



Marine Planning and Environmental

MUL application - Tonn Nua

ESB

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Glossary

Term	Definition
Adverse Effect on Site Integrity (AEOSI)	A conclusion under Article 6(3) of the Habitats Directive that determines whether a plan or project would adversely affect the integrity of a European site (SAC or SPA).
Appropriate Assessment (AA)	The statutory process under the Habitats Directive to assess the implications of a plan or project for European sites in view of their conservation objectives.
Baseline Data	Information collected on environmental, technical, or ecological conditions to provide a reference point for assessing potential impacts of proposed works.
Biodiversity	The variety of life in a particular habitat or ecosystem, including species, habitats, and ecological processes.
Designated Maritime Area Plan (DMAP)	A statutory spatial planning framework under the Marine Area Planning Act 2021, which identifies areas suitable for offshore renewable energy development.
Embedded Mitigation	Measures incorporated into project design and method statements from the outset to avoid, reduce, or minimise environmental impacts.
Environmental Management Plan (EMP)	A plan prepared by contractors setting out environmental control measures, monitoring, and procedures to ensure mitigation commitments are implemented.
Favourable Conservation Status (FCS)	The situation when a natural habitat or species is thriving, secure in the long term, and maintaining its role in the ecosystem.
Good Environmental Status (GES)	The environmental state required under the MSFD, where seas are ecologically diverse, clean, healthy, and productive.
Habitats Directive	EU Directive (92/43/EEC) requiring the conservation of natural habitats, wild fauna, and flora, forming the legal basis for SACs and species protection.
Mitigation Measures	Specific actions designed to prevent, reduce, or offset potential adverse environmental impacts.
Natura Impact Statement (NIS)	A document that reports the findings of an Appropriate Assessment, including whether AEOSI can be ruled out for European sites.
Site Investigation (SI) Works	Surveys and sampling activities (geophysical, geotechnical, benthic, ornithological, metocean, etc.) undertaken to inform offshore renewable energy project development.
South Coast DMAP (SC-DMAP)	The designated maritime area plan adopted in 2024 for the South Coast of Ireland, which identifies areas suitable for offshore renewable energy development.
Spill Prevention	Measures put in place to avoid accidental release of hydrocarbons or other contaminants into the marine environment, such as spill kits and response protocols.
Suitably Qualified Person (SQP)	A professional with the necessary qualifications and experience to prepare or verify assessments under MARA's Guidance Note for Applicants.
Water Framework Directive (WFD)	EU Directive (2000/60/EC) establishing a framework for achieving good ecological and chemical status in inland, transitional, and coastal waters.

Abbreviations and Acronyms

Abbreviation or Acronym	Meaning
AA	Appropriate Assessment
AEOSI	Adverse Effect on Site Integrity
DAHG	Department of Arts, Heritage and the Gaeltacht (now NPWS/Department of Housing, Local Government and Heritage)
DMAP	Designated Maritime Area Plan
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
EU	European Union
FCS	Favourable Conservation Status
GES	Good Environmental Status
IMO	International Maritime Organization
MARA	Maritime Area Regulatory Authority
MCZ	Marine Conservation Zone
MMO	Marine Mammal Observer
MSFD	Marine Strategy Framework Directive
MPA	Marine Protected Area
MUL	Marine Usage Licence
NIS	Natura Impact Statement
NPWS	National Parks and Wildlife Service
ODAS	Ocean Data Acquisition Systems
RIAA	Required Impact Assessment
ROV	Remotely Operated Vehicle
SAC	Special Area of Conservation
SC-DMAP	South Coast Designated Maritime Area Plan
SFPA	Sea Fisheries Protection Agency
SISAA	Supporting Information to Support Appropriate Assessment
SOLAS	Safety of Life at Sea
SPA	Special Protection Area
SPL	Sound Pressure Level
SQP	Suitably Qualified Person
USV	Uncrewed Surface Vessel
WFD	Water Framework Directive

1. Introduction

1.1. The Project

Tonn Nua is located off the coast of County Waterford, Republic of Ireland (ROI) and lies wholly within Maritime Area A – Tonn Nua, as designated in the South Coast Designated Maritime Area Plan (SC DMAP, 2024). Maritime Area A has been identified by Government as suitable for the plan-led development of fixed-foundation offshore wind, with an indicative potential capacity of approximately 900 megawatts (MW).

This application seeks a Marine Usage Licence (MUL) from the Maritime Area Regulatory Authority (MARA) to undertake a programme of site investigation (SI) works at the Tonn Nua site. The SI works are enabling activities designed to gather the geophysical, geotechnical, environmental, and metocean data required to inform project design, environmental assessment, and future consenting.

The SI works are surveys that will be temporary, small in scale, and fully reversible, undertaken on a phased basis over the five-year licence period (subject to MUL approval and contractor availability). They will provide the robust technical and environmental baseline necessary to support the sustainable delivery of offshore renewable energy within the DMAP framework, in line with Ireland's legally binding climate and energy commitments.

1.2. The Developer

The applicant, Helvick Head Offshore Wind Designated Activity Company (Helvick Head OSW DAC), is a 50:50 joint venture between Electricity Supply Board (ESB) and Ørsted A/S (Ørsted). In June 2023, ESB and Ørsted formed a partnership to jointly develop a pipeline of offshore renewable energy projects off the Irish coast.

ESB is Ireland's leading energy utility and is majority state-owned. Established in 1927, ESB has a long history of delivering large-scale infrastructure projects and providing secure, reliable, and affordable electricity to Ireland. ESB has been involved in offshore wind generation since 2007 with projects spread across Ireland and the United Kingdom.

Ørsted is a global leader in developing, constructing, and operating offshore wind farms, with a core focus on Europe. With more than 30 years of experience in offshore wind, Ørsted has 10.2 GW of installed offshore capacity and 8.1 GW under construction.

By developing projects such as Tonn Nua, ESB and Ørsted in partnership will contribute directly to Ireland's energy security, decarbonisation goals, and sustainable economic growth, while supporting the wider European transition to clean energy.

1.3. Purpose and Status

This report has been prepared by Natural Power Consultants on behalf of Helvick Head OSW DAC in support of an application for a MUL for SI works at the Tonn Nua site.

The purpose of the report is to provide the information required under Part 4: Marine Planning and Environmental Considerations of the MARA Guidance Note for Applicants (August 2025).

Applicants must provide proportionate information demonstrating:

- consistency with the National Marine Planning Framework (NMPF);
- alignment with other relevant environmental legislation and strategies; and
- implementation of suitable mitigation measures to ensure no significant environmental effects.

Accordingly, this report:

- demonstrates and signposts to how the proposed SI works are consistent with the environmental, economic, social, and sectoral policies of the NMPF;
- signposts supporting environmental assessments, including the Screening for Appropriate Assessment (SISAA), Natura Impact Statement (NIS), Annex IV Risk Assessment, and Water Framework Directive (WFD) Assessment, each prepared or verified by suitably qualified persons as required by the guidance;
- describes the embedded mitigation measures that will be applied during SI activities to avoid or minimise potential environmental effects; and
- confirms that the SI works are temporary, proportionate, and necessary to inform future offshore renewable energy development in line with national policy.

This overarching document should be read in conjunction with its supporting attachments (Attachments 4.1 to 4.11), which provide the detailed assessments and consistency statements required under Part 4 of the MARA Guidance Note.

1.4. Document Structure

This report has been structured to mirror the format of Part 4 of the MARA Guidance Note for Applicants Applying for a Maritime Usage Licence, to ensure clarity and ease of review. The document is organised as follows:

- **Section 1** – Introduction: context, purpose, and structure of this report.
- **Section 2** – Proposed Survey Works
- **Section 3** – Marine Planning and Environmental Considerations structured response to each Part 4 requirement.
- **Section 4** – Qualifications and Competency Statements: details of Suitably Qualified Persons (SQPs).
- **Section 5** – Embedded Mitigation Measures: summary of mitigation measures applied across all assessments.
- **Section 6** – Conclusions: overall consistency of the SI works with Part 4 requirements.

Two appendices are also provided to supplement the document and attachments listed below in Table 1.1.

- Appendix A – Proposed Sampling Locations
- Appendix B – Summary of Noise Sources

Where information must be prepared or verified by a Suitably Qualified Person, Section 4 provides a summary of their qualifications and experience.

1.5. Attachments Register

The supporting attachments required under Part 4 of the Guidance Note are listed in Table 1.1. Each is numbered to align with the corresponding application form requirement.

Table 1.1: Attachments Register (Marine Planning and Environmental Considerations (Part 4 of the MARA Guidance Note for Applicants applying for a Maritime Usage Licence))

Attachment	Document Title / Reference	Purpose
4.1	National Marine Planning Framework (NMPF) Objectives	Demonstrates SI works align with NMPF environmental, economic, social and sectoral policies.
4.2	Designated Marine Area Plan	Confirms consistency with the SC-DMAP (2024).
4.3.1	Supporting Information for AA Screening (SISAA)	Provides information to support screening for Appropriate Assessment.

Attachment	Document Title / Reference	Purpose
4.3.2	Natura Impact Statement (NIS)	Sets out assessment of effects on SACs/SPAs where required.
4.4	Risk Assessment for Annex IV Species	Assesses potential risk to cetaceans and other Annex IV species.
4.5	Compliance with the Objectives of the Water Framework Directive (WFD)	Demonstrates consistency with WFD objectives and no deterioration.
4.6	Compliance with Objectives of the Marine Strategy Framework Directive (MSFD)	Demonstrates consistency with MSFD targets and Good Environmental Status.
4.8	UN Convention on the Law of the Sea (UNCLOS) and the Maritime Jurisdiction Act Compliance Details	Confirms consistency with obligations under UNCLOS and national law.
4.9	National Climate Objective Compliance Details	Demonstrates consistency with the Climate Action and Low Carbon Development Act.
4.10	National Biodiversity Action Plan (NBAP) Compliance Details	Demonstrates SI works will not hinder national biodiversity objectives.
4.11	Statement of Need and Strategic Fit	Confirms SI works are necessary and aligned with national energy and marine policy.

2. Proposed Site Investigation and Baseline Survey Work

The proposed SI works at Tonn Nua are enabling activities required to characterise the physical, biological, and environmental conditions of the site. The data collected will underpin project design, environmental assessment, and consenting, ensuring that any future offshore wind development within Maritime Area A proceeds on a robust, evidence-based foundation.

The SI works will be phased over the five-year MUL period (subject to licence grant), with campaigns scheduled according to seasonal windows, contractor availability, and environmental constraints. The surveys are designed to be temporary, small in scale, and fully reversible, with all equipment removed upon completion. This section provides a summary of the proposed survey programme; full technical detail is contained in the Schedule of Works (SoW) submitted with the application (Attachment 3.1).

2.1. Geophysical Survey

Geophysical surveys will provide detailed mapping of the seabed and shallow sub-seabed to inform design and consenting. Techniques include:

- Multibeam echosounder (MBES);
- Side-scan sonar (SSS);
- Sub-bottom profiling (SBP) / Ultra-high-resolution seismic (UHRS); and
- Magnetometer surveys.

This equipment will either be hull- or pole-mounted or towed behind the vessel. These are predominantly non-intrusive acoustic methods, supplemented by occasional ground-truthing through grab sampling or drop-down video. Subsurface navigation systems¹ (ultra short baseline (USBL)) will also be used.

The surveys will identify:

- Bathymetry and seabed morphology;
- Sediment distribution and shallow geology;
- Potential hazards (e.g. obstructions, Unexploded Ordnance (UXO), shallow gas hazards);
- Archaeological and cultural heritage features; and
- Habitat features relevant to ecological assessment.

2.2. Geotechnical Survey

Geotechnical investigations will provide data on the engineering properties of seabed sediments and underlying strata. These are intrusive surveys carried out from specialist vessels and may include:

- Cone Penetration Tests (CPTs), including seabed and downhole testing (10–40 locations);
- Sampling/ coring boreholes (5–15 locations, to depths of up to 70 m);
- Vibrocores (or piston cores; 30–60 samples, up to 6 m depth);
- In situ thermal conductivity testing; and
- Laboratory testing of recovered samples.

These works will refine a 3D ground model of the site to support foundation and cable design.

¹ Transmitter located on towed equipment, receiver mounted on vessel.

2.3. Metocean Survey

Metocean campaigns will capture long-term datasets on wind, wave, current, and water properties (all mooring systems will be temporary and fully removed at the end of deployment). This will include deployment of:

- Acoustic Doppler Current Profilers (ADCPs) for current profiling;
- Wave buoys for directional wave and surface current data;
- Floating LiDAR buoys for wind resource assessment (12–36 months); and
- Autonomous Floating Platform (uncrewed surface vessels (USVs)) to operate as moored Ocean Data Acquisition Systems (ODAS; metocean) buoy.

Vessels will be used to deploy the metocean monitoring equipment.

2.4. Environmental and Ecological Baseline Surveys

Environmental baseline surveys will inform assessment of benthic habitats, marine mammals, birds, and fisheries. These will include:

- Benthic sampling (grab samples, box corer, sediment analysis, seabed photography);
- Static acoustic monitoring (deployment of C-POD/F-POD recorders for cetaceans);

Other environmental and ecological baseline surveys that will be carried out for the project include but are not limited to the following:

- Ornithological and Marine Mammal surveys (aerial/vessel-based and vantage point observations);
- Shipping and Navigation surveys; and
- Consultation-led fisheries surveys (methods to be agreed with Sea Fisheries Protection Agency (SFPA) if required).

2.5. Archaeological Survey

Archaeological investigations will primarily utilise data collected through geophysical methods (e.g. side-scan sonar, magnetometer) to identify potential cultural heritage features. Where required, these will be followed up with targeted diver or Remotely Operated Vehicle (ROV) inspections.

2.6. Duration and Phasing

The indicative programme is as follows:

- Geophysical surveys: 2–5 months (Commencement estimated Q2/Q3 2026–2027);
- Geotechnical surveys: 2–5 months (Commencement estimated Q2/Q3 2026–2027);
- Environmental/ecological and archaeological surveys: periodic, over 12–24 months (Commencement estimated 2026 or 2027);
- Metocean surveys: 12–36 months continuous deployment (Commencement estimated 2026, 2027 or 2028).

These durations represent active survey time only and will not be continuous across the five-year MUL period. The schedule is subject to change depending on weather, seabed conditions, and stakeholder consultation.

2.7. General Requirements

All survey campaigns will be delivered in accordance with recognised industry standards and applicable regulations. Key requirements include:

- All contractors to operate under ISO 9001-certified quality systems with project-specific Health, Safety and Environmental (HSE) / Environmental Management Plans;
- Vessels to be fully certified in line with International Maritime Organization (IMO), Safety of Life at Sea (SOLAS), and Irish maritime regulations;
- Standard embedded measures applied across all campaigns, including:
 - Marine Mammal Observer (MMO) / Passive Acoustic Monitoring (PAM) protocols;
 - Fisheries liaison and Notices to Mariners;
 - Pollution prevention and MARPOL-compliant waste management;
 - Navigation safety in compliance with COLREGS and Irish Coast Guard guidance.

3. Part 4 – Marine Planning and Environmental Considerations

Question 4.1 – NMPF Objectives

Before determining a MUL, MARA must have regard to the objectives and policies of the NMPF. The NMPF provides the overarching spatial planning framework for Ireland's maritime area, setting out environmental, economic, social, and sector-specific objectives to guide the sustainable use of marine resources.

The proposed Tonn Nua SI works have been assessed in detail against the NMPF. A proportionate, policy-by-policy review is provided in Attachment 4.1, structured under four headings:

- **Environmental – Ocean Health Policies:** covering biodiversity, water quality, seafloor integrity, underwater noise, air quality, marine litter, and climate change. The SI works are temporary and reversible, with embedded mitigation (e.g. MMO/PAM monitoring, pollution-prevention measures) ensuring no significant adverse effects on Natura 2000 sites, Annex IV species, or Good Environmental Status under the MSFD.
- **Economic – Thriving Maritime Economy Policies:** the works are compatible with other legitimate sea users through advance notices, fisheries liaison, guard vessels, and navigational safety protocols. They make efficient use of existing port infrastructure and indirectly support Ireland's offshore renewable energy sector and marine economy.
- **Social – Engagement with the Sea Policies:** the works will not restrict public access, impact seascape or landscape character, or displace socially beneficial activities such as fishing and recreation. They provide indirect social benefits by supporting skills, employment, and the evidence base for marine conservation and heritage protection.
- **Sector-Specific Offshore Renewable Energy Policies:** the SI works directly support the Government's offshore wind targets (5 GW by 2030), are consistent with the Offshore Renewable Energy Development Plan and Transition Protocol, and are aligned with the plan-led approach under the Maritime Area Planning Act. Surveys have been designed to avoid or minimise interaction with existing cables and other nationally important marine activities.

In summary, the SI works are consistent with all relevant NMPF objectives and policies. They are small-scale, time-limited, and reversible, with comprehensive embedded safeguards. They will not result in significant adverse effects on the marine environment, cultural heritage, or other maritime activities, and they provide critical baseline information to enable the sustainable development of offshore renewable energy in line with national policy.

Full detail, including individual compliance statements for each NMPF policy, is set out in Attachment 4.1 – Compliance with Objectives of National Marine Planning Framework (NMPF).

Question 4.2 – Designated Marine Area Plan

Ireland's first statutory Designated Maritime Area Plan the SC-DMAP—was formally made on 24 October 2024 under the Maritime Area Planning Act 2021. The SC-DMAP designates four maritime areas for fixed offshore wind development and establishes the spatial, environmental, and socio-economic framework for plan-led offshore renewable energy deployment in the Celtic Sea.

Within this framework, Maritime Area A – Tonn Nua has been designated as the location for Ireland's first DMAP-led offshore wind project, targeted to deliver approximately 900 MW by 2030 under ORESS 2.1. Tonn Nua represents the State's "New Wave" approach to accelerating renewable energy while safeguarding biodiversity and supporting co-existence with other marine users.

The SC-DMAP sets seven key objectives covering plan-led development, renewable energy delivery, biodiversity protection, multi-use seas, cultural and natural heritage, evidence-based governance, and socio-economic benefits. The proposed SI works at Tonn Nua are fully consistent with these objectives:

- **Plan-led development** – activities are confined wholly within Maritime Area A, ensuring compliance with the SC-DMAP’s spatial framework.
- **Renewable energy delivery** – while SI works do not generate electricity, they provide the essential geophysical, geotechnical, and environmental data required to design, assess, and consent the ~900 MW Tonn Nua project, contributing to the national 5 GW offshore wind target for 2030.
- **Safeguarding biodiversity and Natura 2000 sites** – embedded mitigation (e.g. MMO/PAM protocols, soft-start procedures) ensures no adverse effects on site integrity, as confirmed in the SISAA (Attachment 4.3.1), NIS (Attachment 4.3.2), Annex IV Risk Assessment (Attachment 4.4), and WFD Assessment (Attachment 4.5).
- **Multi-use seas** – surveys are temporary, localised, and designed to minimise interference with navigation, fisheries, and other maritime activities, supported by consultation, advance notifications, and liaison protocols.
- **Protecting cultural and natural heritage** – survey methods are non-intrusive and short-term, with no lasting effects on seascape or archaeological features.
- **Evidence-based planning and governance** – data gathered will be shared with competent authorities to support cumulative assessment, monitoring, and transparent decision-making.
- **Benefits for communities and the economy** – even at this early stage, the works will provide socio-economic value through the use of local ports, contractors, and services, while enabling the long-term regional benefits of offshore wind deployment.

In summary, the proposed SI works are fully consistent with the SC-DMAP. They align with all seven objectives, safeguard the marine environment, and provide the evidence base required to deliver Ireland’s offshore renewable energy targets in a sustainable and plan-led manner.

Full detail, including objective-by-objective analysis, is set out in Attachment 4.2 – Designated Marine Area Plan Compliance Details.

Question 4.3 – Information for Appropriate Assessment Screening

Before determining a MUL, MARA is required to have regard to Directive 92/43/EEC (the Habitats Directive) and Directive 2009/147/EC (the Birds Directive), as implemented in Ireland through the European Communities (Birds and Natural Habitats) Regulations 2011 (as amended).

In accordance with Article 6 of the Habitats Directive, MARA is obliged to screen for Appropriate Assessment (AA) and, where necessary, undertake a full AA when processing MUL applications. The European Commission’s guidance *Managing Natura 2000 Sites: The Provisions of Article 6 of the Habitats Directive* (2018) sets out the framework for this process.

The proposed SI works are not directly connected with, or necessary to, the conservation management of any European site. However, given their location within Maritime Area A and proximity to several designated sites, they have the potential to interact with Special Protection Areas (SPAs) and Special Areas of Conservation (SACs), which together form part of the Natura 2000 network of European sites.

In line with Article 6 of the Habitats Directive, and to enable MARA to fulfil its obligations, this application is accompanied by:

- Attachment 4.3.1 – Supporting Information for Screening for Appropriate Assessment (SISAA); and
- Attachment 4.3.2 – Natura Impact Statement (NIS).

The SISAA identified that likely significant effects (LSE) could not be excluded for several SPAs (Seas off Wexford, Mid-Waterford Coast and Helvick Head to Ballyquin) and SACs supporting marine mammals (harbour porpoise, bottlenose dolphin, grey seal, and harbour seal). On this basis, a full NIS was prepared.

The NIS concludes that, with embedded mitigation measures in place the proposed SI works will not result in adverse effects on the integrity (AEOSI) of any European site, either alone or in combination with other plans or projects.

Both the SISAA and the NIS have been prepared and/or verified by Suitably Qualified Persons (SQPs). Details of their qualifications and experience are provided in Section 4 of this report.

Accordingly, this application provides MARA with sufficient information to undertake screening for Appropriate Assessment and, if required, a full AA in line with its obligations under the Habitats and Birds Directives.

Question 4.4 - Risk Assessment for Annex IV Species

Under Article 12 of the Habitats Directive (92/43/EEC), Annex IV species are strictly protected wherever they occur, whether or not they are located within a designated European site. Where such species are present, a risk assessment is required to evaluate potential effects and to ensure compliance with the Directive.

To meet this requirement, a Risk Assessment for Annex IV Species has been prepared and is submitted as Attachment 4.4. The assessment was prepared in line with the most recent National Parks and Wildlife Service (NPWS) Guidance on Annex IV Species Derogations (July 2025) and associated Regulation 54/54A application template under the European Communities (Birds and Natural Habitats) Regulations 2011.

The assessment:

- Identifies relevant Annex IV species likely to occur in the project area, including cetaceans (harbour porpoise, bottlenose dolphin, minke whale), seals (grey and harbour), marine turtles, and otter;
- Evaluates potential effects from the SI works, including temporary underwater noise, localised physical disturbance, and vessel interactions;
- Considers the works both alone and in-combination with other plans and projects; and
- Sets out mitigation measures to ensure compliance with Article 12, including the use of Marine Mammal Observers (MMOs), Passive Acoustic Monitoring (PAM), soft-start procedures, restart protocols, vessel speed/approach management.

The assessment concludes that:

- The risk of lethal or injurious effects to Annex IV species is negligible once mitigation is applied;
- Disturbance effects are short-term, localised, and not significant;
- There will be no impact on the favourable conservation status (FCS) of any Annex IV species.

Accordingly, this application provides MARA with sufficient information to fully consider potential risks to Annex IV species when determining the MUL application.

Question 4.5 – Water Framework Directive²

Before determining a MUL, MARA is required to have regard to the EU Water Framework Directive (2000/60/EC) and its Irish implementing legislation, including the European Communities (Water Policy) Regulations 2003 and the European Communities Environmental Objectives (Surface Waters) Regulations 2009.

The Directive establishes a framework for the protection and improvement of inland surface waters, transitional waters, coastal waters, and groundwater, with the objective of achieving good ecological and chemical status by 2027.

For the proposed Tonn Nua SI works, WFD considerations are most relevant to coastal and transitional water bodies that may be intersected by nearshore activities, such as along the indicative export cable corridor. While the Tonn

² The EU Water Framework Directive (2000/60/EC) is implemented in Ireland through the European Communities (Water Policy) Regulations 2003 (S.I. 722 of 2003), which establish River Basin Districts and require the preparation of River Basin Management Plans. Environmental objectives for surface waters, including transitional and coastal waters, are further set out in the European Communities Environmental Objectives (Surface Waters) Regulations 2009 (S.I. 272 of 2009, as amended).

Nua area itself lies outside designated WFD water bodies, potential pathways for interaction — for example temporary turbidity plumes, localised sediment disturbance, or accidental releases — must be considered.

A Water Framework Directive Assessment has therefore been prepared in line with the national *Clearing Waters for All* approach and is submitted as Attachment 4.5.

To demonstrate consistency with the objectives of the WFD, the Attachment 4.5 – Water Framework Directive Assessment provides:

- Identification of relevant transitional and coastal water bodies and any protected areas within the Zone of Influence;
- A description of their current hydromorphological, ecological, and chemical status and objectives;
- An evaluation of potential effects of the SI works against the WFD requirements of no deterioration and no hindrance to achieving good status; and
- Proportionate mitigation measures, including pollution-prevention protocols, MARPOL-compliant waste management, and spill response planning.

The assessment concludes that the SI works are temporary, small in scale, and reversible, with no significant adverse effects predicted for any water body or protected area. There will be no deterioration in ecological or chemical status, and the works will not hinder the ability of any water body to achieve good status by 2027.

Question 4.6 – Marine Strategy Framework Directive³

Before determining a Maritime Usage Licence, MARA is required to have regard to the Marine Strategy Framework Directive (MSFD) (2008/56/EC, as amended by Directive 2017/845/EU) and its Irish implementing legislation, the European Communities (Marine Strategy Framework) Regulations 2011 (S.I. No. 249/2011).

The MSFD establishes a framework for the protection and sustainable use of the marine environment across EU waters, with the primary aim of achieving or maintaining Good Environmental Status (GES). Its objectives are to:

- protect and prevent deterioration of the marine environment;
- restore marine ecosystems where practical; and
- prevent or reduce inputs to the marine environment to avoid significant risks to biodiversity, ecosystems, human health, and legitimate uses of the sea.

GES is defined using 11 qualitative descriptors:

1. Biodiversity
2. Non-indigenous species
3. Populations of commercial fish and shellfish
4. Elements of marine food webs
5. Eutrophication
6. Seafloor integrity
7. Alteration of hydrographical conditions
8. Concentrations of contaminants
9. Contaminants in seafood

³ The Marine Strategy Framework Directive (2008/56/EC, as amended by Directive 2017/845/EU) is implemented in Ireland through the European Communities (Marine Strategy Framework) Regulations 2011 (S.I. 249 of 2011). These Regulations require Ireland to prepare and implement a Marine Strategy to achieve or maintain Good Environmental Status (GES), including assessments (Article 8), determinations of GES (Article 9), and environmental targets and indicators (Article 10).

10. Marine litter

11. Energy, including underwater noise

Ireland has developed national targets and indicators for each descriptor, as set out in its Marine Strategy. The relevance of these descriptors to the proposed SI works at Tonn Nua is assessed in Attachment 4.6.

A dedicated MSFD Consistency Statement has been prepared and is submitted as Attachment 4.6. This document evaluates the proposed SI works at Tonn Nua against the 11 MSFD descriptors and associated national targets.

The assessment confirms that:

- Potential pressures from SI activities (e.g. underwater noise, seabed disturbance, vessel operations) are temporary, localised, and reversible.
- Embedded mitigation measures including MMO/PAM monitoring, soft-start protocols, strict waste management, and biosecurity protocols are sufficient to avoid significant impacts on biodiversity, seafloor integrity, water quality, or other descriptors.
- Supporting assessments (SISAA, NIS, Annex IV RA, and WFD Assessment) provide additional evidence that the SI works will not result in deterioration of environmental status or hinder achievement of GES.

On this basis, the proposed SI works are considered fully consistent with the objectives of the MSFD and Ireland's Marine Strategy.

Details of the qualifications and experience of the author(s) are provided in Section 4 of this report and in Attachment 4.6.

Question 4.8 – UN Convention on the Law of the Sea and the Maritime Jurisdiction Act⁴

Before determining a MUL, MARA is required to have regard to the obligations of the Irish State under the United Nations Convention on the Law of the Sea (UNCLOS) and the Maritime Jurisdiction Act 2021.

MARA may grant a MUL for the occupation of any part of the maritime area comprising the territorial sea, the exclusive economic zone (EEZ), or the continental shelf. The Irish State exercises different degrees of sovereignty and jurisdiction across these zones but must in all cases act consistently with its international obligations.

Under UNCLOS:

- Other States retain rights of innocent passage through internal waters and the territorial sea, and enjoy freedoms of navigation and of laying and maintaining submarine cables and pipelines within the EEZ and continental shelf.
- Ireland must exercise its sovereign rights with due regard to the rights and freedoms of other States.
- All States have a general obligation to protect and preserve the marine environment, including taking measures to prevent, reduce and control pollution.

A dedicated UNCLOS and Maritime Jurisdiction Act Consistency Statement has been prepared and is submitted as Attachment 4.8. This document confirms that the proposed SI works at Tonn Nua are fully consistent with Ireland's obligations under UNCLOS and national implementing legislation.

In particular:

- The SI works will be conducted lawfully within Ireland's territorial sea and EEZ, under licence from MARA.
- The works are temporary and localised and will not interfere with the rights of other States, including the freedom of navigation or the laying/maintenance of submarine cables and pipelines.

⁴ Ireland is a party to the United Nations Convention on the Law of the Sea (UNCLOS), which entered into force for the State in 1996. The Maritime Jurisdiction Act 2021 gives effect in Irish law to Ireland's rights and obligations under UNCLOS, including the definition of maritime zones (internal waters, territorial sea, exclusive economic zone, and continental shelf).

- All survey vessels will operate in compliance with the International Regulations for Preventing Collisions at Sea (COLREGs) and applicable maritime safety rules.
- Embedded mitigation measures (see Section 5 of this report) ensure compliance with Ireland's duty under Articles 192 and 194 of UNCLOS to protect and preserve the marine environment. These include strict pollution-prevention controls and waste management consistent with MARPOL.

The Maritime Jurisdiction Act 2021 gives effect to Ireland's entitlements under UNCLOS, and the proposed SI works are consistent with its requirements. Supporting assessments — including the SISAA (Attachment 4.3.1), NIS (Attachment 4.3.2), Annex IV Risk Assessment (Attachment 4.4), and WFD Assessment (Attachment 4.5) — confirm that the activities will not compromise the protection of marine biodiversity or water quality within Ireland's maritime area.

Accordingly, the proposed SI works provide MARA with sufficient assurance that they can be authorised in full compliance with UNCLOS and the Maritime Jurisdiction Act 2021.

MARA is identified as a "relevant body" under the Climate Action and Low Carbon Development Act 2015 (as amended). In this capacity, MARA must perform its functions, in so far as practicable, in a manner consistent with the governance framework set out in the Act and in furtherance of the National Climate Objective.

The National Climate Objective, as defined in Section 3 of the Act, commits the State to:

"pursue and achieve, by no later than the end of the year 2050, the transition to a climate resilient, biodiversity rich, environmentally sustainable and climate neutral economy."

The Act is supported by legally binding carbon budgets, the Climate Action Plan 2024, the National Energy Security Framework (2022), and sectoral emissions ceilings. Offshore renewable energy is identified as central to delivering emissions reductions within the electricity sector and to ensuring Ireland's energy independence.

Question 4.9 – Climate Action and Low Carbon Development Act⁵

The proposed SI works at Tonn Nua are enabling activities that will provide the baseline data required to design, assess, and progress offshore wind projects within Maritime Area A of the South Coast DMAP. These works are therefore an essential step in enabling the delivery of Ireland's offshore wind targets—at least 5 GW operational by 2030 and up to 20+ GW by 2040–2050—as set out in the Climate Action Plan 2024 and the Offshore Wind Delivery Taskforce.

By facilitating the development of offshore renewable energy, the SI works directly support the transition to a climate-neutral economy by 2050, as mandated under the Act. Their temporary and proportionate nature ensures no material adverse climate or environmental impacts arise from the works themselves, while their purpose is directly tied to enabling climate action.

Consistency with environmental safeguards under the Act is confirmed through:

- SISAA and NIS (Attachments 4.3.1 & 4.3.2): Adverse effects on European sites are excluded following the application of mitigation.
- Annex IV RA (Attachment 4.4): Confirms no significant impacts on strictly protected marine species.
- WFD Assessment (Attachment 4.5): Confirms no deterioration in the ecological or chemical status of relevant water bodies.

⁵ The Climate Action and Low Carbon Development Act 2015 provides the statutory basis for Ireland's climate policy. It was substantially amended by the Climate Action and Low Carbon Development (Amendment) Act 2021, which strengthened the governance framework by: (i) introducing legally binding carbon budgets and sectoral emissions ceilings; (ii) establishing the National Climate Objective in Section 3; (iii) requiring all "relevant bodies" (including MARA) to perform their functions in a manner consistent with the governance framework and in furtherance of the National Climate Objective; and (iv) enhancing the role of the Climate Change Advisory Council in advising Government and monitoring progress. These provisions collectively underpin Ireland's statutory commitment to transition to a climate neutral economy by 2050.

Taken together, these supporting assessments confirm that the SI works enable climate action while safeguarding biodiversity and the marine environment, consistent with the requirements of the Act.

A detailed statement of consistency is provided in Attachment 4.9 – National Climate Objective Compliance Details.

Question 4.10 – 4th National Biodiversity Action Plan⁶

Ireland's 4th National Biodiversity Action Plan (NBAP) 2023–2030 sets out the State's statutory framework for biodiversity action, aligning national policy with the EU Biodiversity Strategy for 2030 and international obligations under the Convention on Biological Diversity (CBD).

The NBAP establishes objectives, policies, outcomes and actions to:

- Mainstream biodiversity into decision-making across all sectors;
- Strengthen conservation and restoration of ecosystems and species;
- Address drivers of biodiversity loss, including climate change, pollution and invasive alien species (IAS); and
- Enhance the knowledge base, public engagement, and Ireland's international contribution on biodiversity.

Under the Wildlife (Amendment) Act 2023, public bodies, including MARA, are required to “have regard to” the objectives and targets of the NBAP in their plans, policies and programmes.

The proposed SI works at Tonn Nua are temporary, small-scale, and proportionate activities. They are not expected to cause permanent habitat loss or significant disturbance, and embedded mitigation measures ensure that risks to biodiversity are avoided or reduced to negligible levels.

Consistency with the NBAP is demonstrated through:

- Protected sites and species: Marine mammal mitigation follows NPWS protocols (MMO/PAM, soft starts, shutdowns), ensuring no adverse effect on site integrity (AEOSI).
- Invasive Alien Species: Strict vessel biosecurity and ballast-water protocols prevent introduction or spread of IAS.
- Pollution and habitat integrity: Zero discharge and spill prevention measures protect water quality; seabed disturbance from sampling is minor, localised and reversible.
- Evidence generation: Surveys will generate high-quality ecological datasets (birds, mammals, benthic habitats, fisheries), directly contributing to the national biodiversity evidence base and supporting future MPA designation and management.
- Policy integration: The SI works operationalise the NBAP's ecosystem-based and precautionary approach, balancing renewable energy development with biodiversity safeguards.

The NIS (Attachment 4.3.2), SISAA (Attachment 4.3.1), Annex IV Risk Assessment (Attachment 4.4), and WFD Assessment (Attachment 4.5) all confirm that, with mitigation, the SI works will not result in AEOSI, significant effects on Annex IV species, or deterioration in water status.

A detailed analysis of consistency with NBAP objectives, outcomes, and marine-relevant policies is provided in Attachment 4.10 – National Biodiversity Action Plan Compliance Details.

Question 4.11 – Need for the Maritime Usage

The proposed SI works at the Tonn Nua site are necessary enabling activities that will provide the geophysical, geotechnical, metocean, and ecological datasets required to design, consent, and deliver a future offshore wind farm within Maritime Area A of the SC-DMAP.

⁶ Ireland's 4th National Biodiversity Action Plan (2023–2030) was published in 2023 under the framework of the Convention on Biological Diversity and the EU Biodiversity Strategy for 2030. It is the statutory policy instrument guiding national action on biodiversity conservation, to which MARA must have regard under Section 22 of the Marine Area Planning Act 2021.

These works are justified by their role in:

- Providing baseline environmental and technical data essential for robust design, consenting, and environmental assessment;
- Enabling statutory processes including EIA, AA and MSFD reporting, all of which depend on site-specific baseline data;
- Reducing consenting risk by identifying environmental sensitivities and technical constraints at an early stage;
- Supporting national and European policy delivery, including Ireland's Climate Action Plan (2024), the Climate Action and Low Carbon Development Act 2021, the National Marine Planning Framework (2021), and the SC-DMAP (2024); and
- Contributing to strategic research objectives, including those identified in the National Energy and Climate Plan (NECP) and the MaREI Centre for Energy, Climate and Marine Research, which highlight the critical role of early site investigations in enabling offshore renewables.

The SI works are directly aligned with Ireland's statutory climate and energy obligations and with the EU's Offshore Renewable Energy Strategy, REPowerEU, and the European Green Deal. Without them, the timely delivery of offshore wind projects—including the national target of 5 GW by 2030 and longer-term ambitions of 20 GW by 2040–2050—would not be feasible.

National or European strategic or policy objectives Compliance Details, including a detailed policy alignment table (Table 4.1), is provided in Attachment 4.11.

4. Competency Statements and Suitably Qualified Persons

Natural Power's Planning and Environment Department provides specialist input across all environmental and planning topics relevant to offshore site investigation works. The team has delivered assessments for numerous projects in Ireland and internationally, covering marine mammals, seabirds, benthic ecology, fish and fisheries, water quality, and marine planning/consenting. This track record demonstrates the capability required to meet MARA's Guidance Note for MUL applications.

For the present application, all reports and statements submitted in support of the Part 4: Marine Planning and Environmental Considerations of the MARA Guidance Note for Applicants (August 2025) requirements have been prepared and/or reviewed by Suitably Qualified Persons (SQPs). Natural Power's Irish consultants, supported by colleagues in the wider UK and international team, brought direct experience of the marine licensing framework, including the preparation of SISAA, NIS, Annex IV risk assessments, WFD assessments, and MSFD statements for Foreshore and MUL applications. Where highly specialised input was required, in-house expertise was complemented by trusted sub-consultants to ensure full coverage of regulatory requirements. Table 4.1 identifies the SQPs responsible for each Part 4 attachment, including their organisation, role, and a short summary of qualifications and experience.

Table 4.1: Suitably Qualified Persons responsible for the preparation of Part 4: Marine Planning and Environmental Considerations of the MARA Guidance Note for Applicants attachments

Report / Attachment	Team	SQP	Organisation	Role / Responsibility	Summary of Qualifications & Relevant Experience
Attachment 4.1 – Compliance with Objectives of NMPF	Offshore Consenting and Environment	Emily Lowe	Natural Power	Lead author	MSc Marine Renewable Energy; BSc Marine Biology. Senior environmental consultant and project manager with over 5 years' experience, specialising in Habitats Regulations Assessment, derogation cases and marine consenting. Experienced in authoring policy consistency statements, EIA screening information and strategic fit assessments for offshore wind developments
Attachment 4.2 – Designated Marine Area Plan Compliance Details	Offshore Consenting and Environment	Emily Lowe	Natural Power	Lead author	MSc Marine Renewable Energy; BSc Marine Biology. Senior environmental consultant and project manager with over 5 years' experience, specialising in Habitats Regulations Assessment, derogation cases and marine consenting. Experienced in authoring policy consistency statements, EIA screening information and strategic fit assessments for offshore wind developments
Attachment 4.3.1 – SISAA	Marine Ornithology	Fiona Morton	Natural Power	Lead author	Senior environmental consultant with over 9 years' experience in offshore ornithology. Specialist in seabird EIA/reports to inform AA and survey management, JNCC ESAS certified and a qualified MMO.
		Niamh Blundell	Natural Power	Contributing Author	Marine biologist (BSc, University of Plymouth) with experience across ornithology, marine megafauna and ecology for offshore wind and cable projects. Contributes to EIA chapters, reports to inform AA, manages ecological surveys, and liaises with SNCBs. Field experience includes cetacean research in Portugal and seal rehabilitation in Ireland. Holds PST/ENG1.
		Mia Forbes	Natural Power	Contributing Author	Graduate consultant with a BSc in Marine Science (University of Galway). Supports offshore EIAs, NIS, and marine licence applications, with recent experience on Codling, Buchan and subsea cable projects. Trained MMO (IWDG) with STCW95/ENG1, and background in marine mammal ecology from international fieldwork and internships.

Report / Attachment	Team	SQP	Organisation	Role / Responsibility	Summary of Qualifications & Relevant Experience
	Marine Mammals	Dr Kate Grellier	Natural Power	Lead author	PhD-qualified marine mammal specialist with over 25 years' combined research and consultancy experience. Extensive track record in EPS risk assessment, reports to inform AA, EIA and mitigation planning for offshore wind, interconnectors, and tidal energy projects across the UK and Ireland.
		William Brown	Natural Power	Contributing Author	BSc Zoology; MSc Marine Mammal Science. Senior consultant specialising in marine mammal ecology with consultancy experience in EIA, reports to inform AA and EPS risk assessments; JNCC-accredited MMO with extensive field experience
		Belinda Collington	Natural Power	Contributing Author	BSc Marine & Freshwater Biology; MSc International Marine Science. Environmental consultant with 2 years' experience in offshore renewables, contributing to EIA, benthic and marine mammal assessments, and EPS licensing
	Benthic Ecology	Michelle Elliott	Natural Power	Lead author	Principal consultant with over 9 years' experience in marine ecology, EIA and reports to inform AA. Specialist in benthic impact assessment, compliance monitoring and stakeholder engagement, with previous regulatory background at SEPA.
		Leah Brown	Natural Power	Contributing Author	Marine biologist (BSc, MPhil, Newcastle University) specialising in benthic habitats and offshore ecology. Experience includes benthic and eDNA surveys, EIA reporting, and MPA/MCZ assessments for offshore wind projects across the UK. Provides offshore consents support (e.g., Neart na Gaoithe) and previously worked at the Environment Agency as a Flood Risk Data Analyst.
	Fish Ecology	Victoria Rutherford	Natural Power	Lead author	MSc-qualified marine ecologist with over 13 years' consultancy experience. Specialist in benthic and fish ecology, shellfish ecology, and offshore consenting, with expertise spanning site investigation, EIA/NIS, and compliance support for UK and Irish offshore wind projects.

Report / Attachment	Team	SQP	Organisation	Role / Responsibility	Summary of Qualifications & Relevant Experience
Attachment 4.3.2 – NIS	Marine Ornithology	Fiona Morton	Natural Power	Lead author	Senior environmental consultant with over 9 years' experience in offshore ornithology. Specialist in seabird assessments (EIA/ reports to inform AA) and survey management, JNCC ESAS certified and a qualified MMO.
		Niamh Blundell	Natural Power	Contributing Author	Marine biologist (BSc, University of Plymouth) with experience across ornithology, marine megafauna and ecology for offshore wind and cable projects. Contributes to EIA chapters, reports to inform AA, manages ecological surveys, and liaises with SNCBs. Field experience includes cetacean research in Portugal and seal rehabilitation in Ireland. Holds PST/ENG1.
		Mia Forbes	Natural Power	Contributing Author	Graduate consultant with a BSc in Marine Science (University of Galway). Supports offshore EIAs, NIS, and marine licence applications, with recent experience on Codling, Buchan and subsea cable projects. Trained MMO (IWDG) with STCW95/ENG1, and background in marine mammal ecology from international fieldwork and internships.
	Marine Mammals	Dr Kate Grellier	Natural Power	Lead author	PhD-qualified marine mammal specialist with over 25 years' combined research and consultancy experience. Extensive track record in EPS risk assessment, reports to inform AA, EIA and mitigation planning for offshore wind, interconnectors, and tidal energy projects across the UK and Ireland.
		William Brown	Natural Power	Contributing Author	BSc Zoology; MSc Marine Mammal Science. Senior consultant specialising in marine mammal ecology with consultancy experience in EIA, reports to inform AA and EPS risk assessments; JNCC-accredited MMO with extensive field experience
		Belinda Collington	Natural Power	Contributing Author	BSc Marine & Freshwater Biology; MSc International Marine Science. Environmental consultant with 2 years' experience in offshore renewables, contributing to EIA, benthic and marine mammal assessments, and EPS licensing
	Marine Mammals	Kate Grellier	Natural Power	Lead author	PhD-qualified marine mammal specialist with over 25 years' combined research and consultancy experience. Extensive track record in EPS risk assessment,

Report / Attachment	Team	SQP	Organisation	Role / Responsibility	Summary of Qualifications & Relevant Experience
Attachment 4.4 – Annex IV Species Risk Assessment		William Brown	Natural Power	Contributing Author	reports to inform AA, EIA and mitigation planning for offshore wind, interconnectors, and tidal energy projects across the UK and Ireland. BSc Zoology; MSc Marine Mammal Science. Senior consultant specialising in marine mammal ecology with consultancy experience in EIA, reports to inform AA and EPS risk assessments; JNCC-accredited MMO with extensive field experience
		Belinda Collington	Natural Power	Contributing Author	BSc Marine & Freshwater Biology; MSc International Marine Science. Environmental consultant with 2 years' experience in offshore renewables, contributing to EIA, benthic and marine mammal assessments, and EPS licensing
Attachment 4.5 – Compliance with Objectives of the WFD	Offshore Consenting and Environment	Laila Higgins	Natural Power	Lead author	PhD in Zoology and has provided EIA services relating to marine water quality, including Water Framework Directive (WFD) Assessment, and benthic ecology. Has worked on both DCO and Marine Licence projects in the UK, and offshore projects in and France. Have provided post-consent environmental compliance support for UK and French projects, including the European Offshore Wind Deployment Centre (EBWDC), Viking Link Interconnector, Shetland HVDC Link and offshore export cables of offshore wind farms Projet de parc éolien en mer de Saint-Nazaire (France) and Neart na Gaoithe (Scotland).
	Offshore Consenting and Environment	Aikaterini Kamposi	Natural Power	Contributing Author	Marine biologist with over 10 years' experience in fisheries and benthic ecology. Former MMO Future Fisheries Officer and ICCAT/IOTC Fisheries Observer. At Natural Power, Kat specialises in commercial fisheries assessment, benthic surveys, and eDNA studies for offshore wind and cable projects. Holds dual MScs in Aquatic Environment Management and Sustainable Aquaculture.
Attachment 4.6 – Compliance with Objectives of the MSFD	Offshore Consenting and Environment	Emily Lowe	Natural Power	Lead author	MSc Marine Renewable Energy; BSc Marine Biology. Senior environmental consultant and project manager with over 5 years' experience, specialising in Habitats Regulations Assessment, derogation cases and marine consenting. Experienced in authoring policy consistency statements, EIA screening information and strategic fit assessments for offshore wind developments

Report / Attachment	Team	SQP	Organisation	Role / Responsibility	Summary of Qualifications & Relevant Experience
Attachment 4.8 – UNCLOS / Maritime Jurisdiction Act Compliance Details	Offshore Consenting and Environment	Emily Lowe	Natural Power	Lead author	MSc Marine Renewable Energy; BSc Marine Biology. Senior environmental consultant and project manager with over 5 years' experience, specialising in Habitats Regulations Assessment, derogation cases and marine consenting. Experienced in authoring policy consistency statements, EIA screening information and strategic fit assessments for offshore wind developments
Attachment 4.9 – National Climate Objective Compliance Details	Offshore Consenting and Environment	Emily Lowe	Natural Power	Lead author	MSc Marine Renewable Energy; BSc Marine Biology. Senior environmental consultant and project manager with over 5 years' experience, specialising in Habitats Regulations Assessment, derogation cases and marine consenting. Experienced in authoring policy consistency statements, EIA screening information and strategic fit assessments for offshore wind developments
Attachment 4.10 – NBAP Compliance Details	Offshore Consenting and Environment	Emily Lowe	Natural Power	Lead author	MSc Marine Renewable Energy; BSc Marine Biology. Senior environmental consultant and project manager with over 5 years' experience, specialising in Habitats Regulations Assessment, derogation cases and marine consenting. Experienced in authoring policy consistency statements, EIA screening information and strategic fit assessments for offshore wind developments
Attachment 4.11 – National or European strategic or policy objectives Compliance Details	Offshore Consenting and Environment	Emily Lowe	Natural Power	Lead author	MSc Marine Renewable Energy; BSc Marine Biology. Senior environmental consultant and project manager with over 5 years' experience, specialising in Habitats Regulations Assessment, derogation cases and marine consenting. Experienced in authoring policy consistency statements, EIA screening Information and strategic fit assessments for offshore wind developments

4.1. Senior Oversight

In addition to the Suitably Qualified Persons listed in Table 4.1 the following senior specialists have provided strategic review and technical oversight across the Marine Planning and Environmental Consideration's attachments:

- **Chris Pendlebury, Director of Offshore Consenting & Environment** – Over 20 years' experience in renewable energy consenting, with expertise in ornithology, ecological assessment, Appropriate Assessment, and provision of strategic advice across over 25 offshore wind sites, 100 onshore wind sites and multiple wave/tidal projects.
- **Stuart McCallum, Technical Director – Offshore** - Over 15 years' experience in offshore renewables and marine infrastructure, specialising in large-scale survey campaigns, environmental assessment, construction compliance, and stakeholder engagement for offshore wind farms and interconnectors.
- **Graeme Cook – Principal Environmental Consultant (Ornithology)** - BSc (Hons) Environmental and Behavioural Biology; MSc (Distinction) Ecology. Over 14 years' experience in ornithology for offshore renewables across the UK, Ireland and Europe. Specialist in ornithology assessments (EIA/ reports to inform AA) and strategic advice for multi-developer offshore projects, including leading ornithology components of the Codling Offshore Wind Farm application (Ireland).

Their input has ensured that the documents submitted are consistent with best practice and current regulatory requirements.

5. Mitigation Measures

Where relevant, a suite of standard mitigation and good-practice measures has been embedded across all assessments to ensure potential effects from the SI works are minimised. These measures are consistent with industry best practice, national guidance (e.g. DAHG 2014, NPWS 2025 Annex IV protocols), and statutory requirements, e.g. under the Birds and Habitats Directives, Water Framework Directive (WFD), and Marine Strategy Framework Directive (MSFD).

The mitigation commitments are set out in Sections 5.1–5.6 of this document, grouped by receptor/topic (ornithology, marine mammals, benthic ecology, fish ecology, water quality/pollution prevention, and navigation/safety).

These measures are also covered in greater detail against the specific environmental topics they relate to in the supporting assessments, including:

- SISAA (Attachment 4.3.1) and NIS (Attachment 4.3.2)
- Annex IV Species Risk Assessment (Attachment 4.4)
- WFD Assessment (Attachment 4.5);
- MSFD Statement (Attachment 4.6);
- UNCLOS / Maritime Jurisdiction Act Statement (Attachment 4.8).

This ensures that the embedded mitigation is not only summarised at project level here but also addressed in detail within the relevant topic-specific assessments.

5.1. Marine Mammals and Underwater Noise

The geophysical and geotechnical surveys involve the use of some acoustic sources which may induce the onset of auditory injury in some marine mammal species if not mitigated (e.g. sub-bottom profilers (SBPs), ultra-high-resolution seismic (UHRS) equipment, ultra short baseline (USBL) systems and borehole drilling). To ensure compliance with Article 12 of the Habitats Directive and NPWS protocols, a series of embedded measures will be applied.

Standard mitigation measures (DAHG, 2014⁷) will be implemented for all noise-generating activities that have the potential to induce the onset of auditory injury in Annex IV species. Where possible, equipment will be operated such that the sound pressure level (SPL) of the sound emitted is less than 202 dB re. 1 µPa at 1 m (which is the lowest of the auditory injury onset thresholds for impulsive noise (NMFS, 2024⁸). Where this cannot be achieved the following (as detailed in Section 4.3.4 (ii) of the DAHG (2014) guidance) will be undertaken prior to the commencement of the survey, and if there is a break in sound output for a period greater than 30 minutes:

- Pre-start monitoring (30 minutes) of a 500 m radius zone; and
- Ramp up procedure (where equipment allows).

Where effective visual monitoring is not possible (e.g., poor conditions, during the hours of darkness), passive acoustic monitoring (PAM) will be undertaken to allow the survey to proceed in a timely manner.

Comprehensive reporting of all MMO/PAM data will be submitted to NPWS and MARA. The Annex IV Risk Assessment confirms that with these measures, the risk of injury or disturbance is negligible and there will be no impact on the favourable conservation status of Annex IV species.

⁷ DAHG. (2014). Guidance to manage the risk to marine mammals from man-made sound sources in Irish waters. January 2014. Prepared by the National Parks and Wildlife Service of the DAHG [now DHLGH].

⁸ NMFS. (2024). Update to: Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing (Version 3.0): Underwater and In-Air Criteria for Onset of Auditory Injury and Temporary Threshold Shifts. U.S. Dept. of Commer., NOAA. NOAA Technical Memorandum NMFS-OPR-71, 182p.

5.2. Ornithology

No specific additional mitigation measures are advised in relation to ornithology over and above the embedded mitigation measures outlined above. Furthermore, it is considered that some mitigation measures described for other receptors would potentially have secondarily beneficial consequences to ornithological receptors (i.e. soft-start (ramp-up) procedures for piling works would further reduce any perceived residual underwater noise effects).

The NIS states that with embedded mitigation measures in place, no further measures are required in order to conclude that the SI works will not result in adverse effects on the integrity of any SPA.

5.3. Benthic and Fish Ecology

To prevent the spread of invasive alien species, all vessels will comply with strict biosecurity protocols, including relevant hull antifouling and ballast-water management in accordance with international best practice (including the International Convention for the Prevention of Pollution from Ships (MARPOL addressing ballast water and biofouling⁹). As all sampling is small-scale, temporary and reversible, there will be no significant alteration to benthic habitat structure or function.

5.4. Water Quality and Pollution Prevention

Protecting water quality is a key requirement under the WFD. To this end, all vessels will have in place a Shipboard Oil Pollution Emergency Plan, with bunded fuel storage, use of drip trays under equipment, and regular inspection of hoses and couplings. No discharges to sea will occur, and all waste will be managed in accordance with MARPOL requirements and landed at licensed onshore facilities.

These embedded measures, together with the inherently small and localised scale of the works, ensure that there will be no deterioration in the ecological or chemical status of transitional or coastal water bodies.

5.5. Navigation and Maritime Safety

Navigation safety will be managed through the issue of Notices to Mariners in advance of all works, compliance with the International Regulations for Preventing Collisions at Sea (COLREGs), and use of appropriate lighting and Automatic Identification Systems (AIS) on relevant vessels. A fisheries liaison officer will be engaged throughout to coordinate with local fishing interests, and guard vessels may be deployed where required to safeguard operations.

5.6. General Construction Good Practice

All contractors will operate under certified quality and environmental management systems (e.g. ISO 9001 and ISO 14001). Crews will receive environmental inductions and toolbox talks prior to survey activities. Emergency response procedures will be in place to deal with pollution incidents, equipment loss, or vessel collision.

Taken together, the embedded mitigation measures described above provide a comprehensive framework to avoid or minimise potential environmental effects of the Tonn Nua SI works. The SISAA (Attachment 4.3.1) and NIS (Attachment 4.3.2) confirm that no adverse effects on the integrity of European sites will arise, either alone or in combination with other plans and projects. The Annex IV Risk Assessment (Attachment 4.4) concludes that underwater noise and vessel activity will not affect the favourable conservation status of strictly protected species. The Water Framework Directive Assessment (Attachment 4.5) confirms that no deterioration in the ecological or chemical status of transitional or coastal water bodies will occur.

⁹ [https://www.imo.org/en/about/conventions/pages/international-convention-for-the-prevention-of-pollution-from-ships-\(marpol\).aspx](https://www.imo.org/en/about/conventions/pages/international-convention-for-the-prevention-of-pollution-from-ships-(marpol).aspx)

On this basis, the SI works are considered temporary, proportionate, and environmentally sustainable, with all significant risks effectively managed through embedded mitigation and good-practice measures.

6. Conclusions

This report fulfils the requirements of Part 4: Marine Planning and Environmental Considerations of MARA's Guidance Note for Applicants (August 2025). It demonstrates that the proposed SI works at the Tonn Nua site are temporary, proportionate, and reversible activities that are essential to inform the design, assessment, and consenting of future offshore renewable energy projects within Maritime Area A of the SC-DMAP.

The application is supported by a suite of statutory environmental assessments — including the SISAA (Attachment 4.3.1), NIS (Attachment 4.3.2), Annex IV Risk Assessment (Attachment 4.4), and the Water Framework Directive Assessment (Attachment 4.5) — all of which confirm that, with mitigation, the SI works will not give rise to significant adverse effects on European sites, Annex IV species, or transitional and coastal water bodies. The MSFD Consistency Statement (Attachment 4.6) confirms that no risk arises to Good Environmental Status across the 11 descriptors.

Consistency has also been demonstrated with wider marine and environmental policy frameworks, including the National Marine Planning Framework (Attachment 4.1), the SC-DMAP (Attachment 4.2), the Climate Action and Low Carbon Development Act (Attachment 4.9), and the 4th National Biodiversity Action Plan (Attachment 4.10). The Statement of Need and Strategic Fit (Attachment 4.11) further confirms the strategic necessity of these works to enable Ireland to meet its offshore renewable energy targets.

Embedded mitigation measures, detailed in Section 5 of this report, provide robust safeguards for biodiversity, water quality, navigation, and fisheries. These measures are consistent with best practice, align with NPWS and WFD guidance, and ensure that all activities proceed in an environmentally sustainable manner.

On this basis, the Tonn Nua SI works are considered:

- Necessary, to provide baseline data for the design and consenting of offshore wind within Maritime Area A;
- Proportionate, in scale and duration, with activities carefully phased over the five-year licence period; and
- Environmentally sustainable, with no significant adverse effects predicted following mitigation.

A summary of outcomes for each Part 4 attachment is presented in Table 6.1.

Taken together, the assessments confirm that the SI works are consistent with the requirements of Part 4 of MARA's Guidance Note, are underpinned by robust embedded mitigation, and will not give rise to significant adverse effects on the marine environment. The information provided gives MARA a clear and proportionate basis to determine the MUL application.

Table 6.1: Summary of outcomes for Part 4 attachments

Attachment	Title	Outcome Summary
4.1	Compliance with Objectives of NMPF	Confirms that the SI works are consistent with the environmental, economic and social objectives of the NMPF. Demonstrates that potential impacts are temporary, proportionate and will be effectively managed through embedded mitigation, ensuring alignment with wider marine planning and policy goals.
4.2	DMAP Compliance Details	Confirms that the SI works are compatible with the SC-DMAP and do not compromise its strategic intent. The works support the progression of offshore renewable energy within a designated plan-led framework.
4.3.1	SISAA	Identifies European sites within the Zone of Influence and evaluates potential impact pathways. Provides MARA with a robust basis to complete AA screening in line with Article 6(3) of the Habitats Directive.
4.3.2	NIS	Provides a NIS of the SI works. Concludes that the works will not result in adverse effects on the integrity (AEoSI) of any European site, alone or in combination with other plans or projects, thereby meeting the requirements of Article 6(3) of the Habitats Directive.
4.4	Risk Assessment for Annex IV Species	Assesses potential interactions with Annex IV species (cetaceans, seals, marine turtles). Confirms risks are negligible or can be effectively mitigated through adherence to NPWS guidance, industry-standard noise protocols and embedded mitigation measures.
4.5	Compliance with Objectives of the WFD	Identifies transitional and coastal water bodies within the ZOI and assesses their current ecological and chemical status. Concludes that the SI works will not cause deterioration in water body status or compromise progress towards achieving good ecological and chemical status, including for relevant protected areas.
4.6	Compliance with Objectives of the MSFD	Confirms that the SI works will not compromise Ireland's ability to achieve or maintain Good Environmental Status (GES) across the 11 descriptors. Assures that the works are temporary, localised, and managed to avoid significant risks to marine biodiversity, ecosystems, or legitimate sea uses.
4.8	UNCLOS / Maritime Jurisdiction Act Compliance Details	Confirms that the SI works are consistent with Ireland's international and domestic obligations, including compliance with COLREGs, recognition of navigational freedoms, and adherence to duties to protect the marine environment.
4.9	National Climate Objective Compliance Details	Demonstrates that the SI works are essential enabling activities for offshore renewable energy projects that will contribute to achieving the National Climate Objective of a climate-neutral economy by 2050, in line with the Climate Action and Low Carbon Act 2015 (as amended).

4.10	NBAP Compliance Details	Confirms that the SI works will not hinder the delivery of Ireland's 4th National Biodiversity Action Plan (2023–2030). Demonstrates that potential impacts on biodiversity are temporary, localised, and mitigated, ensuring alignment with national biodiversity goals.
4.11	Statement of Need and Strategic Fit	Establishes the necessity of the SI works to inform offshore renewable energy development and consenting. Confirms alignment with national and European strategic objectives on marine planning, climate action and energy security.

Appendices

A. Proposed Sampling and Monitoring Locations

The site investigation works at Tonn Nua will include a suite of geotechnical, environmental, and metocean surveys. The numbers and locations of sampling points are indicative and based on the current SoW for the SI works (Attachment 3.1; Figure A.1). The final locations will be determined through detailed survey design, but the ranges provided in Table A.1, and provisional locations presented in Figure A.1, represent the anticipated scope that has informed the environmental assessments.

Table A.1 Indicative number of sampling and monitoring locations proposed for Tonn Nua SI works (source: Schedule of Works).

Activity	Method	Approximate Number of Locations	Notes
Geotechnical	Boreholes	5–15	Rotary drilled boreholes within SI boundary
	Cone Penetration Tests (CPTs)	10–40	Distributed across SI boundary
	Vibrocores	30–60	Targeted within SI boundary to characterise sediments.
	Down-the-hole testing	–	Undertaken at selected boreholes where required.
Environmental / Ecological	Benthic grab samples	~100	Approx. 100 total. Final sampling locations will be determined based upon interpretation of the geophysical data and selected to sample different habitats.
	Static Acoustic Monitoring (SAM)	2–6	Temporary deployment of F-POD/C-PODs, sound traps, or similar to monitor marine mammal activity and other background noise.
Metocean	ADCPs	1–4	Deployed on seabed frames.
	Wave buoys	1–3	Surface deployment.
	Floating Lidar system	1–2	For wind resource characterisation.
	Uncrewed Surface Vessels (USVs)	1–2	Potential use as metocean monitoring platforms.

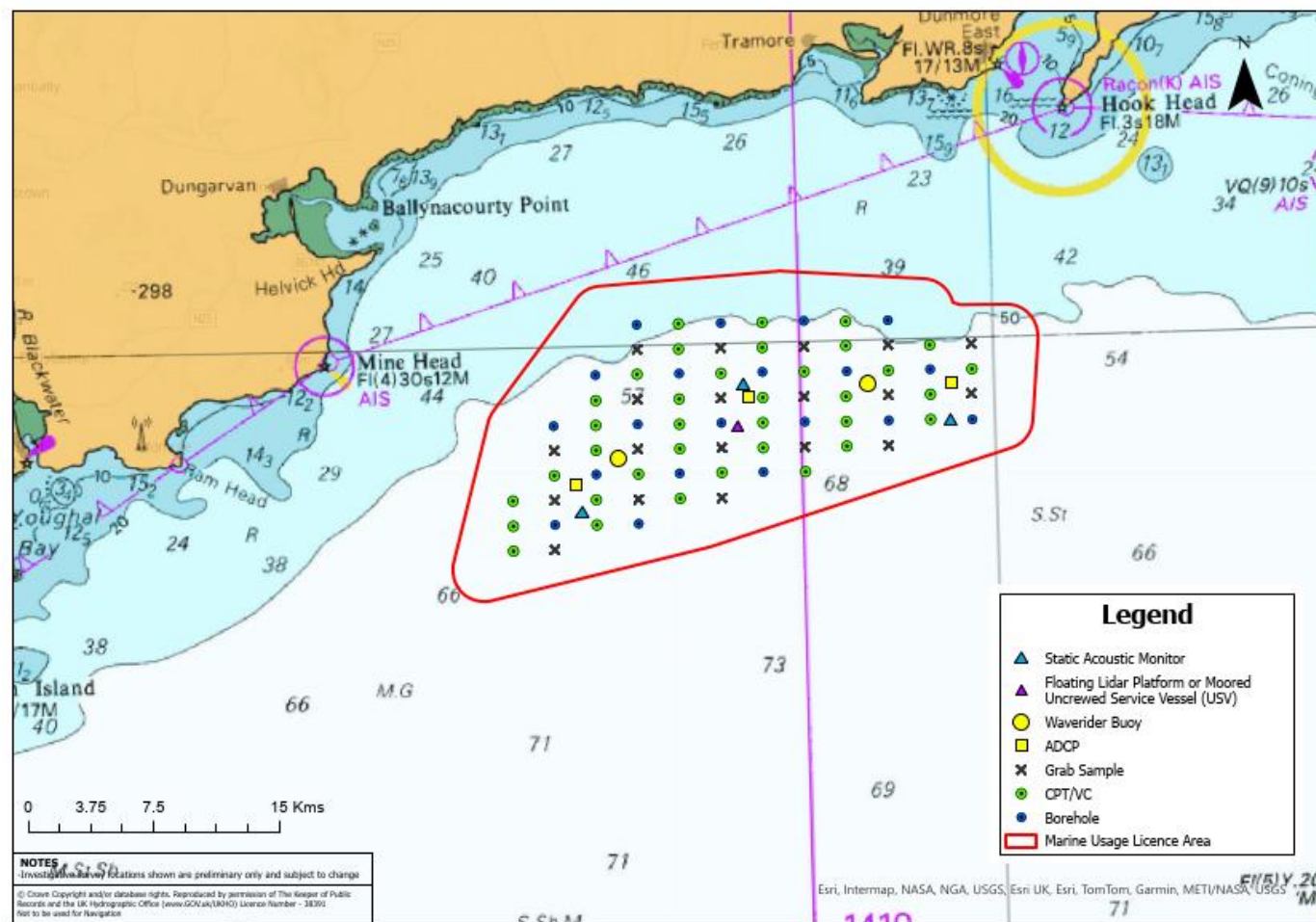


Figure A.1 Proposed Sampling and Mooring Locations

B. Summary of Noise Sources

The SI works will utilise a range of geophysical, geotechnical, and metocean survey equipment, some of which generate underwater noise (Table B.2). Indicative frequency ranges and source levels are drawn from the current SoW for the SI works (Attachment 3.1). Final specifications may vary depending on contractor selection.

Table B.2 Anticipated underwater noise sources associated with Tonn Nua SI works (source: Schedule of Works).

Activity / Source	Sound Pressure Level (dB re 1µPa @1m)	Frequency Range (kHz)	Notes
Vessel noise	118-145	Max 100	Typical operating range of support vessels.
Multibeam Echosounder (MBES)	200-228	400-700	Standard survey configuration.
Side Scan Sonar (SSS)	228	300-900	Used for seabed mapping.
Sub-bottom Profiler (SBP – pinger/chirp)	149-247	2-115	Used for shallow subsurface profiling.
Ultra-High Resolution Seismic (UHRS – Boomer)	212-215	0.0003-0.0025	Shallow penetration.
UHRS – Sparker	185-226	0.3-4	Higher SPL than boomer.
Rotary boreholes	145-190	Max 0.6	Noise from drilling operations.
Cone Penetration Tests (CPTs)	118-166	0.02-0.2	Short duration per test.
Vibrocorer	188	0.05	Used for sediment cores.
USBL (Ultra-short Baseline positioning)	170-220	18-30	Intermittent during survey operations.
ADCP (Acoustic Doppler Current Profiler)	114	300-600	Levels expected to be negligible compared to other sources.



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