ABWP Phase I Decommissioning

Water Framework Directive Assessment

Volume 3, Appendix 4.5



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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:

Term	Meaning
	• 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.
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).
Alternatives	A description of other options that have been considered during the conception of the Proposed Works (Environmental Protection Agency (EPA), 2022). Article 5(1) and Annex IV of the Environmental Impact Assessment (EIA) Directive) require "a description of the reasonable alternatives studied by the developer, which are relevant to the project and its specific characteristics, and an indication of the main reasons for the option chosen, including a comparison of the environmental effects" (EIA Directive 2011/92/EU (as amended)).
Appropriate Assessment (AA)	An assessment of the likely significant effects of a plan or project (in combination with other plans or projects) on the Natura 2000 site network, which in Ireland comprises Special Areas of Conservation (SACs) and Special Protection Areas (SPAs). These sites are protected by National and European law. The assessment is underpinned by the precautionary principle whereby a proposal cannot be granted permission if significant impacts are anticipated or cannot be ruled out. It entails the preparation of a Natura Impact Statement (NIS) for projects, or a Natura Impact Report (NIR) for plans under the Planning and Development (Amendment) Act 2010 (Office of the Planning Regulator, n.d.).
Baseline	A description of the relevant aspects of the current state of the environment (baseline scenario) (EIA Directive 2014/52/EU).
Bathing waters	All elements of surface water where the competent authority expects a large number of people to bathe and has not imposed a permanent bathing prohibition, or issued permanent advice against bathing (Bathing Water Directive 2006/7/EC).
Compensatory measures	Compensatory measures are measures required under Article 6(4) of the Habitats Directive that are designed to offset the adverse effects of a plan or project on a European site so as to ensure that the overall coherence of the Natura 2000 network is protected. They are distinct from mitigation measures and are only relevant where a project is permitted notwithstanding a negative appropriate assessment under the Article 6(4) derogation procedure (interpreted from the Habitats Directive (92/43/EEC)).
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 Coimisiún Pleanála. There are, however, a wide range of other competent authorities in respect of other consent regimes e.g. EPA (environmental licensing), 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) (MacCabe Durney Barnes (MDB), 2017).

Term	Meaning
Conservation objectives (CO)	A specified population size and distribution objective for a species, or a specified area and quality objective for a habitat, to ensure that a site contributes as best as possible to achieving favourable conservation status at national, biogeographical or European level (Article 1(k) of the Habitats Directive (92/43/EEC)).
Cumulative effect	The addition of many minor or insignificant effects, including effects of other projects, to create larger, more significant effects (EPA, 2022). Cumulative effects within this EIAR comprise those arising from the Proposed Works with other developments, i.e. plans and projects that are 'reasonably foreseeable' (Planning Inspectorate (PINS), 2024).
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).
Designated sites	Unless otherwise specified, the term 'designated' is used to refer to international sites, European sites and national sites (that are legally designated, or are going through the process of designation (MDB, 2027).
'Do-nothing' scenario	The situation or environment which would exist if the Proposed Works were not carried out. This scenario needs to take account of the continuation or change of current management regimes, as well as the continuation or change of trends currently evident in the environment (EPA, 2022). In this EIAR, the do-nothing scenario is described under "Future Baseline Conditions" in **Volume 2, Chapters 4 – 8**.
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.
Dynamic plume	The initial, high-concentration sediment plume formed at the point of discharge of dredged material, driven by density differences between sediment-laden water and ambient seawater.
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).
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.).
EIA Scoping	The scoping stage provides an opportunity for both developers and the Competent Authority to determine those key environmental impacts and issues of concern that are likely to be of the utmost importance to the Project proposal's decision-making and eliminates those that are less of a concern (European Commission (EC,) 2017).
EIA Scoping Presentation	Presentation scoping the likely environmental impacts of the Proposed Works to be further considered in the Environmental Impact Assessment Report (EIAR). The EIA Scoping Presentation is included in **Volume 3, Appendix 1.1** of the EIAR.
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 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.).
European site	Meaning assigned to it in the EC (Birds and Natural Habitats) Regulations 2011, which is also commonly known as a Natura 2000 site (Office of the Planning Regulator, n.d.).
Foreshore	The bed and shore, below the line of high water of ordinary or medium tides, of the sea and of every tidal river and tidal estuary and of every channel,

Term	Meaning
	creek, and bay of the sea or of any such river or estuary. Its outer limit is coterminous with the seaward limit of the territorial sea (Foreshore Act 1933 (as amended)), which is at a distance of 12 nm from the nearest point of the baseline or otherwise prescribed (Maritime Jurisdiction Act 2021 (as amended)).
Geographic Information System (GIS)	An array of technological tools for the management, analysis and display of spatial data that can provide evidence-based information to support biodiversity impact assessment and natural resource management (Office of the Planning Regulator, n.d.).
Good Environmental Status (GES)	Environmental status of marine waters where these provide ecologically diverse and dynamic oceans and seas which are clean, healthy and productive within their intrinsic conditions, and the use of the marine environment is at a level that is sustainable, thus safeguarding the potential for uses and activities by current and future generations (Marine Strategy Framework Directive (MSFD) (2008/56/EC)).
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.
In-combination effects	Incremental effects resulting from a combination of two or more plans and/or projects, an assessment requirement under the Habitats Directive (92/43/EEC). In-combination effects referred to in the Habitats Directive are considered to have a similar meaning to "cumulative effects" in the Environmental Impact Assessment (EIA) Directive (2011/92/EU (as amended)).
Indirect impact	Impacts on the environment, which are not a direct result of the Proposed Works, often produced away from (the Offshore / Onshore Site) or as a result of a complex pathway (EPA, 2022).
Intertidal	The area between the HWM and the Low Water Mark (LWM).
Imperative Reasons of Overriding Public Interest (IROPI)	Where a development is likely to have adverse effects upon the integrity of a European site, or where adverse effects cannot be ruled out, and in the absence of suitable alternative solutions, the competent authority may grant consent where a project is considered to be necessary for IROPI. The Habitats Directive does not define what is meant by IROPI. European Union (EU) guidance is helpful in making an IROPI determination. Irish statute narrowly defines IROPI in relation to AA determined effects on European sites that host a priority natural habitat type or priority species at S.177AA(4) of the Planning and Development Act, 2000 (MDB, 2017).
Landfall	The point where the offshore export cable transitions from the offshore marine environment to the onshore terrestrial environment.
Low Water Mark (LWM)	Level reached by the sea at low tide, measured as the mean of low tides.
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).
Maximum design scenario (MDS)	Represents 'realistic worst case' assessment parameters for each impact.
Mitigation measures	Measures to avoid, prevent or reduce impacts (EPA, 2022). Distinction is made between 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.).
Natura 2000 network	Network EU-wide network of nature conservation areas established under the 1992 Habitats Directive (and 1979 Birds Directive). The aim of the network is to assure the long-term survival of Europe's most valuable and threatened species and habitats. It includes Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) (Office of the Planning Regulator, n.d.).
Natura Impact Statement (NIS)	A statement, for the purposes of Article 4 of the Habitats Directive, of the implications of a proposed development, on its own or in combination with other plans or projects, for one or more than one European site, in view of the

Term	Meaning
	conservation objectives of the site or sites. This is prepared by the applicant (Office of the Planning Regulator, n.d.).
Nautical mile (nm)	Measurement used for distances at sea. 1nm equates to 1.852km. Marine jurisdiction is determined by reference to nautical miles (MDB, 2017).
Offshore site	Where Proposed Works Offshore are proposed to take place (i.e. 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 corridor connecting WTG T4 to the landfall near Arklow Harbour.
Onshore site	Where Proposed Works Onshore are proposed to take place (i.e. the Onshore Site comprises a fenced compound that hosts the onshore substation building and ancillary facilities; and one onshore cable connecting the landfall point from high water mark (HWM) to the onshore substation.
Pathway	The route by which a pressure arising from an activity acts on a receptor to produce an environmental impact.
Planning application	The application for consent submitted to An Coimisiún Pleanála (ACP) under s291 of the Planning and Development Act 2000, as amended.
Polyaromatic hydrocarbons (PAHs)	A class of chemicals that occur naturally in coal, crude oil, and gasoline.
Polychlorinated biphenyls (PCB)	They belong to a broad family of human-created organic chemicals known as chlorinated hydrocarbons. Although most were banned in 1986, they linger on in detectable levels in animals, fish and humans.
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).
Precautionary principle	The approach aims at ensuring a higher level of environmental protection through preventative decision-taking in the case of risk. The general principles of risk management remain applicable when the precautionary principle is invoked. These are proportionality between the measures taken and the chosen level of protection; non-discrimination in application of the measures; consistency of the measures with similar measures already taken in similar situations or using similar approaches; examination of the benefits and costs of action or lack of action; review of the measures in the light of scientific developments (MDB, 2017).
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).
Qualifying Interests	Habitats and species of interest, under the Birds and Habitats Directives, which establish the reason(s) for designating a site as an SAC or SPA. The qualifying interests are set out in the site synopsis prepared for the site by the National Parks and Wildlife Service of the Department of Arts, Heritage, Regional Rural and Gaeltacht Affairs (MDB, 2017).
Receptor	Any element in the environment which is subject to impacts (EPA, 2022).
Residual effect	The final predicted effect / impact remaining after mitigation (EPA, 2022).
River Basin Management Plan (RBMP)	RBMPs set the legally binding locally specific environmental objectives that underpin water regulation and planning activities.
Screening AA	A process undertaken by the competent authority to determine the need for an AA under the Habitats Directive (MDB, 2017).
Sensitivity	The potential of a receptor to be significantly affected (EPA, 2022).
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)
Statutory consultees	An organisation or authority stipulated by legislation to be notified by a competent authority or developer if an application is made which might give that organisation a cause for concern. These are specified in the applicable

Term	Meaning
	legislation, e.g. Article 28 of the Planning and Development Regulations, 2001 (as amended) (EPA, 2022).
Surface water	Surface waters include rivers, lakes, transitional and coastal waters.
The WFD Assessment Area	For each environmental aspect, the baseline environment will be characterised, and the potential environmental impacts will be described within an aspect-specific Assessment Area. Specific Assessment Areas are defined for each aspect and are based on the maximum spatial extent across which potential impacts of the Proposed Works may be experienced by the relevant receptors (i.e. Zone of Influence (ZoI).
Transboundary effects	Potential environmental effects that may occur across jurisdictional boundaries (MDB, 2017).
Zone Of Influence (ZoI)	The potential geographic area that could be affected by the implementation of the Proposed Works. The ZoI should be regarded as having flexible boundaries which may change during the assessment. The boundaries should be determined having regard to the source-pathway-target risk assessment concept.

Acronyms

Acronym	Meaning
ABWP	Arklow Bank Wind Park
ACP	An Coimisiún Pleanála
CEA	Cumulative Effect Assessment
DCEE	Department of Climate, Energy and the Environment
DEMP	Decommissioning Environmental Management Plan
DHLGH	Department of Housing, Local Government and Heritage
DWPA	Drinking Water Protected Area
EA	Environment Agency
EIA	Environmental Impact Assessment
EIAR	Environmental Impact Assessment Report
EPA	Environmental Protection Agency
EQSD	Environmental Quality Standards Directive (EQSD)
EU	European Union
FMMS	Fisheries Management and Mitigation Strategy
IEMA	Institute of Environmental Management and Assessment
INNS	Invasive Non-Native Species
IROPI	Imperative Reasons of Overriding Public Interest
MAC	Maritime Area Consents
MARA	Maritime Area Regulatory Authority
MARPOL	International Maritime Organisation and International Convention for the Prevention of Pollution from Ships
MDS	Maximum Design Scenario
MHWS	Mean High Water Springs
MLWS	Mean Low Water Springs
MMMP	Marine Mammal Mitigation Protocol
MSFD	Marine Strategy Framework Directive
O&M	Operations and Maintenance

Acronym	Meaning
OMF	Operations and Maintenance Facility
OSP	Offshore Substation Platform
OSPAR Convention	Convention for the Protection of the Marine Environment of the North-East Atlantic
PAHs	Polyaromatic Hydrocarbons
PCBs	Polychlorinated Biphenyls
RBMP	River Basin Management Plan
ROV	Remotely Operated Vehicle
SAC	Special Area of Conservation
SPA	Special Protection Area
SSC	Suspended Sediment Concentrations
UK	United Kingdom
UWWTD	Urban Wastewater Treatment Directive
VMP	Vessel Management Plan
WFD	Water Framework Directive
WMP	Waste Management Plan
WTG	Wind Turbine Generators
ZoI	Zone of Influence

Units

Unit	Meaning
%	Percent
km	Kilometre
km^2	Square kilometre
m	Metre
mg/kg	Milligram per kilogram
nm	Nautical mile

Executive Summary

This Water Framework Directive (WFD) Assessment provides an assessment under the WFD (Council Directive 2000/60/EC) for the decommissioning of 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). For the purposes of this WFD Assessment, a specific WFD Assessment Area is established, to identify the Proposed Works activities considered relevant to the assessment.

The Proposed Works Onshore are excluded from the WFD Assessment on the basis that Proposed Works Onshore activities will be temporary in nature and limited in extent and will not physically interact with either surface or groundwater bodies and will not increase flood risk. The WFD Assessment Area therefore covers the area up to 1 nm from Mean High Water Springs (MHWS), in addition to a 2 km extension to the north, south and east of the Proposed Works Offshore.

The purpose of the WFD is to establish a framework for protecting and enhancing ecological status of inland surface waters, coastal waters, and groundwater, in line with River Basin Management Plans (RBMP). The assessment specifically addresses the potential impacts of the Proposed Works Offshore on designated WFD waters through a three-stage approach: screening, scoping, and impact assessment.

Key stages of the assessment are as follows:

- Screening Stage: Identifies water bodies, within the Irish RBMP, that have the potential to be impacted by the Proposed Works Offshore include one coastal (Southwestern Irish Sea – Brittas Bay) and one transitional (Avoca Estuary) surface water body. Onshore water bodies, including both groundwater and surface water, were screened out of the WFD Assessment on the basis that the Proposed Works Onshore would not result in effects, and the Proposed Works Offshore would not adversely affect onshore water bodies;
- Scoping Stage: Determines the potential impacts to receptors such as hydromorphology, biology (habitats and fish), water quality, WFD protected areas, and invasive non-native species. The assessment scoped in habitats into the impact assessment stage for the Avoca Estuary water body; and
- Impact Assessment Stage: Evaluates effects from the Proposed Works Offshore. The findings indicated no significant impacts to habitats due to short-lived and localised impacts. The embedded mitigation measures were found to manage potential risks effectively.

1 Introduction

1.1 Overview

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

1.1.1.2 This Water Framework Directive (WFD) assessment presents the background, methodology and assessment to determine if any specific components or activities associated with the Proposed Works will compromise WFD objectives, cause a deterioration of the status of surface water or groundwater bodies and/or jeopardise the achievement of good water status.

1.1.1.3 This WFD assessment is informed by the following documents contained in the Environmental Impact Assessment Report (EIAR):

- **Volume 2, Chapter 1: Introduction;**
- **Volume 2, Chapter 3: Proposed Works Description;**
- **Volume 2, Chapter 4: Coastal Processes, Water and Sediment Quality;**
- **Volume 2, Chapter 5: Marine Biodiversity;**
- **Volume 3, Appendix 3.4: Outline Offshore Decommissioning Environmental Management Plan;**
- **Volume 3, Appendix 3.5: Outline Vessel Management Plan;** and
- **Volume 3, Appendix 4.2: Coastal Processes Modelling.**

1.1.1.4 As per **Volume 2, Chapter 1: Introduction** of the EIAR, the Onshore Site is located within 30 m of the Avoca Estuary to its south. The Onshore Site Boundary extends into the sea to the north, where the onshore cable transitions into the offshore export cable at landfall (at high water mark (HWM). The Onshore Site is protected from coastal flooding risks by an existing breakwater. The Proposed Works Onshore will be temporary in nature and limited in extent and will not physically interact with either surface or groundwater bodies and will not increase flood risk.

1.1.1.5 An Onshore Decommissioning Environmental Management Plan (DEMP) (see outline version in **Volume 3, Appendix 3.1** of the EIAR) will be implemented during Proposed Works Onshore, including appropriate storage of materials, control of potential contaminants and management of site activities. Therefore, significant effects on surface water, groundwater quality and flood risk are not anticipated, and these environmental aspects have been scoped out of the EIAR (see **Volume 2, Chapter 1** of the EIAR). Accordingly, the scope of this WFD assessment covers the Proposed Works Offshore only.

1.2 Legislation and Policy

1.2.1.1 The WFD (EU Water Framework Directive 2000/60/EC, *establishing a framework for Community action in the field of water policy*) was published in December 2000 and is transposed into Irish law by the European Communities (Water Policy) Regulations 2003 (S.I. No. 722 of 2003). The Water Policy Regulations outline the water protection and water management measures required to maintain high status of waters where it exists, prevent any deterioration in existing water status and achieve at least 'Good' status for all waters.

1.2.1.2 The WFD requires that management plans be prepared on a river basin basis and specifies a structured method for developing these plans. The third-cycle Irish River Basin Management Plan (RMBP) 'The Water Action Plan 2024' was issued by the Department of Housing, Local Government and Heritage (DHLGH) in 2024 (DHPLG, 2024), covering the period of 2022 to 2027. It outlines the status of water bodies and measures required to achieve 'good' status.

1.2.1.3 Article 4.1 of the WFD specifies the environmental objectives and obliges for Member States, including Ireland, which must be complied with. The primary objectives of Article 4.1 of the WFD are to:

- Prevent deterioration of the status of both surface and groundwater bodies (Article 4(1)(a)(i), (b)(i)); and

- Achieve good status for both surface and groundwater bodies, except for artificial and heavily modified bodies of surface water (Article 4(1)(a)(ii), (b)(ii)).

1.2.1.4 As such, the WFD requires all natural water bodies to achieve both Good Chemical Status and Good Ecological Status and all artificial and heavily modified water bodies to achieve Good Ecological Potential. There is also a requirement to view the water environment holistically, integrating water quality, quantity and physical habitat with ecological indicators.

1.2.1.5 At present, there is no published Irish guidance on undertaking WFD assessments, however, various guidance documents from other jurisdictions are available. Therefore, the United Kingdom (UK) guidance 'Clearing the Waters for All' has been applied (Environment Agency (EA), 2023) in the absence of Irish-specific guidance. The UK guidance has been chosen due to its close geographic proximity, and similarities in legislative setting in the context of similar projects.

1.2.1.6 The UK guidance concentrates on estuarine and coastal waters and sets out general principles for staged approach to assessment. This approach is considered appropriate to use for other water bodies such as rivers, lakes and groundwater.

1.3 Proposed Works Offshore Activities

1.3.1.1 Only certain project activities associated with the Proposed Works Offshore are considered relevant to the WFD Assessment.

1.3.1.2 The WFD Assessment Area is defined in Section 2, and shown in **Figure 1**. Activities that lie within the WFD Assessment Area are as follows:

Pre-Commencement Surveys

- Pre-commencement surveys will be undertaken within six weeks in advance of the commencement of Proposed Works Offshore to confirm bathymetric conditions, infrastructure condition, cable burial depth or exposure and the presence of any obstructions or hazards.
- Surveys may include multi-beam echosounder, side scan sonar, sub-bottom profiling, magnetometer surveys and remote operated vehicle or diver inspections where required.
- A maximum number of two vessels trips will be undertaken in any given day (one vessel trip equals one way between the designated port and the Offshore Site or vice versa)

Offshore Export Cable Removal

- Full removal of offshore export cables using suitable cable recovery methods.
- Cable removal method will be selected to minimise seabed disturbance while allowing the cables to be safely and completely removed. Recovery methods may include controlled pulling/lifting of exposed cable sections, localised seabed clearance or de-burial where cables are buried and cutting the cable into manageable sections for recovery and transport. The final cable removal method would be defined by the appointed contractor and would take account of cable condition, burial depth, seabed conditions, proximity to sensitive environmental features, safety requirements, vessel access, technical feasibility, and the need to minimise environmental disturbance.
- It is considered reasonable to assume that the offshore export cable is located up to 3 m below the seabed level at the time of decommissioning, with some sections potentially exposed.
- The offshore export cable will be fully removed in accordance with the following sequence:
  - Unburial of cable with a running method using a grapnel run or similar, pulled out using clamps and a cable puller;
  - The offshore export cable will be severed by grapple and shears in the vicinity of the landfall, left exposed on the seabed until this is pulled from land; and
  - Cables will be cut underwater or on vessel deck with shears into manageable sections (generally between 7 m and 9 m) and deposited in containers for subsequent transfer to port.
- The expected duration of the full offshore export cable removal is 35 days; however, the offshore cable removal within the WFD Assessment Area is only approximately 25% of the full offshore export cable length. Therefore, a conservative estimate of the duration of the offshore cable removal within the WFD Assessment Area is 10 days.

Vessel Movements

- Vessel movements associated with specialist marine plants and vessels such as jack-up barge and support vessels may be required depending on the final method selected. Temporary work areas and marine safety controls would be established to allow the Proposed Works Offshore to proceed safely.

Post-Decommissioning Surveys

- Post-decommissioning surveys will be conducted within three months of completion of all decommissioning works. These will verify the resulting seabed condition within the Offshore Site and inform the Close Out Report that will be prepared following the completion of Proposed Works Offshore to provide a final "as-left" account of the Proposed Works Offshore, demonstrating compliance with the planning application and approved Decommissioning and Reinstatement Plan (DRP).
- Surveys may include multi-beam echosounder, side scan sonar, sub-bottom profiling, magnetometer surveys and remote operated vehicle.
- A maximum number of two vessels trips will be undertaken in any given day (one vessel trip equals one way between the designated port and the Offshore Site or vice versa)

1.3.1.3 The Proposed Works Offshore are expected to be programmed during favourable marine weather windows, with the final programme depending on seabed conditions, weather, vessel availability, permits and contractor methodology.

1.3.1.4 Other elements of the Proposed Works, as set out in **Volume 2, Chapter 3** of the EIAR**,** are not within the scope of this WFD Assessment and have not been assessed further.

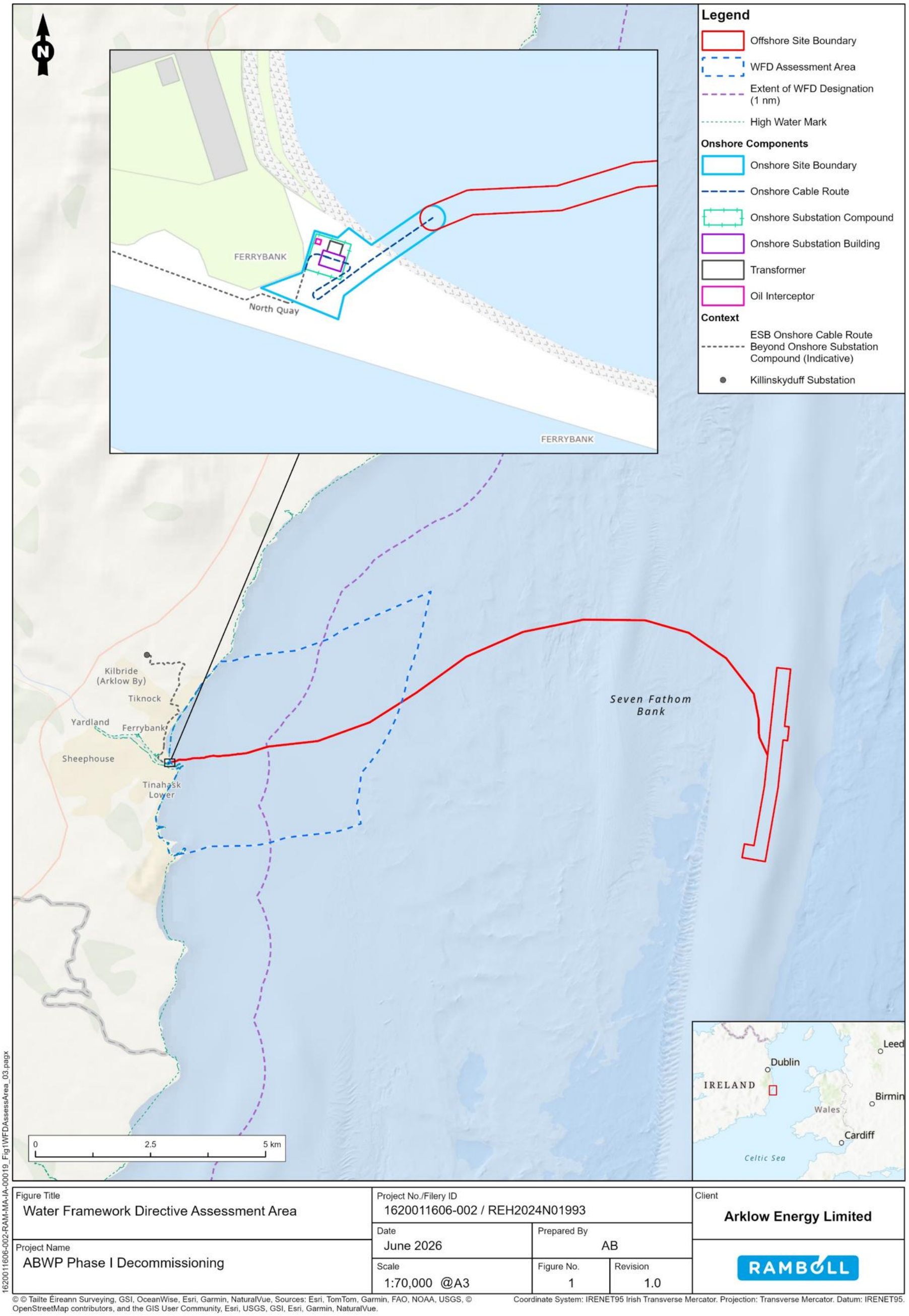


Figure 1: Water Framework Directive Assessment Area

1.4 Embedded Mitigation

1.4.1.1 **Table 1.1** presents the embedded mitigation considered as an integral part of Proposed Works Offshore.

Table 1.1 Embedded mitigation relevant to the WFD implemented as part of the Proposed Works Offshore

Embedded mitigation	Description
Development and adherence to the Detailed Offshore Decommissioning Environmental Management Plan (DEMP)	**Volume 3, Appendix 3.4: Outline Offshore DEMP** presents standard industry practice and legal requirements for environmental management and mitigation that will be implemented as part of the Proposed Works Offshore. The outline Offshore DEMP also summarises any required additional mitigation identified in relevant EIAR chapters, serving as a framework for the future decommissioning contractor(s) to develop in detail before decommissioning works commence.
Development and adherence to the Detailed Vessel Management Plan (VMP)	**Volume 3, Appendix 3.5: Outline VMP** 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.
Development and adherence to the Fisheries Management and Mitigation Strategy (FMMS)	**Volume 3, Appendix 3.6: FMMS** 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. The FMMS also distinguishes any additional mitigation identified in relevant EIAR chapters.
Development and adherence to the Detailed Offshore Waste Management Plan (WMP)	**Volume 3, Appendix 3.8: Outline Offshore WMP** establishes a clear framework for the identification, handling, and management of wastes arising from Proposed Works Offshore, ensuring compliance with standard industry practice and relevant waste legislation, and the principles of the waste hierarchy.

2 Assessment Approach

2.1 Introduction

2.1.1.1 In accordance with the 'Clearing the waters for All' guidance (EA, 2023), this WFD assessment follows a three-stage approach.

2.2 Stage 1 Screening

2.2.1.1 Stage 1 screening allows for the identification of relevant activities associated with the Proposed Works Offshore that are to be assessed, and determination of which WFD water bodies could potentially be affected through identification of a Zone of Influence (ZoI), presented as the WFD Assessment Area in **Figure 1**. This step also provides detail regarding the baseline environment present in the water bodies screened into the assessment and provides a rationale for any water bodies screened out of the assessment.

2.3 Stage 2 WFD Scoping

2.3.1.1 For each water body identified in Stage 1, an assessment is carried out to identify the effects and potential risks to quality elements from all activities associated with the Proposed Works Offshore. The assessment takes into consideration embedded mitigation and good practice measures. This stage identifies the WFD parameters which need to be considered to inform WFD Impact Assessment (Stage 3).

2.4 Stage 3 WFD Impact Assessment

2.4.1.1 Depending on the outcome of Stage 2, a detailed assessment of the water bodies and activities carried forward is undertaken. This assessment involves:

- The consideration of the baseline conditions of the concerned water bodies;
- An assessment of the risk of deterioration (either in isolation or cumulatively);
- A description of any additional mitigation that is required (if applicable) and how it will be implemented; and
- An explanation of any positive contributions to the RBMP objectives proposed, and how they will be delivered.

2.4.1.2 The EA guidance defines deterioration as "when the status of a quality element reduces by one class". For example, biological quality elements from good to moderate status. If a quality element is already at the lowest status, then any reduction in its condition counts as deterioration. Whilst deterioration within a status class does not contravene the requirements of the Directive, action should be taken to limit in class deterioration as far as practicable.

2.4.1.3 The 'Clearing the waters for All' (EA, 2023) guidance details the receptors to be addressed in WFD assessments, including:

- Hydromorphology;
- Biology: habitats;
- Biology: fish;
- Water quality;
- Protected areas; and
- Invasive Non-Native Species (INNS).

2.4.1.4 This WFD Assessment draws on outputs from the relevant EIAR chapters listed in **Section 1.1** and presents information to allow conclusions on WFD compliance to be made with respect to WFD objectives and the 'Clearing the waters for All' receptors (EA, 2023). Therefore, this WFD Assessment has been undertaken to assess the potential impact of the Proposed Works on WFD transitional and coastal receptors out to 1 nm from the coast in Ireland.

2.4.1.5 It is considered unlikely that the Proposed Works Offshore will adversely impact freshwater WFD water bodies or onshore groundwater bodies due to the parallel tidal flow as shown in the numerical modelling in **Volume 3, Appendix 4.2: Coastal Processes Modelling.** This tidal flow will carry any suspended sediment parallel to the coastline, therefore there will be no interaction with the freshwater water bodies. The WFD Assessment Area therefore only considers coastal and transitional water bodies.

2.4.1.6 The Proposed Works Offshore that are taking place within the WFD Assessment Area set out in **Section 1.3** are considered to disturb the seabed much less than those proposed further offshore (for example dredging and scour protection removal within the Sub Lease Area) and would take place within shallower waters. Scientific studies indicate that, in shallow coastal waters, sediment plumes are often more spatially limited than in deeper offshore environments. This is due to reduced settling distances, strong tidal and wave induced vertical mixing, and rapid interaction with the seabed, which promote dilution and re deposition close to the source (e.g. Helmons *et al.,* 2022; Yang *et al.,* 2016).

2.4.1.7 As such, a WFD Assessment Area has been applied which comprises of the area up to 1 nm from Mean High Water Springs (MHWS), in addition to a 2 km extension to the north, south and east of the Proposed Works Offshore (**Figure 1**). This 2 km distance is generally considered to be a suitable distance to allow for an assessment of effects to occur and is in accordance with the 'Clearing Waters for All' guidance (EA, 2023).

3 Water Framework Directive Assessment

3.1 Stage 1 - Water Framework Directive Screening

3.1.1 Surface Water Screening

3.1.1.1 This stage of the assessment identifies which WFD water bodies are present within the WFD Assessment Area, screening these water bodies into the further stages of the assessment due to their potential to deteriorate as a result of relevant project activities associated with the Proposed Works Offshore. Water bodies that are within the WFD Assessment Area but are not considered to have the potential to be impacted, due to lack of direct or indirect connectivity, or due to distance, are screened out at this stage.

3.1.1.2 The WFD Assessment Area has been defined as per **Section 2**. Therefore, the water bodies that fall within the WFD Assessment Area and their characteristics (EPA, 2026), and thus taken through to Stage 2, are presented in **Table 3.1.**

3.1.1.3 As discussed in **Section 2.4** it is considered unlikely that the Proposed Works Offshore will adversely impact freshwater WFD water bodies or onshore groundwater bodies due to the parallel tidal flow, therefore only the WFD Assessment Area only considers coastal and transitional water bodies.

3.1.2 Surface Water Environment

3.1.2.1 The WFD Assessment Area is located within two designated WFD waterbodies: the Southwestern Irish Sea – Brittas Bay water body and the Avoca Estuary water body, as shown on **Figure 2.**

3.1.2.2 The Offshore Site is located within the Southwestern Irish Sea water body – Brittas Bay, a coastal water body with a high ecological and chemical status. The Avoca Estuary water body is located inland of the Offshore Site, overlapping the WFD Assessment Area to the west.

3.1.2.3 The Avoca Estuary flows eastwards into the Southwestern Irish Sea water body and has a moderate ecological status and a failing to achieve good chemical status (Environmental Protection Agency (EPA), 2026).

3.1.2.4 The WFD Assessment Area is not underlain by a groundwater body and is therefore not considered further in relation to the offshore environmental conditions.

3.1.2.5 Designated surface water bodies that fall within the WFD Assessment Area are presented in **Figure 2.**

Table 3.1 Characteristics of the water bodies within the WFD Assessment Area

Characteristics	Southwestern Irish Sea – Brittas Bay	Avoca Estuary
Water body ID	IE_EA_140_0000	IE_EA_150_0100
River basin district name	Eastern	Eastern
Water body type	Coastal	Transitional
Water body total area (km^2)	N/A	0.17
Overall water body status	High	Moderate
Ecological status	High	Moderate
Chemical status	High	Failing to achieve good
Risk status*	Not at risk	At risk
Target water body status and deadline	Good, 2027	Good, 2027
Heavily modified water body?	N/A	No
Phytoplankton status	Not assigned	High
History of harmful algae	Information not available	Information not available
*water body risk of not achieving their water quality objectives		

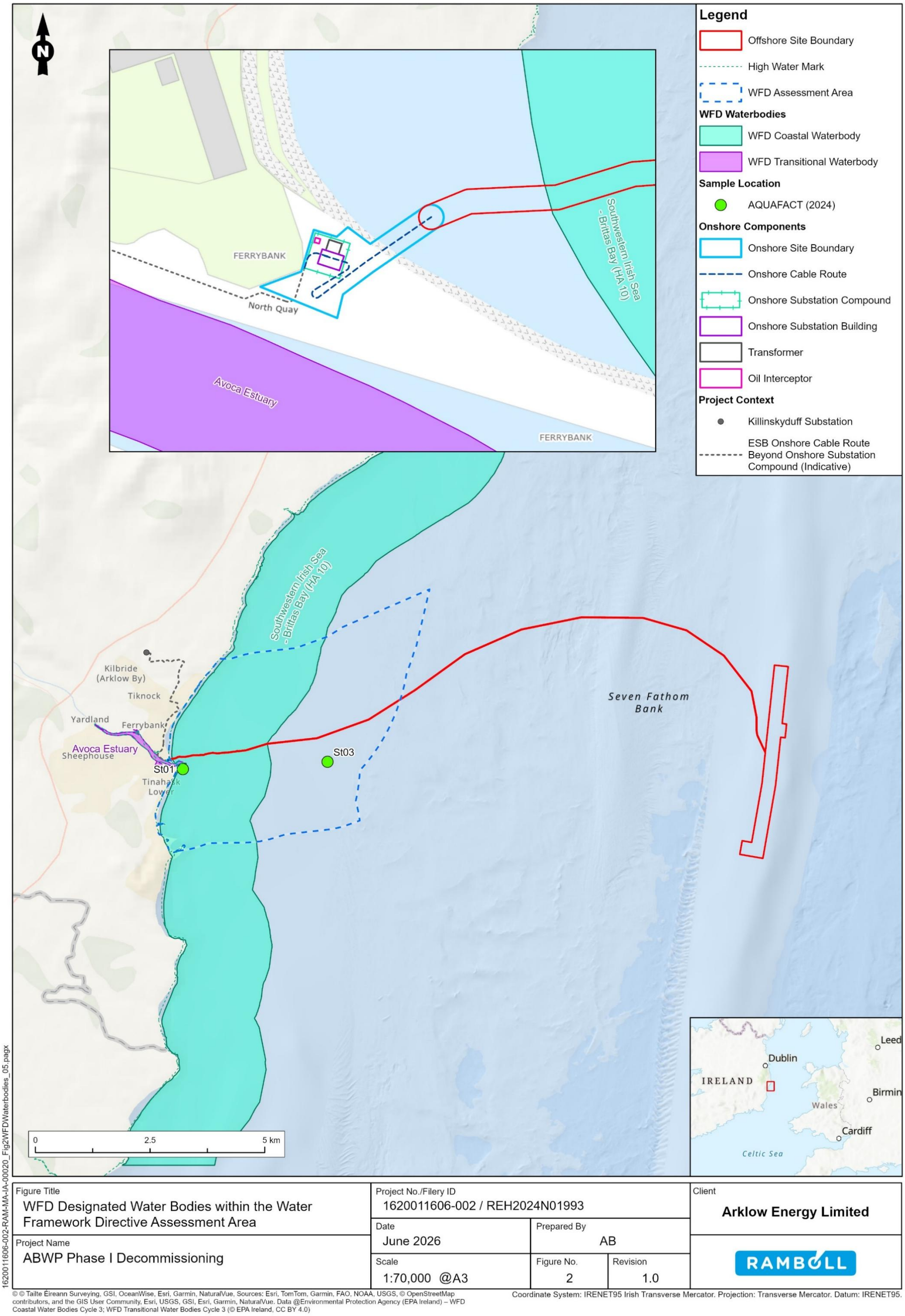


Figure 2: Designated surface water bodies within the WFD Assessment Area

3.2 Stage 2 - Water Framework Directive Scoping

3.2.1 Stage 2 Introduction

3.2.1.1 A scoping assessment is required to determine which receptors may be impacted by the Proposed Works Offshore and therefore need to be assessed in Stage 3, the impact assessment. These receptors are defined in accordance with the EA guidance (EA, 2023).

3.2.2 Surface Water Scoping

Hydromorphology

3.2.2.1 Hydromorphology is the physical characteristics of estuaries, coasts, and watercourses. Hydromorphological quality elements include the size, shape and structure of the water body, and the flow and quantity of water and sediment. Impacts on hydromorphology include changes to morphological conditions and tidal patterns.

3.2.2.2 **Table 3.2** provides specific risk information relating to hydromorphology to determine which water bodies and potential risks should be taken forward to Stage 3.

Table 3.2: Specific risk information: hydromorphology

Potential risk	Details	
WFD water bodies	**Southwestern Irish Sea – Brittas Bay**	**Avoca Estuary**
Assess further if the activity could impact on the hydromorphology (for example morphology or tidal patterns) of a water body of high status	**Volume 2, Chapter 4: Coastal Processes, Water and Sediment Quality** concludes that there is no significant risk associated with hydromorphology from the Proposed Works Offshore. The Southwestern Irish Sea – Brittas Bay water body is of high overall status. However, the removal of offshore export cables within the WFD Assessment Area are not considered to be of a scale or extent that would impact hydromorphology or tidal patterns. Project-specific modelling is presented in **Volume 3, Appendix 4.2: Coastal Processes Modelling.** Modelling indicates a maximum settling time of approximately 17 minutes and a corresponding horizontal dispersion distance of approximately 2 km under peak tidal conditions, considering the finest sediment fraction (clay and silt). Considering the dominant sediment grain size, fine to medium sand, a settling duration of 24 seconds and a corresponding horizontal dispersion distance of approximately 48 m is anticipated. In addition, offshore export cable removal will involve shallow seabed contact and is not anticipated to involve excavation or sustained release of sediment. **Scoped out of Stage 3.**	The Avoca Estuary water body is not of high status, therefore consideration of impacts to the hydromorphology of the Avoca Estuary are not required under the Clearing for all EA Guidance (EA, 2023). **Scoped out of Stage 3.**
Assess further if the activity could significantly impact the hydromorphology of any water body		Due to the parallel properties of the tidal flow, impacts to the hydromorphology of the Avoca Estuary is not anticipated as direct interaction with the water body will not occur. Disturbed sediment from offshore export cable removal activities is anticipated to be predominantly carried in a north-south direction, modelling has been undertaken which presents a worst-case fine sediment dispersion zone of 2 km, however this sediment size represents less than 1% of seabed composition, therefore sediment dispersion associated with offshore export cable removal activities are considered more likely to occur within 48 m of the activity, as shown in the numerical modelling presented in **Volume 3, Appendix 4.2.** Therefore, the hydromorphology of the Avoca Estuary water body will not be significantly impacted by the Proposed Works Offshore. **Scoped out of Stage 3.**
Asses further if the activity is in a water body that is heavily modified for the same use as your activity	Information regarding the heavily modified status of the Southwestern Irish Sea - Brittas Bay water body is not available. **Scoped out of Stage 3.**	The Avoca Estuary water body is not heavily modified. **Scoped out of Stage 3.**

3.2.2.3 It has been concluded that hydromorphoplogy can be **scoped out** of the Stage 3 Impact Assessment for the Southwestern Irish Sea – Brittas Bay and the Avoca Estuary water bodies.

Water Quality

3.2.2.4 As discussed in full in **Volume 2, Chapter 4: Coastal Processes, Water and Sediment Quality**, surveys have historically been undertaken at the Offshore Site associated with ABWP Phase I and ABWP Phase II. These include:

- Ramboll Environ UK Ltd (2016) for Arklow Bank Dumping at Sea Permit Application, involving sediment sampling and chemical analysis of sediments from three locations in the Array Area of Arklow Bank;
- AQUAFACT (2025) sediment sampling for Arklow Bank Wind Park Phase II - Environmental Impact Assessment Technical Reports, involving grab samples collected across the ABWP Phase II Array Area, Cable Corridor and Working Area; and
- Ramboll (2025) Monopile Sediment Sampling where sediment samples were obtained from one of the monopiles (T1) within the Offshore Site in 2025.

3.2.2.5 These surveys assessed sediment quality across the wider area. Of these, only the AQUAFACT (2025) survey is relevant to the WFD Assessment as the samples obtained from the other surveys were obtained from the Array Area of Arklow Bank, located approximately 10 km from the coast. Of the AQUAFACT (2025) survey locations, only two locations are relevant to the WFD Assessment Area (St01 and St03), as shown on **Figure 2.**

3.2.2.6 In order to assess the significance of the concentrations of contaminants recorded in the marine sediment, the measured concentrations have been compared to sediment quality thresholds outlined in 'Guidelines for the Assessment of Dredge Material for Disposal in Irish Waters' (Cronin et al, 2006) and the 'Addendum to 2006 Guidelines for the Assessment of Dredged Material in Irish Waters' (Marine Institute, 2019), hereafter referred to as the Irish Action Levels.

3.2.2.7 Pertinent details of the sediment quality encountered at these locations are as follows:

- No organotin compounds, Polychlorinated Biphenyls (PCBs), Organochlorine Pesticides, or Polyaromatic Hydrocarbons (PAHs) were detected above the laboratory limit of detection;
- Heavy metals were detected in both locations, with no exceedances of the Irish Action Levels recorded with the exception of arsenic;
- A slight exceedance of the lower Irish Action Level (Action Level 1) for arsenic was recorded in St03 a (a concentration of 22.4 mg/kg recorded in exceedance of the Action Level value of 20 mg/kg), well below the Action Level 2 value of 70 mg/kg; and
- Low levels of hydrocarbons were detected, with no concentrations above the Irish Action Levels.

3.2.2.8 Contaminant concentrations in the sediment located within the WFD Assessment Area are therefore not considered to be significant.

3.2.2.9 In accordance with WFD guidance, water quality relates to physical conditions (such as water clarity, temperature, salinity and oxygen levels), biological conditions (such as nutrients or microbial patterns, phytoplankton status and harmful algae) and chemical conditions (such as the presence of chemicals on the Environmental Quality Standards Directive (EQSD) (European Parliament and Council, 2008) or above the Action Levels defined by the Marine Institute (2019) and Cronin et al., (2006) (the Irish Action Levels).

3.2.2.10 **Table 3.3** provides specific risk information relating to water quality to determine which water bodies and potential risks should be taken forward to Stage 3.

Table 3.3: Specific risk information: water quality

Potential risk	Details	
WFD water bodies	**Southwestern Irish Sea – Brittas Bay**	**Avoca Estuary**
Assess further if the activity could affect water clarity, temperature, salinity, oxygen levels, nutrients or microbial patterns continuously for longer than a spring neap tidal cycle (about 14 days)	There is the potential that water clarity will be affected by the relevant Proposed Works Offshore, however the anticipated timeframe for these activities that have the potential to affect water clarity, temperature, salinity, oxygen, nutrients or microbial patterns taking place in the WFD Assessment Area is conservatively calculated as 10 days. The numerical modelling presented in **Volume 3, Appendix 4.2: Coastal Processes**	

Potential risk	Details	
	Modelling shows that for offshore export cable activities, any increase in suspended sediment concentrations (SSC) would be short-lived. Calculations indicate a maximum settling time of approximately 17 minutes and a corresponding horizontal dispersion distance of approximately 2 km under peak tidal conditions, for the finest sediment fraction (clay and silt). Considering the dominant sediment grain size within the WFD Assessment Area, fine to medium sand, a settling duration of 24 seconds and a corresponding horizontal dispersion distance of approximately 48 m is anticipated and considered to be more likely. In addition, offshore export cable removal activities will involve shallow seabed contact and is not anticipated to involve excavation or sustained release of sediment Therefore, any impacts to water clarity, temperature, salinity, oxygen levels, nutrients or microbial patterns would not last longer than a spring neap tidal cycle. **Scoped out of Stage 3**.	
Assess further if the activity is in a water body with a phytoplankton status of moderate, poor or bad	Phytoplankton status is not determined. **Scoped out of Stage 3.**	Phytoplankton status is high. **Scoped out of Stage 3.**
Assess further if the activity is in a water body with a history of harmful algae	History of harmful algae is not determined for either water body. **Scoped out of Stage 3.**	
Assess further if the activity uses or releases chemicals (e.g. through sediment disturbance or building works) and the chemicals are on the EQSD list Assess further if the activity disturbs sediment with contaminants above Irish Action Level 1*	**Volume 2, Chapter 4: Coastal Processes, Water and Sediment Quality** concluded that there is no significant risk associated with sediment-bound contaminants from the Proposed Works Offshore. Surveys have historically been undertaken at the Offshore Site associated with ABWP Phase I and ABWP Phase II. These surveys encountered low levels of contamination in sediment samples obtained, with only minor exceedances of the lower threshold value recorded for arsenic (AQUAFACT, 2025). Therefore, the release of sediment bound contaminants into the water column as a result of increased SSC during offshore export cable activities are modelled as short-lived and localised in extent, as presented in **Volume 3, Appendix 4.2.** In addition, fine sediment represents less than 1% of sediment composition, further reducing the risk of sediment bound contaminant dispersion. There is a risk of accidental release of pollution during the relevant Proposed Works Offshore from sources including vessels/vehicles and equipment/machinery and other chemicals employed. However, the risk is managed by the implementation of measures set out in standard post-consent plans (e.g. Offshore DEMP; and Offshore VMP). These plans will include planning for control and management of accidental spills and address potential contaminant releases and include key emergency contact details. These plans will also set out industry good practice and OSPAR, International Maritime Organisation and International Convention for the Prevention of Pollution from Ships (MARPOL) guidelines for preventing pollution at sea. The likelihood of an accidental spill occurring is very low following the implementation of these plans and in the unlikely event that such an event did occur, the magnitude will be minimised through measures included in the Detailed Offshore DEMP (see outline version in **Volume 3, Appendix 3.4** for Outline Offshore DEMP). **Scoped out of Stage 3**	
Does the activity release chemicals on the EQSD list **and** has a mixing zone (e.g. a discharge pipeline or outfall)?	There are no point discharges or outfalls associated with the Proposed Works Offshore. **Scoped out of Stage 3.**	
*Irish Action Levels as defined by the Marine Institute (2019) and Cronin et al (2006).		

3.2.2.11 It has been concluded that water quality elements can be **scoped out** of the Stage 3 WFD Impact Assessment for the Southwestern Irish Sea – Brittas Bay and the Avoca Estuary water bodies.

Biology

3.2.2.12 The following sections outline the potential impacts to biology that may arise from the relevant Proposed Works Offshore. Impacts to biology are split into two sections in accordance with WFD guidance: habitats (relating to potential impacts to higher and lower sensitivity habitats) and fish (relating to any impacts to fish within estuaries, fish behaviour and the potential for fish entrainment and impingement).

Habitats

3.2.2.13 **Table 3.4** provides specific risk information relating to biology (habitats) to determine which water bodies and potential risks should be taken forward to Stage 3.

Table 3.4: Specific risk information: habitats

**Note that a footprint may also be a temperature or sediment plume, therefore the footprint is considered to be the WFD* Assessment

Potential risk	Details	
WFD water bodies	**Southwestern Irish Sea – Brittas Bay**	**Avoca Estuary**
Assess further if the footprint* of activity is 0.5 km^2 or larger	Based on a dispersion zone of 48 m resulting from offshore export cable removal activities, as presented in **Volume 3, Appendix 4.2: Coastal Processes Modelling Report,** the footprint of the cable route within the WFD water body (from MHWS to 1 nm) has been calculated at 0.088 km^2, which is less than 0.5 km^2. On this basis no further assessment is required for either WFD water body. **Scoped out of Stage 3.**	
Assess further if the footprint* of activity is 1 % or more of the water body's area	The total area of the water body is not available. **N/A**	The footprint of the activity is more than 1% of the water body's area. **Scoped into Stage 3.**

Area.

3.2.2.14 It has been concluded that habitats are **scoped in** to the Stage 3 WFD Impact Assessment for Avoca Estuary water body.

Fish

3.2.2.15 **Table 3.5** provides specific risk information relating to biology (fish) to determine which water bodies and potential risks should be taken forward to Stage 3.

Table 3.5: Specific risk information: fish

Potential risk	Details	
WFD water bodies	**Southwestern Irish Sea – Brittas Bay**	**Avoca Estuary**
Assess further if the activity is in an estuary and could affect fish in the estuary, outside the estuary but could delay or prevent fish entering it or could affect fish migrating through the estuary	Various fish species are present in the western Irish Sea surrounding the WFD Assessment Area, see **Volume 2, Chapter 5: Marine Biodiversity** for more detail. Species considered relevant to this WFD Assessment include (Ellis *et al*., 2012; Coull *et al*., 1998; MMO, 2026; Parker-Humphreys, 2004; APEM, 2026a; APEM, 2026b; Department of Climate, Energy and the Environment, 2021; MMO, 2026): • cod (*Gadus morhua*) • mackerel (*Scomber scombrus*) • horse mackerel (*Trachurus trachurus*) • herring (*Clupea harengus*) • whiting *(Merlangius merlangus)* • lemon sole *(Microstomus kitt)* • sprat (Sprattus sprattus) • haddock *(Melanogrammus aeglefinus)* • dab *(Limanda limanda)* • plaice *(Pleuronectes platessa)* • sole *(Solea solea)* • sandeel *(Ammodytes tobianus)*	
Assess further if the activity could impact on normal fish behaviour like movement, migration or spawning (e.g. creating a physical barrier, noise, chemical change or a change in depth or flow)		

Potential risk	Details
	• sand goby (Pomatoschistus minutus) • Elasmobranch species • topeshark *(Galeorhinus galeus)* • spurdog (Squalus acanthia) • lesser spotted dogfish (Scyliorhinus canicula) • nursehound (Scyliorhinus stellaris) • starry smooth hound (*Mustelus asterias)* • blue mussel *(Mytilus edulis*) • whelk (*Buccinum undatum)* • brown crab *(Cancer pagurus)* • European lobster *(Hommarus gammarus)* • Norway lobster (*Nephrops norvegicus)* Diadromous species such as Atlantic Salmon, brown trout, and Lamprey, migrating between the Avoca Estuary and the Irish Sea are expected to be present within the WFD Assessment Area. See **Volume 2, Chapter 5: Marine Biodiversity** for more detail. These species migrate through estuarine environments, where SSC are naturally elevated, and therefore exhibit an inherent tolerance to increased SSC. The modelling presented in **Volume 3, Appendix 4.2: Coastal Processes Modelling** shows that that limited increased SSC are anticipated for the Proposed Works Offshore taking place within the WFD Assessment Area. For offshore export cable removal activities such as grapnel run activity a maximum settling time of approximately 17 minutes and a corresponding horizontal dispersion distance of approximately 2 km under peak tidal conditions, considering the finest sediment fraction (clay and silt). Considering the dominant sediment grain size, fine to medium sand, a settling duration of 24 seconds and a corresponding horizontal dispersion distance of approximately 48 m is anticipated. Therefore impacts to fish resulting from increased SSC and associated deposition are anticipated to be limited and short-lived. As presented in: **Volume 2, Chapter 4: Coastal Processes, Water and Sediment Quality,** elevated levels of contaminants were identified in intertidal habitats near Arklow Harbour. Fish do not use intertidal habitats therefore they are not expected to be affected, with any contaminants expected to be diluted and dispersed quickly before reaching subtidal waters. The Proposed Works at the landfall are expected to be highly temporary and short-term and elevated levels of contaminants will be short-lived due to the anticipated rapid dispersion and dilution. Project-specific underwater noise modelling has been undertaken in **Appendix 5.2 Underwater Sound Modelling Report** which indicated that a small degree of disturbance to fish and shellfish is possible during the Proposed Works Offshore. However, the majority of these activities are non-impulsive, and will only cause disturbance within the immediate vicinity of the vessels/instrumentation. While impulsive activities may cause disturbance at a greater range (up to 320 m), exposures at this level would be short-term and highly localised. **Volume 2, Chapter 5: Marine Biodiversity** concluded that there is no significant risk to fish posed from the Proposed Works Offshore, which could prevent migratory patterns or normal fish behaviour such as movement, migration or spawning. Therefore, significant impacts to fish behaviour within the WFD Assessment Area are not anticipated. **Scoped out of Stage 3.**
Assess further if the activity could cause entrainment or impingement of fish	No intakes or outfalls are proposed as part of the Proposed Works Offshore and therefore entrainment and impingement of fish is not anticipated. **Scoped out of Stage 3.**

3.2.2.16 It has been concluded that fish can be **scoped out** of the Stage 3 WFD Impact Assessment for the Southwestern Irish Sea – Brittas Bay and Avoca Estuary water bodies.

Water Framework Directive Protected Areas

3.2.2.17 In Ireland, WFD protected areas maintained by the EPA, include Drinking Water Protected Areas (DWPA), Bathing Waters, Nutrient Sensitive Areas (Nitrate Vulnerable Zones and sites listed under the Urban Wastewater Treatment Directive (UWWTD), Shellfish Waters, and Natura 2000 Water-Dependent Sites.

3.2.2.18 Natura 2000 Water-Dependent Sites include protected habitats and species reliant on water, designated under the Habitats Directive and the Birds Directive. This includes Special Areas of Conservation (SAC) and Special Protection Areas (SPA) (Natura 2000, 2024).

3.2.2.19 There are no WFD protected areas within the WFD Assessment Area, as shown in **Figure 3**.

3.2.2.20 **Table 3.6** provides specific risk information relating to WFD protected areas to determine which water bodies and potential risks should be taken forward to Stage 3.

Table 3.6: Specific risk information: WFD protected areas

Potential risk	Details
Assess further if any WFD protected areas fall within the WFD Assessment Area	There are no WFD protected areas that fall within the WFD Assessment Area. **Scoped out of Stage 3**.

3.2.2.21 Therefore, it has been concluded that protected sites can be **scoped out** of the Stage 3 WFD Impact Assessment.

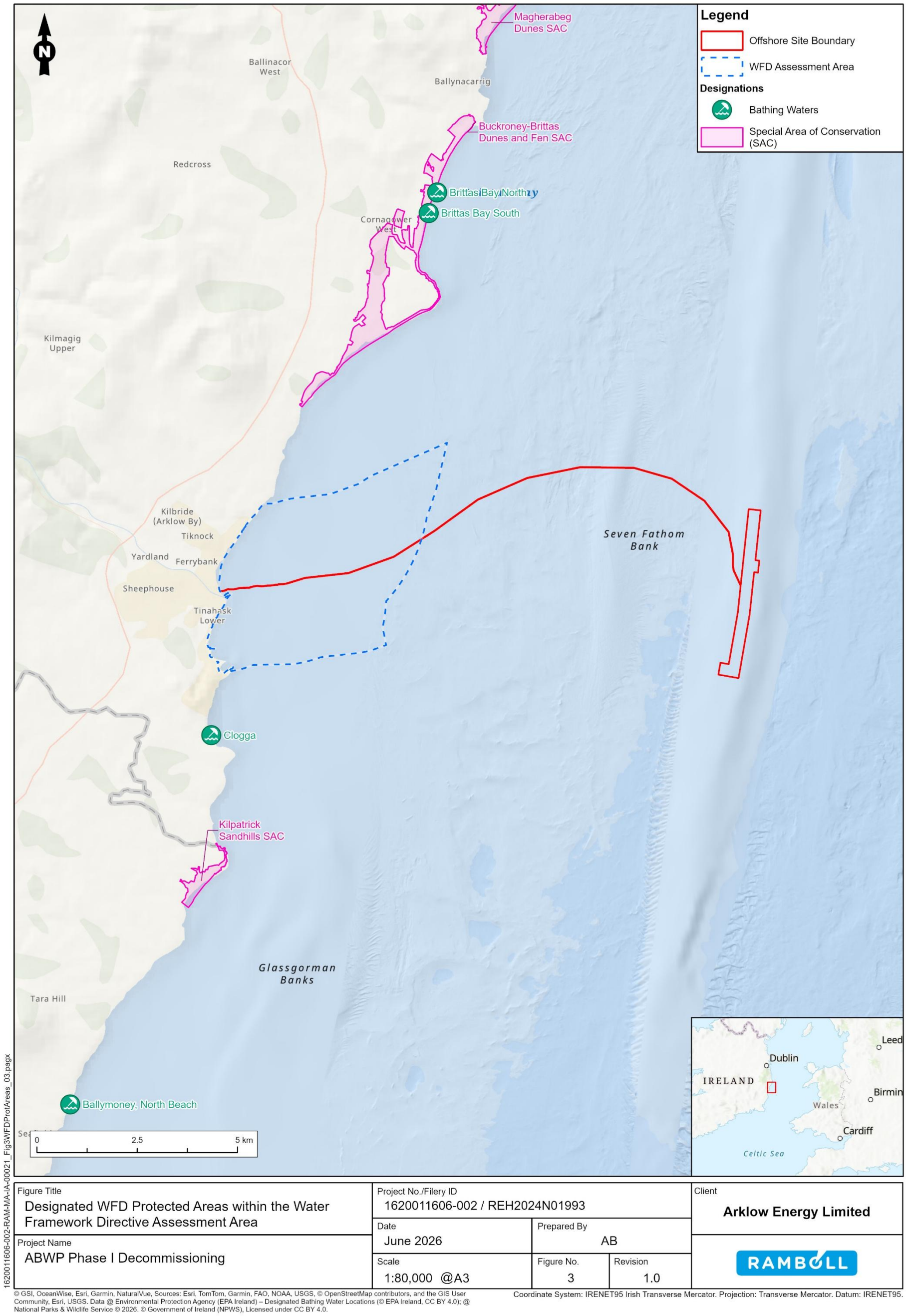


Figure 3: Designated WFD Protected Areas within the WFD Assessment Area

Invasive Non-native Species

3.2.2.22 Non-native species are plants and animals that have been introduced through human activity. Some of these spread rapidly and cause harm to the environment, which are INNS. This section assesses whether the Proposed Works Offshore may pose a potential risk associated with the introduction of INNS.

3.2.2.23 **Table 3.7** provides specific risk information relating to INNS to determine which water bodies and potential risks should be taken forward to Stage 3.

Table 3.7: Specific risk information: INNS

Potential risk	Details	
WFD water bodies	Southwestern Irish Sea – Brittas Bay	Avoca Estuary
Introduce or spread INNS	**Volume 2, Chapter 5: Marine Biodiversity** indicates that the spread and introduction of INNS would not be significantly impacted by the Proposed Works Offshore. No INNS were recorded in the 2004 to 2011 monitoring surveys (ABWP Phase I), or the 2011 and 2025 benthic survey reports (ABWP Phase II) (SSE Renewables 2025). Additionally, no INNS were identified in the Remotely Operated Vehicle (ROV) footage from 2025 (Alpha Marine, 2026. During the Proposed Works Offshore, up to nine different vessels may be required for pre-decommissioning survey works, dredging works, decommissioning of infrastructure and transportation of decommissioned infrastructure to port. It is anticipated that decommissioning vessels will mobilise from a European port, with a transit duration of approximately 15 days. All infrastructure will be transported by vessel to an Irish port (Rosslare, Waterford or Dublin), which shall be confirmed once the decommissioning contractor is appointed. There is expected to be a maximum of 353 vessel trips between port and the Offshore Site, considering a single campaign. All project vessels will adhere to the IMO Guidelines for the control and management of ships' biofouling to minimise the transfer of invasive aquatic species (Biofouling Guidelines 2011), and the International Convention for the Control and Management of Ships' Ballast Water and Sediments, 2004 (BWM Convention). Furthermore, as part of **Volume 3, Appendix 3.5: Outline Vessel Management Plan** control measures will be implemented to minimise INNS. With the adherence to the embedded mitigation measures**,** an increased risk of introduction and spread of INNS is not considered to be significant. **Scoped out of Stage 3.**	

3.2.2.24 Therefore, it has been concluded that the potential risk of INNS has been **scoped out** of the Stage 3 WFD Impact Assessment for the Southwestern Irish Sea – Brittas Bay and Avoca Estuary water bodies.

Scoping summary

3.2.2.25 Where no risk to potential receptors is identified at scoping stage, impact assessment does not need to be completed.

3.2.2.26 The potential risks to receptors that the scoping exercise concludes need to be taken forward for WFD Impact Assessment are presented in **Table 3.8**.

Table 3.8 Potential risks scoped into Stage 3 Impact Assessment

Receptor	WFD water body	Reason for scoping into the WFD Impact Assessment
Habitats	Avoca Estuary	The footprint of the proposed works offshore is 1 % or more of the water body's area, to take into account the modelled material dispersion zone associated with offshore export cable removal within the WFD Assessment Area.

3.3 Stage 3 - Water Framework Directive Impact Assessment

3.3.1 Biology: Habitats

Avoca Estuary

3.3.1.1 There will be no direct interaction with habitats present in the Avoca Estuary, therefore any potential impact to habitats in the waterbody would be indirect, resulting from SSC plumes from the relevant Proposed Works Offshore.

3.3.1.2 Due to the parallel properties of the tidal flow, impacts to habitats of onshore water bodies are not anticipated as interaction with the channel will not occur and disturbed sediment will be carried in a north-south direction, as shown in the numerical modelling presented in **Volume 3, Appendix 4.2: Coastal Processes Modelling.**

3.3.1.3 Therefore, no significant impact to the habitats present in the Avoca Estuary WFD water body from the Proposed Works Offshore are anticipated.

4 Conclusions

4.1.1.1 This WFD Assessment establishes that the Proposed Works Offshore are compliant with the WFD for any designated water bodies within the WFD Assessment Area. The assessment followed a structured approach through WFD Screening, Scoping, and Impact Assessment, identifying relevant water bodies including the Southwestern Irish Sea – Brittas Bay and Avoca Estuary. Impacts to groundwater were screened out as a pathway to onshore groundwater bodies was not present.

4.1.1.2 The WFD Scoping presented in **Section 3.2** scoped out impacts to hydromorphology, water quality, fish, WFD protected areas, and INNS. Habitats were scoped in for Avoca Estuary water body.

4.1.1.3 The WFD Impact Assessment of those receptors scoped in for further assessment are presented in **Section 3.3**. Impacts to habitats were assessed, the assessment undertaken demonstrates that any impacts of the Proposed Works Offshore on the Avoca Estuary water body would be localised and temporary, therefore not significant. Additionally, embedded mitigation, as set out in **Section 1.4**, ensure effective management of potential risks.

4.1.1.4 It is concluded from the above WFD Impact Assessment that, with implementation of the embedded mitigation as set out in **Section 1.4**, the Proposed Works Offshore will not result in deterioration of any coastal, transitional, rivers, or groundwater WFD water bodies.

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