP as required (**Appendix K**). *[Any other emergency measures considered to be outside the scope of the MPCP/ ERCoP to be identified by Principal Decommissioning Contractor if necessary].*
Planning conditions, permits and permissions	*[Principal Decommissioning Contractor to attach planning permit and associated planning conditions to Appendix B and summarise here those specifically relevant to marine infrastructure and other users that are not covered by embedded / additional mitigation or monitoring measures listed above]* *[Principal Decommissioning Contractor to identify any other relevant consents, licences and permissions]*
Relevant stakeholders	• SSE Renewables • Uisce Éireann *[To be identified by Principal Decommissioning Contractor]*
Additional information	• **Appendix A** – Detailed Method Statements and RAMS • **Appendix B** – Permits and Permissions • **Appendix F** – MPCP • **Appendix G** – Detailed VMP • **Appendix J** – Detailed LMP • **Appendix K** – ERCoP *[Principal Decommissioning Contractor to identify any other additional information of relevance to the environmental management of Proposed Works Offshore in relation to marine infrastructure and other users]*

6.8 Air Quality and Climate Change

Environmental Management and Mitigation relevant to Air Quality and Climate Change	
Potential impacts	• Changes to air quality; and • Contribution to climate change.
Embedded mitigation	• Implementation of energy efficiency measures, including: – Regular maintenance of vessels, plant and equipment used during Proposed Works Offshore, ensuring all vessels, plant and equipment are subject to any legally required technical inspections that ensure efficient performance; – Appropriate maintenance of vessel engines in line with manufacturers requirements to ensure any emissions are minimised; and – Implementation of fuel efficiency measures throughout Proposed Works Offshore; • Adherence to the Detailed VMP (**Appendix G**), which defines best-practice vessel management measures, including transit routes, speed restrictions, timing of activities, pollution prevention, and crew environmental awareness, to minimise disturbance, collision risk, and ecological harm, including reference to MARPOL, Annex VI – Prevention of Air Pollution from Ships; and *[Principal Decommissioning Contractor to insert Detailed VMP in Appendix G].* • Vessels will possess all relevant classification certificates (including a class certificate verifying the provision of adequate safety equipment for the type of vessel and the number of on-board personnel), complying with statutory requirements under relevant international conventions, as implemented in Ireland, and national regulations, see environmental management and mitigation relevant to shipping and navigation, as presented in **Section 6.4**.
Additional mitigation	N/A
Monitoring	N/A
Emergency measures	• Implementation of MPCP as required (**Appendix F**). • Implementation of ERCoP as required (**Appendix K**). *[Any other emergency measures considered to be outside the scope of the MPCP/ ERCoP to be identified by Principal Decommissioning Contractor if necessary].*
Planning conditions, permits and permissions	*[Principal Decommissioning Contractor to attach planning permit and associated conditions to Appendix B and summarise here those specifically relevant to air quality and climate change that are not covered by embedded / additional mitigation or monitoring measures listed above]* *[Principal Decommissioning Contractor to identify any other relevant consents, licences and permissions]*
Relevant stakeholders	*[To be identified by Principal Decommissioning Contractor]*
Additional information	• **Appendix A** – Detailed Method Statements and RAMS • **Appendix B** – Permits and Permissions • **Appendix F** – MPCP • **Appendix G** – Detailed VMP • **Appendix K** – ERCoP *[Principal Decommissioning Contractor to identify any other additional information of relevance to the environmental management of Proposed Works Offshore in relation to air quality and climate change]*

6.9 Population and Human Health

Environmental Management and Mitigation relevant to Population and Human Health	
Potential impacts	• Economic impact (employment and expenditure); and • Impact to the tourism / recreation sector.
Embedded mitigation	• Appointment of a CLM during Proposed Works Offshore in order to act as the primary liaison between Arklow Energy / Principal Decommissioning Contractor and local communities, ensuring transparent communication, managing feedback, and coordinating consultation events (if any), see **Section 3**; • Adherence to the Detailed VMP (**Appendix G**) that defines best-practice vessel management measures, including transit routes, speed restrictions, timing of activities, pollution prevention, and crew environmental awareness, to minimise disturbance, collision risk, and ecological harm; and *[Principal Decommissioning Contractor to insert Detailed VMP in Appendix G].* • Adherence to the FMMS (**Appendix I**) which sets out standard industry practice and legal requirements to mitigate any potential impacts to commercial fisheries and liaison measures with the sector throughout the Proposed Works Offshore. *[Principal Decommissioning Contractor to insert FMMS in Appendix I].*
Additional mitigation	N/A
Monitoring	N/A
Emergency measures	• Implementation of MPCP as required (**Appendix F**). • Implementation of ERCoP as required (**Appendix K**). *[Any other emergency measures considered to be outside the scope of the MPCP/ ERCoP to be identified by Principal Decommissioning Contractor if necessary].*
Planning conditions, permits and permissions	*[Principal Decommissioning Contractor to attach planning permit and associated conditions to Appendix B and summarise here those specifically relevant to population and human health that are not covered by embedded / additional mitigation or monitoring measures listed above]* *[Principal Decommissioning Contractor to identify any other relevant consents, licences and permissions]*
Relevant stakeholders	*[To be identified by Principal Decommissioning Contractor]*
Additional information	• **Appendix A** – Detailed Method Statements and RAMS • **Appendix B** – Permits and Permissions • **Appendix F** – MPCP • **Appendix G** – Detailed VMP • **Appendix I** – FMMS • **Appendix K** – ERCoP *[Principal Decommissioning Contractor to identify any other additional information of relevance to the environmental management of Proposed Works Offshore in relation to population and human health]*

6.10 Seascape, Landscape and Visual Amenity

Environmental Management and Mitigation relevant to Seascape, Landscape and Visual Amenity	
Potential impacts	• Changes to seascape character; and • Visual impacts (Proposed Works Offshore).
Embedded mitigation	• Adherence to the Detailed LMP (**Appendix J**), which indicates required lighting and marking throughout the Proposed Works offshore in line with relevant regulations and industry standards. *[Principal Decommissioning Contractor to insert Detailed LMP in Appendix J].*
Additional mitigation	N/A
Monitoring	N/A
Emergency measures	• Implementation of MPCP as required (**Appendix F**). • Implementation of ERCoP as required (**Appendix K**). *[Any other emergency measures considered to be outside the scope of the MPCP/ ERCoP to be identified by Principal Decommissioning Contractor if necessary].*
Planning conditions, permits and permissions	*[Principal Decommissioning Contractor to attach planning permit and associated conditions to Appendix B and summarise here those specifically relevant to seascape, landscape and visual amenity that are not covered by embedded / additional mitigation or monitoring measures listed above]* *[Principal Decommissioning Contractor to identify any other relevant consents, licences and permissions]*
Relevant stakeholders	*[To be identified by Principal Decommissioning Contractor]*
Additional information	• **Appendix A** – Detailed Method Statements and RAMS • **Appendix B** – Permits and Permissions • **Appendix F** – MPCP • **Appendix J** – Detailed LMP • **Appendix K** – ERCoP *[Principal Decommissioning Contractor to identify any other additional information of relevance to the environmental management of Proposed Works Offshore in relation to seascape, landscape and visual amenity]*

6.11 Waste

Environmental Management and Mitigation relevant to Waste	
Potential impacts	Waste generation
Embedded mitigation	Adherence to the Detailed Offshore WMP (**Appendix L**), which includes requirements for the identification, handling, and management of wastes arising from Proposed Works Offshore, ensuring compliance with standard industry practice and relevant waste legislation. *[Principal Decommissioning Contractor to insert Detailed Offshore WMP in Appendix L].*
Additional mitigation	N/A
Monitoring	N/A
Emergency measures	• Implementation of MPCP as required (**Appendix F**). • Implementation of ERCoP as required (**Appendix K**). *[Any other emergency measures considered to be outside the scope of the MPCP / ERCoP to be identified by Principal Decommissioning Contractor if necessary].*
Planning conditions, permits and permissions	*[Principal Decommissioning Contractor to attach planning permit and associated conditions to Appendix B and summarise here those specifically relevant to offshore waste that are not covered by embedded / additional mitigation or monitoring measures listed above]* *[Principal Decommissioning Contractor to identify any other relevant consents, licences and permissions]*
Relevant stakeholders	• EPA *[Others to be identified by Principal Decommissioning Contractor]*
Additional information	• **Appendix A** – Detailed Method Statements and RAMS • **Appendix B** – Permits and Permissions • **Appendix F** – MPCP • **Appendix K** – ERCoP • **Appendix L** – Detailed Offshore WMP *[Principal Decommissioning Contractor to identify any other additional information of relevance to the environmental management of Proposed Works Offshore in relation to offshore waste]*

6.12 Civil and Military Aviation

Environmental Management and Mitigation relevant to Civil and Military Aviation	
Potential impacts	• Introduction of physical obstacles affecting air traffic; and • Interference with civil and military Primary Surveillance Radar (PSR) systems.
Embedded mitigation	• Adherence to the Detailed LMP (**Appendix J**), which indicates required lighting and marking throughout the Proposed Works offshore in line with relevant regulations and industry standards; *[Principal Decommissioning Contractor to insert Detailed LMP in Appendix J].* • Adherence to the Emergency Response Cooperation Plan (ERCoP) (**Appendix K**), which will outline procedures for coordinating safety incidents should these occur in relation to the Proposed Works Offshore, including responses for search and rescue (SAR), environmental emergencies, and medical emergencies at sea; *[Principal Decommissioning Contractor to insert ERCoP in Appendix K].*
Additional mitigation	N/A
Monitoring	N/A
Emergency measures	• Implementation of MPCP as required (**Appendix F**). • Implementation of ERCoP as required (**Appendix K**). *[Any other emergency measures considered to be outside the scope of the MPCP / ERCoP to be identified by Principal Decommissioning Contractor if necessary].*
Planning conditions, permits and permissions	*[Principal Decommissioning Contractor to attach planning permit and associated conditions to Appendix B and summarise here those specifically relevant to civil and military aviation that are not covered by embedded / additional mitigation or monitoring measures listed above]* *[Principal Decommissioning Contractor to identify any other relevant consents, licences and permissions]*
Relevant stakeholders	• EPA *[Others to be identified by Principal Decommissioning Contractor]*
Additional information	• **Appendix A** – Detailed Method Statements and RAMS • **Appendix B** – Permits and Permissions • **Appendix C** – MPCP • **Appendix G** – Detailed VMP • **Appendix J** – Detailed LMP • **Appendix K** – ERCoP *[Principal Decommissioning Contractor to identify any other additional information of relevance to the environmental management of Proposed Works Offshore in relation to civil and military aviation]*

7 REFERENCES

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APPENDIX A PLACEHOLDER FOR DETAILED METHOD STATEMENTS / RAMS

[Principal Decommissioning Contractor to include detailed method statements / RAMS]

APPENDIX B PERMITS AND PERMISSIONS

[Principal Decommissioning Contractor to update below table, attach associated permits, and keep regularly updated. Specific conditions and requirements shall be logged in Appendix D]

Reference	Relevant Authority	Description	Owner	Status / Validity
Planning permission	An Coimisiún Pleanála (ACP)	Development Consent (s.291 of Planning and Development Act) and compliance with all conditions attached to the permission.	Arklow Energy	To be obtained
Approval of Decommissioning and Reinstatement Plan (DRP)	Maritime Area Regulatory Authority (MARA)	DRP approval (Foreshore Sub Lease, Tripartite Deed Clause 4.1) required prior to commencement of Proposed Works Offshore.	Arklow Energy	To be obtained
Maritime Usage Licence (MUL)	MARA	Securing MUL, if deemed necessary by MARA, for surveys that do not fall within the scope of the Foreshore Sub-Lease	Arklow Energy	To be obtained
Dumping at Sea (DaS) permit	Environmental Protection Agency (EPA)	DaS permit (Foreshore and Dumping at Sea Acts 1996 – 2009): Required for any deliberate disposal of material in the maritime area, including seabed levelling and certain dredging works, and disposal of dredged or inert material during Proposed Works Offshore, including scour protection material dispersal.	Arklow Energy	To be obtained
Fisheries Notification	Dept. of Agriculture, Food and the Marine / Sea Fisheries Protection Authority (SFPA) / Fishing representative bodies	Fisheries notifications and engagement: Formal notification to the SFPA and fishing representative bodies of Proposed Works Offshore programme, vessel routes and any work areas through Fisheries Liaison Officer (FLO).	Principal Decommissioning Contractor	To be obtained
Approval of management plans	Irish Coast Guard (IRCG)	Approval of detailed and final VMP, LMP, ERCoP and any other relevant management plans required in advance of any Proposed Works Offshore commencing.	Principal Decommissioning Contractor	To be obtained
Buoy deployment consent Approval of proposed lighting	CIL	Approval of detailed and final LMP required in advance of buoy and lighting deployment.	Arklow Energy (as designated LLA)	To be obtained
Automated Identification System (AIS) Aids to Navigation (AtoN) Licence revocation	CIL / Commission for Communications Regulation (ComReg)	AIS AtoN revocation (Wireless Telegraph Act 1926) (as amended): Any existing Statutory Sanctions for AtoN must be formally disestablished or varied through a licence revocation 7 surrender as AtoN are removed during Proposed Works Offshore.	Arklow Energy	To be obtained
Vessel certifications	Marine Survey Office (MSO), Department of Transport	All vessels engaged in Proposed Works Offshore are required to hold requisite certifications as required by the MSO and international regulations before any Proposed Works Offshore commence	Principal Decommissioning Contractor and subcontractors	To be Obtained

Reference	Relevant Authority	Description	Owner	Status / Validity
Issuing of marine notices	MSO, Department of Transport	Marine Notice(s) must be issued to publicise decommissioning vessel operations and works at sea that may affect shipping, navigation, the fishing industry and recreational users.	Principal Decommissioning Contractor	To be Obtained
Underwater Archaeology Survey Licence (Excavation licence or detection device consent)	National Monuments Service (NMS), Dept. of Housing, Local Government and Heritage	Underwater Archaeology Survey Licence (National Monuments Act 1987, as amended): Required for use of detection devices to search for archaeological objects on or under the seabed during decommissioning surveys and removal works. If there is any impacted archaeology under water, both a Section 26 (National Monuments Act 1930) licence and Section 3 (National Monuments Act (amendment) 1987) licence may be required	Principal Decommissioning Contractor	To be obtained
Consent to work within AEZs	NMS	Any Proposed Works Offshore required within established AEZs will require prior consent from NMS	Principal Decommissioning Contractor	Pending
Third party consent	Third-party asset owners (cable/pipeline operators)	Crossing Agreement variations / terminations: Formal legal agreements with third-party infrastructure owners (cables, pipelines, telecoms) that were put in place during construction must be formally varied or closed out to reflect removal of CWP assets crossing or proximate to those third-party assets.	Arklow Energy / Legal	To be obtained
Generation licence surrender / energy regulatory notifications	Commission for Regulation of Utilities (CRU)	Upon cessation of generation, the CRU must be notified and the generation licence surrendered in accordance with the Electricity Regulation Act 1999 and relevant licence conditions.	Arklow Energy	Obtained

APPENDIX C PLACEHOLDER FOR ENVIRONMENTAL INCIDENT PROCEDURE

[Principal Decommissioning Contractor to include Environmental Incident Procedure]

APPENDIX D PLACEHOLDER FOR OFFSHORE ENVIRONMENTAL ACTION TRACKER

[Principal Decommissioning Contractor to include the Offshore Environmental Action Tracker]

APPENDIX E PLACEHOLDER FOR COMPLAINT PROTOCOL

[Principal Decommissioning Contractor to include Complaint Protocol]

APPENDIX F PLACEHOLDER FOR MARINE POLLUTION CONTINGENCY PLAN (MPCP)

[Principal Decommissioning Contractor to insert the MPCP for Proposed Works Offshore]

APPENDIX G PLACEHOLDER FOR DETAILED VESSEL MANAGEMENT PLAN (VMP)

*[Principal Decommissioning Contractor to include the VMP for Proposed Works Offshore, to be prepared in line with the Outline VMP presented as part of the planning application for Proposed Works (**Volume 3, Appendix 3.5: Outline Vessel Management Plan of the EIAR**)*

APPENDIX H PLACEHOLDER FOR DETAILED MARINE MAMMAL MITIGATION PROTOCOL (MMMP)

*[Principal Decommissioning Contractor to include the Detailed MMMP for Proposed Works Offshore, to be prepared in line with the MMMP presented as part of the planning application for Proposed Works (**Volume 3, Appendix 5.3: Marine Mammal Mitigation Protocol** of the EIAR)*

APPENDIX I PLACEHOLDER FOR FISHERIES MANAGEMENT AND MITIGATION STRATEGY (FMMS)

*[Principal Decommissioning Contractor to include the FMMS for Proposed Works Offshore presented as part of the planning application for Proposed Works (**Volume 3, Appendix 3.6: Fisheries Management and Mitigation Strategy** of the EIAR)*

APPENDIX J PLACEHOLDER FOR DETAILED LIGHTING AND MARKING PLAN (LMP)

*[Principal Decommissioning Contractor to include the Detailed LMP for Proposed Works Offshore, to be prepared in line with the Outline LMP presented as part of the planning application for Proposed Works (**Volume 3, Appendix 3.7: Outline Lighting and Marking Plan** of the EIAR)*

APPENDIX K PLACEHOLDER FOR EMERGENCY RESPONSE COOPERATION PLAN (ERCOP)

[Principal Decommissioning Contractor to insert the ERCoP for Proposed Works Offshore]

APPENDIX L PLACEHOLDER FOR DETAILED OFFSHORE WASTE MANAGEMENT PLAN (WMP)

*[Principal Decommissioning Contractor to include the Detailed Offshore WMP for Proposed Works Offshore, to be prepared in line with the Outline Offshore WMP presented as part of the planning application for Proposed Works (**Volume 3, Appendix 3.8: Outline Offshore WMP** of the EIAR]*

APPENDIX M ARCHAEOLOGY MANAGEMENT PLAN (AMP)

[Principal Decommissioning Contractor to include the AMP for Proposed Works Offshore]