Department of Housing, Local Government and Heritage

Environmental appraisal of Codling site investigation licence application FS007045

Environmental Impact Assessment Screening and Environmental Report

REP

Issue 1 | 7 December 2020

This report takes into account the particular instructions and requirements of our client.

It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

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Contents

Page

1 Introduction 1

2 Methodology 2

2.1 Information Made Available for Arup to Review 2
2.2 Methodology 2

3 Background 3

4 Description of the Proposed Development 4

4.1 Location 4
4.2 Proposed Site Investigation 5
4.3 Mitigation Measures proposed in the Licence Application 11

5 Public and Prescribed Body Consultation 12

5.1 Public and Prescribed Body Submissions 12

6 EIA Screening 21

6.1 General 21
6.2 Screening for Mandatory EIA 22
6.3 Screening of Significance of Effects on Environment 24
6.4 Adequacy of Information 26
6.5 European Commission Guidance Checklist 26
6.6 Conclusion of EIA Screening 35

7 Environmental Appraisal 36

7.1 Population and human health 36
7.2 Biodiversity 37
7.3 Water, air, climate 41
7.4 Material assets, cultural heritage and landscape 42
7.5 Major Accidents and Disasters 43

8 References 44

Appendix 1 45

1 Introduction

Arup has been appointed by the Department of Housing, Local Government and Heritage to assess the foreshore licence application for the Codling Wind Park Site Investigation FS007045. The Department's brief requires the assessment to be undertaken under the Foreshore Act 1933, as amended, and the EIA Directive including the potential impact on flora, fauna, habitats or the environment and to consider the applicants supporting documents on environmental matters. Arup is to provide a Screening Report/Environmental Report and final recommendations taking into consideration the environmental aspects of the prescribed bodies observations and comments and the public submissions received.

This report responds to the Department's requirements.

2 Methodology

2.1 Information Made Available for Arup to Review

The information about the proposed development, which formed the basis for the Arup review, was the information contained in the application file on the Department's website: https://www.housing.gov.ie/planning/foreshore/applications/fs007045-codling-wind-park-ltd, which was accessed on 13 November 2020.

The information comprised:

- Application form and supporting documents
  - Application Form
  - Foreshore Licence Map
  - Site Investigations – Indicative Locations
  - Appendix A Coordinates
- European Protected Species Risk Assessment Report
- Supplementary Information
- Appendix 6 Device Specification
- Public Consultation
  - Public Submissions
  - Applicant response to Public Submissions
- Prescribed Body Consultation
  - Prescribed Body Observations
  - Applicant response to Prescribed Body Observations

2.2 Methodology

Arup relied on the information from the applicants, the general public and the statutory bodies contained in the application file on the Department's website. In particular, Arup relied on the description of the baseline environment and the proposed works, and the commitments with regard to mitigation measures which would be implemented, provided by the applicant. Arup reviewed the significance of the effects on the environment of the proposed development. The review had regard to the Guidance on EIA Screening published by the European Commission, (EC, 2017). In coming to its conclusion in relation to the EIA screening, Arup used the checklist presented in the Guidance.

3 Background

Codling Wind Park Limited (CWPL), the applicant, proposes to develop an offshore wind park on a site of approximately 123km^2, located 13km to the east of the east coast of Ireland between Greystones and Wicklow. CWPL has applied for a foreshore licence to undertake a site investigation (the proposed development) at the site of the proposed offshore wind park and along potential routes to shore for the export cables. The total application area is 515km^2.

4 Description of the Proposed Development

4.1 Location

The application area lies within Ireland's 12 nautical mile limit, in an area off the east coast from Dublin Port to Wicklow town. It covers approximately 51,523 ha (515km^2). It includes the proposed CWP proposed offshore wind park (the array) site with the potential export cable corridors and additional buffer zones, as shown in Figure 1, which is sourced from the Supplementary Information report.

The survey area for the export cable routes covers potential route corridors and landfalls from Poolbeg in the north to Wicklow town in the south, with potential options for landfalls at two locations in between, i.e. a total of four broad landfall locations. The potential export cable routes will also be surveyed using a 500 m wide survey corridor.

It should be noted that, for some survey types, the survey area may extend beyond the Licence Application Area, i.e. beyond the 12 nm zone.

Figure 1 shows the application area, delineated by a red line.

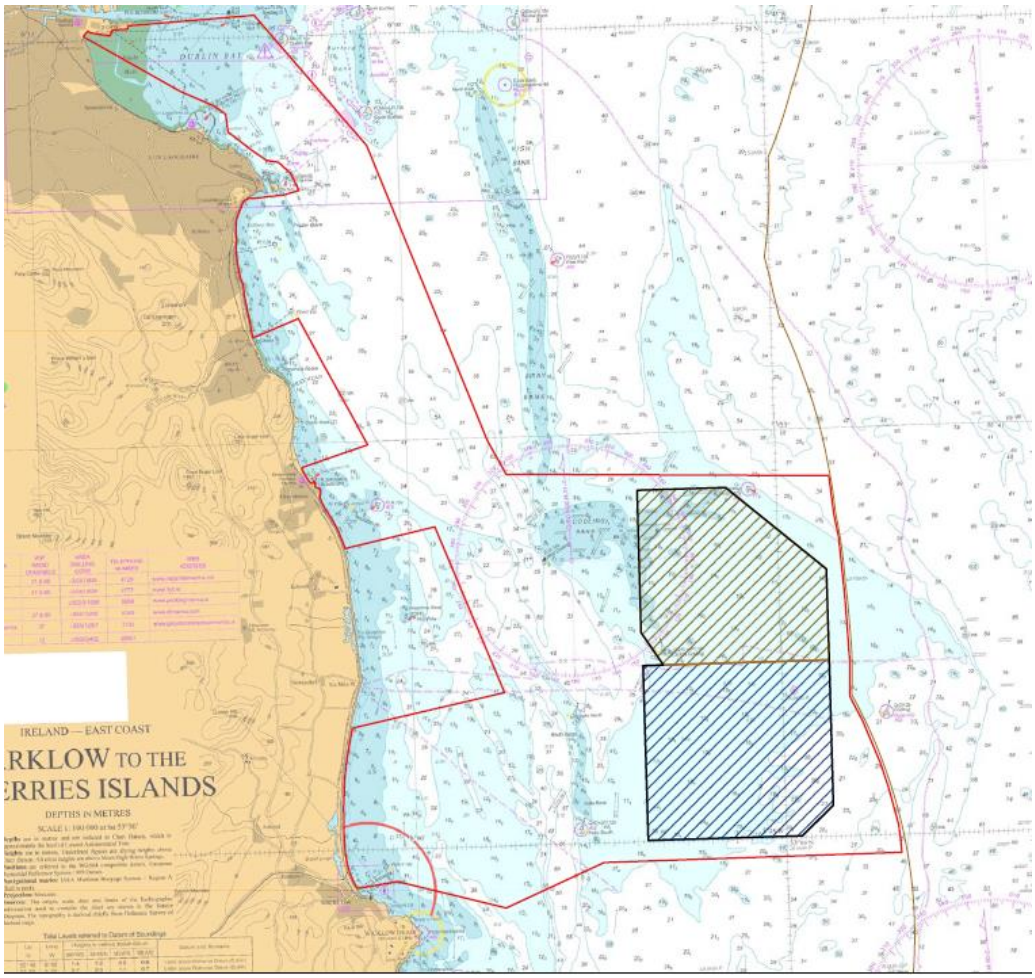

Figure 1: Map of Application Area (red line),12 nautical mile limited (brown line) and Offshore Wind Park (the array) (hatched area) (Source: Licence Application

Supplementary Information Report Figure 1.1; not to scale)

4.2 Proposed Site Investigation

The proposed development comprises the following investigative work:

- Geophysical surveys;
- Geotechnical campaign;
- Fish & Shellfish surveys;
- Benthic;
- Intertidal; and
- Metocean

A range of, preferably local, crews, vessels and survey equipment and devices will be used in the process, naturally minimising any potential negative interactions with other marine users through their knowledge and understanding of local activities and sea conditions.

4.2.1 Survey Summary

Table 1 provides information on each of the elements of the works and an indication of the survey duration. Figure 2 indicates the location of the geotechnical, metocean and POD surveys.

Table 1: Summary of Surveys and Indicative Programme

Activity	Proposed Sample numbers / locations	Indicative timings
Geotechnical Surveys	**Array** 20 boreholes and 60 CPTs (baseline) 100 boreholes (pre-construction, which may be run in two separate campaigns). Only the 20 baseline borehole locations are included in Figure 2.1 of the application. The 100 pre-construction boreholes location are yet to be determined and will be informed by prior surveys work and detailed engineering and project design work but will be located within the CWP array site. **Cable Corridors** **Offshore** Co-located Vibrocore and CPTs every 1 km plus 10% contingency. **Landfall** Boreholes (or CPTs) every 200 m from MHWS for approx. 1 .5 km. Up to 200 CPTs, 177 vibrocores and 50 Boreholes across all possible export cable routes are proposed.	6 – 12 months per campaign (baseline and pre-construction)

Activity	Proposed Sample numbers / locations	Indicative timings
Geophysical and Unexploded Ordnance (UXO) Surveys	**Array** – Surveys across array to assess ground conditions and to identify possible UXOs. Multibeam echosounder (MBES), Side scan sonar (SSS) and Gradiometer system using several magnetometers, Sub bottom profiler, Multichannel High-resolution acoustic seismic surveys i.e. sparkers. Underwater positioning systems (USBL) will be used for towed equipment. Full coverage of array sites plus 500 m buffer. **Export Cable Routes** Full coverage of all potential cable routes with 500 m buffer. 500 m width maybe exceeded in isolated locations.	6 - 12 months (per survey)
Potting Survey	To Be Determined (TBD) in consultation with the Sea Fisheries Protection Authority (SFPA). Surveys will be designed to undertake pre and post construction samples (rather than to inform EIA baseline). Indicatively may include 10 locations for potting and trawl surveys within array or along cable routes.	Up to 5 days per survey visit, over 12 months (pre-construction)
Trawl Survey	TBD in consultation with SFPA. Surveys will be designed to undertake pre and post construction samples (rather than to inform EIA baseline). Indicatively may include 10 locations for potting and trawl surveys within array or along cable routes.	Up to 5 days per survey visit, over 12 months (pre-construction)
Benthic sampling (likely using a 0.1 m2 Hamon grab)	40-60 across the CWP array 10-20 reference sites 20 along each potential export cable route(s) Single baseline survey (possible repeated pre-construction). Drop down Videos (DDVs) may also be deployed at the same locations. Indicative locations are included in Figure 2.3.	Up to 10 days, (baseline/pre-construction)
Ecological Intertidal Walkover Survey	One per landfall per year 10 samples (sediment and fauna) at each site.	3-5 days including mobilisation
Epibenthic Trawls	TBD but indicative 30 locations within array or along the export cable routes. Single survey for baseline, and possibly repeated pre-construction).	Up to 10 days, (baseline and pre-construction)
Metocean	Floating LIDAR (may include wave buoy sensor(s)): Up to two devices to be deployed at any one time for up to 36 months deployment. Devices may be deployed at the primary and / or alternative locations (indicative locations are shown on Figure 2.1). Up to five wave buoys located within CWP array site. Predicted to use a clump weight or two-point mooring for devices. Buoys up to approx. 3 m diameter.	12-36 months with servicing anticipated to take place every 6 – 12 months.

Activity	Proposed Sample numbers / locations	Indicative timings
	Acoustic Doppler Current Profilers (ADCP's) - three within CWP array boundary at N, S, and W boundaries. It is anticipated that simple clump weight moorings, and anchor will be used. Seabed frames which house ADCP approx. 1.5 x 1.5 x 1 m. Indicative locations are included in Figure 2.1.	
Intertidal Archaeological Walkover Survey	Metal detector survey for archaeology at each landfall. Walkover at each landfall location for archaeological features of interest.	3-5 days including mobilisation
Marine Mammal Acoustics	Echolocation click detectors (PODs) and potentially broadband sound recorders. A maximum of four moorings within, and three lines of moorings positioned to the North-west, East and South-west of, the site boundary. Indicative locations are included in Figure 2.1.	Up to 3 months pre-construction and/or baseline

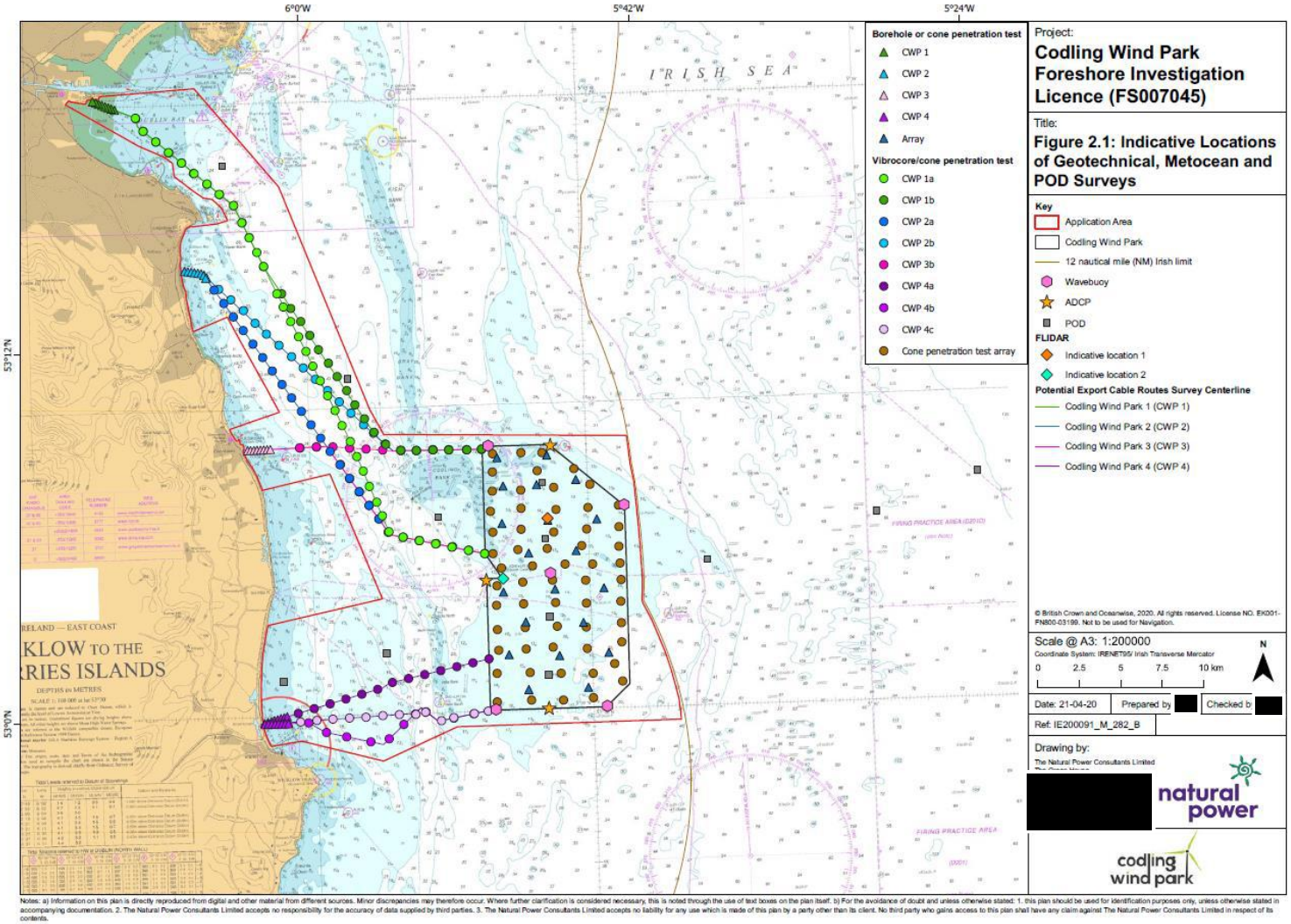

Figure 2: Location of Geotechnical, Metocean and POD Surveys (Source: Licence Application Supplementary Information Report Figure 2.1; not to scale)

4.2.2 Survey Vessels

A variety of survey vessels will be used. The exact vessel types will be defined after the tender process has been completed.

The vessels will conform to the following minimum requirements as appropriate:

- Endurance (e.g. fuel, water, stores, etc.) to undertake the required survey works;
- Appropriate accommodation and messing facilities on board;
- Station-keeping and sea keeping capabilities required by the specified work at the proposed time of year; the appointed contractor may provide supplemental tug assistance if such assistance benefits the operation;
- Staffing to allow all planned work to be carried out as a continuous operation (on a 24 hour per day basis for the offshore activities and on a 12 hour per day basis for the nearshore activities);
- Equipment and spares with necessary tools for all specified works;

Vessels for geophysical surveys are generally between 10-60 m in length and are also suitable for environmental surveys. For deeper water and geotechnical surveys larger 55-90 m vessels may be required. For borehole operations, jack-up barges may be used in order to maintain position.

4.2.3 Survey Methodologies

2.6.1 Geophysical Survey

The geophysical surveys may comprise of the following:

- Multibeam Echosounders (MBES), which is used to provide detailed bathymetric mapping of the seabed.
- Sidescan Sonar (SSS), which is used to image the surface of the seabed for the detection of objects or structures.
- Sub-bottom Profiling (SBP)/Ultra-High resolution seismic (UHRS), which is used to produce a 2D image of the sub seabed geology.
- Marine Magnetometry/Gradiometer, used to locate and identify ferrous objects on or buried in the seabed; and
- Remote Operated Vehicle (ROV), which is used to inspect certain areas of the cable route or areas where there are features of interest within the proposed CWP boundary.

2.6.2 Geotechnical Survey

The geotechnical survey campaign may comprise of:

- Boreholes (array site and export cable landfall locations), a method of collecting sample from the seabed, up to 170 boreholes a proposed across the Application Area.

- Vibrocores (cable routes only), a method of rapidly retrieving continuous, undisturbed core samples from unconsolidated and semi-consolidated sediments. An estimated maximum of 177 Vibrocores will be taken across the Application Area.
- Cone Penetration Testing (CPT) (array site and cable routes), a method of mapping and testing soil profiles on the seabed, a maximum of 260 CPTs are proposed across the Application Area.

2.6.3 Metocean

The proposed metocean campaign may comprise of the deployment of:

- Up to two Floating LiDAR System (FLS) units for wind measurements, which is used to map the topography of the seabed,
- Acoustic Doppler Current Profilers (ADCPs) for subsurface wave and current measurements, which is used to measure water current velocities over a depth range using the Doppler effect of sound waves scattered back from particles within the water column, ; and
- Waverider Buoys, which is used measure wave data such as height and spread.

2.6.4 Benthic and Intertidal Survey

The benthic survey will be designed using analysis of the geophysical survey data available which will be reviewed to stratify sampling according to likely habitat types.

Survey techniques is likely to include;

- Drop Down Video (DDV) at stations where sensitive habitats or hard substrate may be found;
- Deployment of a 0.1m^2 mini Hamon grab at all sediment-based sampling stations;
- Deployment of 0.1 m^2 day or Van Veen grab for contaminated sediment samples;
- Epibenthic Beam Trawl (if required following geophysical and DDV results); and
- Intertidal walkover survey.

2.6.5 Marine Mammal Acoustics

Passive acoustic monitoring (PAM) may be conducted in order to determine baseline levels of dolphin/porpoise echolocation click occurrence and/or to collect data on background noise levels and other vocalisations made by cetaceans e.g. whistles.

2.6.6 Archaeological Surveys

The archaeological surveys will be confirmed through the CWP tendering process in consultation with NMS however it is proposed that two survey methods are utilised.

Surveys likely to be completed:

- Intertidal walkover survey, which is used to survey and record visible archaeological remains within the intertidal, and
- Metal detection survey, which is used to detect metallic objects that may be buried below the surface layers of the intertidal.

2.6.7 Fish and Shellfish Survey

It is currently proposed that no fish or shellfish surveys are undertaken during the baseline site investigation survey campaign. However, a pre-construction survey will be undertaken prior to construction works commencing, this will then be replicated post-construction to allow any changes to the fish and shellfish receptors to be described.

Possible surveys methods are as follows;

- Potting survey, comprising up to ten fleets of 20 pots (e.g. lobster pots) comparable with those used by local fishermen will be set over the Application Area; and
- Otter trawls survey. The trawl survey would use comparable gear to that used locally. Up to 15 stations will be sampled within the application area, and sampling will occur no more than quarterly throughout the year.

4.3 Mitigation Measures proposed in the Licence Application

The mitigation measures proposed in the licence application are presented in Appendix 1.

5 Public and Prescribed Body Consultation

5.1 Public and Prescribed Body Submissions

The submissions received from the public in response to the public consultation, response from the applicant to the submissions and Arup's comments are summarised in Table 2.

Table 3 presents a summary of the observations made by the prescribed bodies and the response from the applicant to the observations.

Table 2: Summary of Submissions from Public, Applicant's Response and Arup Comments

Submission from the Public	**Applicant's response**	**Arup Comment**
Submission 1 (name redacted): Most of the observations in Public Submission 1 relate to the CWP offshore wind park, rather than the surveys, which are the subject of this licence application. Two observations are relevant to this licence application: • *"The effect of granting this application will be to facilitate development of an industrial scale wind farm array development covering hundreds of square kilometres of near-shore waters to progress without it being subject to the appropriate environmental assessments."* • *"The in-combination effects of other wind farm arrays in this location have not been considered in this application within the Environmental Impact Assessment."*	CWPL's response provides clarification that the application is about the survey and not the construction and maintenance of an offshore wind park and addresses each point raise.	The granting of the foreshore licence for the proposed development will provide information for the design and the preparation of a consent application for the offshore wind park. However, under the requirements of the EIA Directive and the Foreshore Acts, when the consent application for the offshore wind park is being determined, it will be subject to an environmental impact assessment which will include an assessment of the cumulative effects with other wind parks.
Submission 2 Coastal Concern Alliance (CCA): The observations made by the CCA relate to the legislation and Government plans and policy which apply to the development of offshore wind parks, including to the proposed development and the CWPL offshore wind park. The observations do not relate to the surveys, which are the subject of this licence application.	CWPL's response provides clarification that the application is about the survey and not the construction and maintenance of an offshore wind park and addresses each point raise.	No comment

Submission from the Public	Applicant's response	Arup Comment
Submission 3 Transport Infrastructure Ireland (TII): TII provides guidance on its requirements, should any part of the proposed development impinge on a national road. TII also provided guidance on the preparation of an environmental impact assessment report for a development which impinged on a national road. The guidance does not relate to the surveys, which are the subject of this licence application.	CWPL's response provides clarification that the application is about the survey and not the construction and maintenance of an offshore wind park and addresses each point raise.	No comment
Submission 4 (name redacted) is an objection to the proposed development on the basis that all works associated with the construction and development of wind turbines at sea would have a detrimental effect on fishing.	CWPL's response clarifies the surveying techniques, and the necessity for them, and provides reassurance of low impact on marine activities.	The likely effects of the proposed development on fishing activities and fish species have been assessed. During the site investigations, temporary exclusion or safe passage zones surrounding vessels and static equipment will be required. The surveys will be carried out over a short time frames, the disturbance will be temporary and there will be no significant impacts on marine species. The mitigation measures proposed include the appointment of fisheries liaison officers (FLOs) to liaise with the fishing industry in order to minimise the disruption to fishing activities during the site investigation activities. The conclusion of the EIA screening, described in **Section 6** below, is that the proposed development is not likely to have a significant effect on the fishing industry.
Submission 5 (name redacted) from Arklow based fishers is an objection to the proposed development on the basis that all works associated with the construction and development of wind turbines at sea would cause irreparable damage to the area, fish stocks, and wildlife.	CWPL's response clarifies the surveying techniques and the necessity for them and provides reassurance of minimal or low impact on fishing.	The likely effects of the proposed development on fishing activities, fish species and wildlife have been assessed. During the site investigations, temporary exclusion or safe passage zones surrounding vessels and static equipment will be required.

Submission from the Public	Applicant's response	Arup Comment
In the past boats were displaced to areas they would (not) traditionally work, which affected the catch as more vessels competed for the same species.		The surveys will be carried out over a short time frames, the disturbance will be temporary and there will be no significant impacts on marine species. The mitigation measures proposed include the appointment of fisheries liaison officers (FLOs) to liaise with the fishing industry in order to minimise the disruption to fishing activities during the site investigation activities. The conclusion of the EIA screening, described in **Section 6** below, is that the proposed development is not likely to have a significant effect on the environment of the area including the seabed, fish stocks and wildlife.
Submission 6 (name redacted): The submission is an objection to the proposed development on the basis that it poses an unquantifiable risk to objector's business and employees, the species he/she fishes and the food web which sustains the biomass.	CWPL's response addresses the points raised and describes the mitigation measures which will be implemented to reduce the impact on fishing activities.	The likely effects of the proposed development on fishing activities, fish species and the food web have been assessed. During the site investigations, temporary exclusion or safe passage zones surrounding vessels and static equipment will be required. The surveys will be carried out over a short time frames, the disturbance will be temporary and there will be no significant impacts on marine species. The mitigation measures proposed include the appointment of fisheries liaison officers (FLOs) to liaise with the fishing industry in order to minimise the disruption to fishing activities during the site investigation activities. The conclusion of the EIA screening, described in **Section 6** below, is that the proposed development is not likely to have a significant effect on the environment, including fish stocks and the habitats and species in the area.

Submission from the Public	Applicant's response	Arup Comment
Submission 7 Irish South and East Coast FPO: Of the seven points of concern listed by the Irish South and East Coast FPO, only the first one relates to the surveys, which are the subject of this licence application. The concern is that the survey works will cause major disruption to the fishing activities in the area, there has been no consultation with the fishing industry, no enquiry as to what might be the least disruptive time to conduct the survey, no analyses as to whether the area is a spawning ground or whether the time period concerned would be a spawning period.	CWPL's response addresses the points raised and states that CWPL will also be undertaking consultation with fishing organisations over the coming weeks and months in order to refine the survey strategy and minimise any potential impacts. Fishing interests will have an opportunity to discuss the survey plans, and their fishing activity with CWPL in advance of surveys being carried out, and in this regard, CWPL welcome any feedback from the Irish South and East Coast FPO.	The likely effects of the proposed development on fishing activities, fish species and spawning grounds have been assessed. During the site investigations, temporary exclusion or safe passage zones surrounding vessels and static equipment will be required. The surveys will be carried out over a short time frames, the disturbance will be temporary and there will be no significant impacts on marine species. The mitigation measures proposed include the appointment of fisheries liaison officers (FLOs) to liaise with the fishing industry in order to minimise the disruption to fishing activities during the site investigation activities. The conclusion of the EIA screening, described in **Section 6** below, is that the proposed development is not likely to have a significant effect on the fishing industry.
Submission 8 (name redacted) relates to the CWP offshore wind park, rather than the surveys, which are the subject of this licence application.	CWPL's response addresses the points raised and describes the mitigation measures which will be implemented to reduce the impact on fishing activities.	No comment
Submission 9: Cllr Joe Behan's submission includes an unspecified concern at the impact of the initial investigation process, which is the subject of this licence application.	CWPL's response provides clarification that the application is about the survey and not the construction and maintenance of an offshore wind park.	The likely effects of the proposed development on the environment have been assessed. The conclusion of the EIA screening, described in **Section 6** below, is that the proposed development is not likely to have a significant effect on the environment.
Submission 10 South East Regional Inshore Fisheries Forum (SE RIFF): A significant part of the submission from the SE RIFF relates to Government policy in relation to the fishing industry and its interaction with offshore wind	CWPL states that the Marine Institute and the Sea Fisheries Protection Authority were consulted prior to submitting the licence application. No fish surveys are required for FILA as a vast selection of data already exists.	The likely effects of the proposed development on fishing activities, fish species and spawning grounds have been assessed.

Submission from the Public	Applicant's response	Arup Comment
developments and the requirement for early consultation with the industry in relation to applications for consent for such developments. Four points relate to the proposed development, which is the subject of this application, as follows: *"We acknowledge that this application is for site investigation works, but we believe that these works can negatively affect the financial viability of the fishing enterprises that inshore fishermen depend on, for their livelihoods. We have concerns about some of the survey techniques referred to in section 1.4 such as Multichannel High-resolution acoustic seismic surveys i.e. boomers/sparkers. Surveys of fish species in consultation/supervision of fisheries representatives and the Marine Institute etc. should take place before the Investigative works applied for in this application and after they are completed to monitor the impact."* *"If the surveys proceed it is imperative that adequate communication take place directly with all fishers etc. to ensure that disturbance is minimised, and fishermen should not suffer financially with a loss to their incomes as a result."* *"Initial survey work and later during construction/installation, where there is a legitimate fear that such activities can cause a reduction in habitat and fish.*	The mitigation measures proposed, as part of the application, include the appointment of fisheries liaison officers (FLOs) to liaise with the fishing industry in order to minimise the disruption to fishing activities during the site investigation. Fishing interests will have an opportunity to discuss the survey plans, and their fishing activity with CWPL in advance of surveys being carried out, and in this regard, CWPL welcome any feedback from SE RIFF. CWPL will be holding in-person or virtual meetings with fishing organisations which will help to explain any survey techniques or other aspects of the project that members are unsure of. The site investigation techniques are described in the Supplementary Information submitted with the licence application.	During the site investigations, temporary exclusion or safe passage zones surrounding vessels and static equipment will be required. The surveys will be carried out over a short time frames, the disturbance will be temporary and there will be no significant impacts on marine species. The conclusion of the EIA screening, described in **Section 6** below, is that the proposed development is not likely to have a significant effect on the fishing industry.

Submission from the Public	Applicant's response	Arup Comment
The fishing industry in general is unfamiliar with survey techniques used and these need to be detailed/explained." *"The onus must therefore be placed on applicants to adequately research fisheries activities and to consult with stakeholders before applying in order to;* • *Validate the extent of fisheries* • *Outline the extent of their intended application and the potential impacts of both the survey methods, construction and long-term impacts.* • *Take onboard the input of the fisheries sector at an early stage."*		

Table 3: Summary of Observations made by Prescribed Bodies, Applicant's Response and Arup Comments

Statutory Body	**Applicant's Response**
Inland Fisheries Ireland (IFI): The timing of the survey works should be considered as well as duration and levels of noises generation, in order to mitigate the potential adverse impacts on fish. IFI proposes mitigation measures for fish, other than commercial marine fish and recommends that investigation be extended so that the ecosystem reflecting the food web and species present is recorded. The survey should record the extent of the nursery habitat for fish species in addition to the commercial species mentioned in the application. The impact of the works on recreational angling target species should be addressed. The effects of a disruption to the migration pathways of migratory Annex II species should be considered. The application does not mention existing foreshore licences and the risk of cumulative effects.	CWPL's response to the IFI provides references to the sections of the Supplementary Information report in which the impacts on fish species, other than commercial marine fish, and existing licences and the risks of cumulative impacts were addressed. CWPL commit to including the IFI's proposed mitigation measures.
Marine Institute: The Marine Institute submission is that it is satisfied that the site investigations as proposed will not have a significant impact on the marine environment in the survey area and will not have a significant impact on other legitimate uses / users of the area. The Marine Institute recommends conditions to be attached to the licence.	CWPL, in its response to Marine Institute, commits to implementing the mitigation measures proposed in the application and the licence conditions.
Sea Fisheries Protection Agency (SFPA): The SFPA refers to consultation with the applicant in 2020 and makes no further comment.	No response
Marine Survey Office (MSO): The MSO states it had no objections to the application and lists its requirements in relation to provision of information to various maritime organisations, prior to the commencement of the works.	CWPL, in its response to MSO, confirms that the specified information exchange is underway.
National Parks and Wildlife Unit (NPWS): The NPWS agrees with the conclusions of the Natura Impact Statement submitted as part of the application, provided the mitigation measures are implemented. It recommends that adherence to "*Guidance to Manage the Risk to Marine Mammals from Man-made*	No response

Statutory Body	Applicant's Response
Sound Sources in Irish Waters" (DCHG, 2014) is added as a condition of consent if applicable.	
Underwater Archaeology Unit (UAU): The UAU recommends that the archaeological mitigation measures detailed in the Supplementary Information report are carried out in full and are included as conditions in the granting of any planning permission.	CWPL, in its response to UAU, states that the archaeological mitigation measures detailed in the application report will be implemented.
Department of Agriculture, Food and the Marine (DAFM): The DAFM lists conditions to be attached to any licence. Particular concern was expressed in relation to protecting mussel stocks.	CWPL, in its response to DAFM, responds to each proposed condition, including addressing the concerns in relation to mussel stocks in the EIAR for the wind park.

6 EIA Screening

6.1 General

Article 4 of Environmental Impact Assessment (EIA) Directive (Council Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment, as amended by Directive 2014/52/EU), imposes the requirement for an EIA for the projects, to which the Article applies. These projects are listed in Annexes I and II of the Directive. For Annex I projects, an EIA is mandatory. Member States must determine if an EIA is mandatory for Annex II projects. Member States must make the determination through (a) a case-by-case assessment or (b) thresholds or criteria set by the member State.

The Foreshore Acts are nos. 12 of 1933, 17 of 1992, 54 of 1998 and 11 of 2011 ("Foreshore Acts") transpose this requirement into Irish law. Foreshore Acts section 13A as inserted by the European Union Foreshore Regulations 2009, SI 404 of 2009 is as follows:

"13A.— *(1)(a) The appropriate Minister shall, as part of his consideration of a relevant application, in accordance with paragraph (b), ensure that, before a decision on the application is given, projects likely to have significant effects on the environment by virtue, inter alia, of their nature, size or location are made subject to an environmental impact assessment.*

(b) (i) An environmental impact assessment shall be carried out by the appropriate Minister in respect of a relevant application for consent where the proposed development would be of a class specified in—

(I) Part 1 of Schedule 5 of the Planning and Development Regulations 2001,
and either—

(A) such development would exceed any relevant quantity, area or other limit specified in that Part, or
(B) no quantity, area or other limit is specified in that Part in respect of the development concerned,

or

(II) Part 2 of Schedule 5 of the Planning and Development Regulations 2001 and either—

(A) such development would exceed any relevant quantity, area or other limit specified in that Part, or
(B) no quantity, area or other limit is specified in that Part in respect of the development concerned.

(ii) An environmental impact assessment shall be carried out by the appropriate Minister in respect of a proposed development where such development—

(I) would be of a class specified in Part 2 of Schedule 5 of the Planning and Development Regulations 2001 but does not exceed the relevant quantity, area or other limit specified in that Part, and

(II) the appropriate Minister determines that the proposed development would be likely to have significant effects on the environment."

The projects, for which an EIA is mandatory, are listed in Part 1 of Schedule 5 of the Planning and Development Regulations, SI 600 of 2001, as amended. Annex II projects are addressed in Part 2 of Schedule 5. For most project classes, a threshold is specified. There are a number of classes which require a case by case assessment. An EIA is also required for projects, which do not exceed the threshold, but the Minister determines that the proposed development would be likely to have significant effects on the environment.

6.2 Screening for Mandatory EIA

Part 1 of Schedule 5

The proposed development is not a project type or class listed in Part 1 of Schedule 5 on the Regulations.

Part 2 of Schedule 5

One class listed in Part 2 of Schedule 5 on the Regulations was considered.

"Class 2 Extractive Industry

2 (e) With the exception of drilling for investigating the stability of the soil, deep drilling, consisting of—

(iv) any other deep drilling, except where, in considering whether or not an environmental impact assessment should be carried out—

(IV) it is decided, in accordance with section 13A of the Foreshore Act 1933 (No. 12 of 1933) (in this subparagraph referred to as the "Act of 1933"), by the appropriate Minister (within the meaning of the Act of 1933) that the drilling concerned would not have a significant effect on the environment,

The proposed development includes a geotechnical investigation, comprising 120 boreholes offshore in the area of the array. An unspecified number of boreholes or cone penetration tests (CPTs) will be drilled at the landfall, described in Table 2.1 of the Supplementary Information as "boreholes or CPTs every 200m from MHWS for approx. 1.5km". Fifty boreholes will be drilled across all possible export cable routes. Vibrocores will be drilled every 1km along cable corridors and 177 vibrocores will be drilled across all possible export cable routes.

No indication is given of the depth to which the boreholes will be drilled. The vibrocores will penetrate up to 5m into the seabed.

In Part 1, Section 1.1 of the Application Form, the purpose of the proposed development is explained as follows:

> *"The proposed investigative works are required to provide updated environmental and engineering information to inform design and the environmental assessments (e.g. Habitat Regulation Assessments (HRA) and EIA) required for the consenting of the CWP OWP."*

Introducing the proposed project, it is stated in Section 2.1 of the Supplementary Information that:

> "*In order to inform the concept design phases at CWP and provide information to inform the EIA and the production of the CWP Environmental Impact Assessment Report (EIAR), there is a need to carry out investigative works."*

Section 2.2 of the Supplementary Information presents the objectives of the proposed project as follows:

"The main aims and objectives of the proposed surveys are to:

- *Provide up to date detailed bathymetric mapping of the seabed;*
- *Provide further information on the nature and morphology of the seabed at Codling Bank;*
- *Provide detailed information ground conditions and geology;*
- *Obtain up to date wind resource and metocean data for the site; and*
- *To generate environmental and ecological data to inform the EIA and HRA for the main Codling Wind Park project and to determine the presence of any potentially sensitive features of interest or protected features in and around the site."*

From the above, it can be concluded that the purpose of the site investigation is not *"drilling for investigating the stability of the soil".*

The European Commission has published guidance (European Commission 2015) on the interpretation of the projects listed in the annexes to the EIA Directive. In relation to the projects of a class in listed in Annex II (2) (d) of the Directive, which is the equivalent to class 2(e)(iv)(IV) in Part 2 of Schedule 5, the Guidance states on page 43:

> *"Member States have different thresholds defining deep drilling. Some Member States have adopted a general threshold beyond which the drilling is considered deep (e.g. 300 m). Other Member States have taken into account the type of drilling to fix the threshold (e.g. geothermal drillings and drillings for water supply are considered deep if exceeding 500 m, while the threshold for drillings for nuclear waste storage is 100 m).*

The depth of the drilling should not be the sole screening criterion in assessing the likely significance of the environmental impact. The screening should take into account all the relevant criteria listed in Annex III to the EIA Directive. The overall characteristics of the project should be taken into account. Even a small-scale project (e.g. exploration or drilling in the range of only several metres) can have significant effects on the environment if it is in a location where the environmental factors, such as fauna and flora, soil, water, climate or cultural heritage, are sensitive to the slightest alteration."

Consequently, the proposed project cannot be excluded from Part 2 of Schedule 5 class 2(e)(iv)(IV). An EIA is required except where the Minster decides "*that the drilling concerned would not have a significant effect on the environment."*

6.3 Screening of Significance of Effects on Environment

In determining if the project will have significant environmental effects, the screening exercise should have regard to the relevant criteria listed in Annex III to the EIA Directive, which is as follows:

*"**Annex III Selection Criteria Referred To In Article 4(3)** (criteria to determine whether the projects listed in annex ii should be subject to an environmental impact assessment)*

*1. **Characteristics of projects***

The characteristics of projects must be considered, with particular regard to:

(a) the size and design of the whole project;

(b) cumulation with other existing and/or approved projects;

(c) the use of natural resources, in particular land, soil, water and biodiversity;

(d) the production of waste;

(e) pollution and nuisances;

(f) the risk of major accidents and/or disasters which are relevant to the project concerned, including those caused by climate change, in accordance with scientific knowledge;

(g) the risks to human health (for example due to water contamination or air pollution).

*2. **Location of projects***

The environmental sensitivity of geographical areas likely to be affected by projects must be considered, with particular regard to:

(a) the existing and approved land use;

(b) the relative abundance, availability, quality and regenerative capacity of natural resources (including soil, land, water and biodiversity) in the area and its underground;

(c) the absorption capacity of the natural environment, paying particular attention to the following areas:

(i) wetlands, riparian areas, river mouths;

(ii) coastal zones and the marine environment;

(iii) mountain and forest areas;

(iv) nature reserves and parks;

(v) areas classified or protected under national legislation; Natura 2000 areas designated by Member States pursuant to Directive 92/43/EEC and Directive 2009/147/EC;

(vi) areas in which there has already been a failure to meet the environmental quality standards, laid down in Union legislation and relevant to the project, or in which it is considered that there is such a failure;

(vii) densely populated areas;

(viii) landscapes and sites of historical, cultural or archaeological significance.

3. ***Type and characteristics of the potential impact***

The likely significant effects of projects on the environment must be considered in relation to criteria set out in points 1 and 2 of this Annex, with regard to the impact of the project on the factors specified in Article 3(1), taking into account:

(a) the magnitude and spatial extent of the impact (for example geographical area and size of the population likely to be affected);

(b) the nature of the impact;

(c) the transboundary nature of the impact;

(d) the intensity and complexity of the impact;

(e) the probability of the impact; (f) the expected onset, duration, frequency and reversibility of the impact;

(g) the cumulation of the impact with the impact of other existing and/or approved projects;

(h) the possibility of effectively reducing the impact."

While only one component of the proposed development, drilling boreholes, is potentially of a class for which an EIA is required, the environmental effects of all components of the proposed development will be screened, in accordance with DHPCLG (2018) Guidance.

6.4 Adequacy of Information

Arup considered that there was sufficient information in the licence application and supporting documents to decide whether the proposed development would or would not have a significant effect on the environment.

6.5 European Commission Guidance Checklist

The European Commission (EC) Guidance on EIA Screening (EC, 2017) provides a checklist to address the Annex III requirements and help users decide whether EIA is required based on the characteristics of the project and its environment. This screening checklist is presented in **Table 4** below.

Table 4: Screening Checklist to determine if EIA is required based on the characteristics of a project and its environment

Brief Project Description	**Yes/No**	**Is this likely to result in a significant impact** **Yes/No - Why**
1. Will construction, operation or decommissioning of the project involve actions which will cause physical changes in the locality (topography, land use, changes in waterbodies, etc.)?	Yes. The geotechnical survey will cause changes to the seabed and potentially release silt into the waterbody. There will be benthic grab sampling in the area of the array and ecological sampling of the intertidal area. There will be no topographic or land use changes.	No. The area of the array is 123km^2. A total 120 boreholes and 60 CPTs are proposed over this area. Along the offshore cable routes 1 vibrocore and CPT per km, at the landfall 1 borehole or CPT every 200m, and 200 CPTs, 177 vibrocores and 50 boreholes are proposed along the export cable routes. In Figure 2.1 these locations appear to be circa 1km apart. The CPTs may be inserted in the boreholes or set on a 8 – 10m^2 ballasted frame on the seabed. The vibrocores will be 150mm in diameter. The diameter of the boreholes is not provided but typically would be circa 200mm to 300mm. The vessel or jack-up barge, used for the geotechnical investigation, will anchor to the seabed. The static survey equipment will comprise 2 LIDAR devices, 5 wave buoys and three acoustic doppler current profilers located in the array These will be moored with clump weights or anchored to the seabed. There will be nine echolocation click detectors anchored to the seabed, four in the array and two to the west, and three outside the study area to the east. There will be circa 100 benthic grab samples, using a 0.1m^2 grab. Up to 10 fleets of 20 whelk pots will be set on the seabed, for 24 hours, at quarterly intervals, pre and post construction. Tracked vehicles will be used on intertidal foreshore to access this area for surveys. The geophysical survey will identify the location of reefs and no intrusive works will be undertaken in reef areas.

Brief Project Description	Yes/No	Is this likely to result in a significant impact Yes/No - Why
		The seabed in the study area is highly mobile and regularly disturbed by natural processes. Any sediment disturbed by the works will settle almost immediately. Given the large area, 515km^2, over which the operations will be carried out and given the type of equipment to be deployed, the relative area of the seabed, which will be disturbed, will be very small and the physical changes to the seabed and water column will be negligible.
2. Will construction or operation of the project use natural resources such as land, water, materials or energy, especially any resources which are non-renewable or in short supply?	Yes. The surveys will be conducted by vessels using fuel, which is non-renewable but is not in short supply. The survey equipment is generally re-useable.	No. Relative to the consumption of fuel by shipping and transport in Ireland, the quantities will not be significant.
3. Will the project involve use, storage, transport, handling or production of substances or materials which could be harmful to human health or the environment or raise concerns about actual or perceived risks to human health?	Yes. No specific material associated with the survey, which could be harmful to human health or the environment or raise concerns about actual or perceived risks to human health, will be used, stored, transported, handled or produced. Boreholes will use water or biodegradable polymer-based drill muds. However, the vessels conducting the surveys will use fuels and carry lubricants etc which have the potential to be harmful to the environment, if released.	No. Strict maritime regulations, normal vessel operating standards and precautions will ensure the risk of a release is low and that a significant effect is unlikely.
4. Will the project produce solid wastes during construction or operation or decommissioning?	Yes. Drill cuttings, consisting of the seabed material, will be produced by the borehole drilling operations. The other surveys will produce minimal waste. The vessels conducting the surveys will produce solid waste in small quantities as a part of normal vessel operations.	No. The drill cuttings will be returned to the drill vessel. The survey vessels will comply the MARPOL Convention on Marine Pollution. All solid wastes will be retained on the vessels, returned to shore and disposed of to suitable licensed facilities.

Brief Project Description	Yes/No	Is this likely to result in a significant impact Yes/No - Why
5. Will the project release pollutants or any hazardous, toxic or noxious substances to air or lead to exceeding Ambient Air Quality standards in Directives 2008/50/EC and 2004/107/EC?	No, other than routine vessels exhausts. Air Quality standards will not be exceeded.	No.
6. Will the project cause noise and vibration or release of light, heat energy or electromagnetic radiation?	Yes. The geophysical survey may include multibeam echosounders, sidescan sonar, sub bottom profilers, ultra-high resolution seismic and ultrashort baseline, all of which use acoustic technology and transmit and receive sound energy below the water surface. Drilling the boreholes, vibrocores and CPTs will also cause noise below the water surface. The vessels conducting the surveys will emit engine noise below the water surface. The vessel engines and drilling equipment will also result in noise above the water surface. The vessels conducting the survey and the static equipment will be lit at night, with standard navigation lights.	No. The noise sensitive receptors include marine mammals, some fish, seabirds, wildfowl and waders. The impacts on the birds and marine mammals, which are the qualifying interests of Natura 2000 sites or European protected species, were assessed in the NIS. The NIS concluded that, with the implementation of the specified mitigation measures, the proposed development alone or in combination with other activities and developments, would not cause an adverse effect on the integrity of any Natura 2000 site. The impact of noise generated by the proposed activities on other species of birds and fish was assessed and determined not to be significant. Mitigation measures will be implemented to minimise the impact of the operations on marine mammals, fish and birds. There is minimal potential for the emissions of noise, vibration and light to impact human beings.
7. Will the project lead to risks of contamination of land or water from releases of pollutants onto the ground or into surface waters, groundwater, coastal waters or the sea?	Yes. The vessels conducting the surveys will use fuels and carry lubricants etc which have the potential to be harmful to the environment, if accidentally released.	No. The survey vessels will comply the MARPOL Convention on Marine Pollution. Strict maritime regulations, normal vessel operating standards and precautions will ensure the risk of a release is low and that a significant effect is unlikely.
8. Will there be any risk of accidents during construction or operation of the project which could affect human health or the environment?	Yes. The proposed surveys will involve activities on the survey vessels at sea, which pose the risk of accidents which could affect human health or the environment.	No. Strict maritime regulations, normal operating standards and safety precautions, employment of Fisheries Liaison Officers, issuance of Notices to Mariners alerting the vessels in the area of the survey activities, and a navigation risk assessment will ensure the risk of an accident will minimal.

Brief Project Description	Yes/No	Is this likely to result in a significant impact Yes/No - Why
	There is also an increased risk of collisions between survey vessels and other vessels in the area or between other vessels in the area and the static survey devices.	
9. Will the Project result in social changes, for example, in demography, traditional lifestyles, employment?	No. The proposed project is relatively small in scale. Social change is very unlikely.	No.
10. Are there any other factors which should be considered such as consequential development which could lead to environmental effects or the potential for cumulative impacts with other existing or planned activities in the locality?	Yes. It is proposed that the CWP would be developed following the proposed development. There are proposals for other offshore wind parks to both the north and south of the study area.	No. The consequential development of the CWP and other offshore wind parks in the area will be subject to environmental impact assessment prior to approval.
11. Is the project located within or close to any areas which are protected under international, EU, or national or local legislation for their ecological, landscape, cultural or other value, which could be affected by the project?	Ecological: Yes. The north-western part of the application area encroaches on the South Dublin Bay and River Tolka Estuary SPA and South Dublin Bay SAC. The northern part of the application area encroaches on the Rockabill to Dalkey Island SAC. The south-western part of the application area encroaches on The Murrough SPA. The southern part of the application area encroaches on the Wicklow Reef SAC. The Sandymount Strand/Tolka Estuary SPA, Dalkey Islands SPA, Wicklow Head SPA, North Bull Island SPA and North Dublin Bay SAC are close to the application area. There is a potential connectivity to the Slaney River Valley SAC, Lower River Suir SAC, Blackwater River SAC and River Barrow and River Nore SAC. There is considered to be connectivity, with respect to marine mammals, to SACs on the Welsh Coast, Moray Firth SAC in Scotland and SACs on the Irish west and south-west coasts.	Ecological: No. A Natura Impact Statement was submitted as part of the application. The NIS concluded that, with the implementation of the specified mitigation measures, the proposed development alone or in combination with other activities and developments, would not cause an adverse effect on the integrity of any Natura 2000 site. The NPWS was consulted and, in its observation, agreed with the conclusion of the NIS. Cultural Heritage: No. The geophysical survey will identify the location of any wrecks or other potential cultural heritage features, which will be avoided by the intrusive survey activities. With the implementation of the specified mitigation measures no significant effects on underwater or intertidal archaeology are likely.

Brief Project Description	Yes/No	Is this likely to result in a significant impact Yes/No - Why
	Cultural Heritage: Yes. There are a number of wrecks in the application area including 24 wrecks or seabed obstructions protected under the National Monuments Acts, being more than 100 years old.	
12. Are there any other areas on or around the location which are important or sensitive for reasons of their ecology e.g. wetlands, watercourses or other waterbodies, the coastal zone, mountains, forests or woodlands, which could be affected by the project?	Yes. Parts of the coastal zone lies within the application area but outside a designated Natura 2000 site.	No. With the implementation of the specified mitigation measures, the proposed development is not likely to cause a significant adverse effect to the ecology of the coastal zone.
13. Are there any areas on or around the location which are used by protected, important or sensitive species of fauna or flora e.g. for breeding, nesting, foraging, resting, overwintering, migration, which could be affected by the project?	Yes. Natura 2000 sites on or around the area of the proposed development are listed in Q11. The application area is used for migrating/transiting species including marine mammal, fish and birds. The application area encroaches on the spawning and/or nursery areas for Cod, Haddock, Whiting, Mackerel and Horse mackerel.	No. With the implementation of the specified mitigation measures, the proposed development is not likely to cause a significant adverse effect on migrating/transiting species or on fish.
14. Are there any inland, coastal, marine or underground waters (or features of the marine environment) on or around the location that could be affected by the project?	Yes. The application area comprises coastal and marine waters. Refer to Q3, Q5, Q7 and Q8 above.	No. Refer to Q3, Q5, Q7 and Q8 above. With the implementation of the specified mitigation measures, the proposed development is not likely to cause a significant adverse effect on coastal and marine waters.
15. Are there any areas or features of high landscape or scenic value on or around the location which could be affected by the project?	Yes. Views to seaward from Dublin Port southwards to Wicklow town are of scenic value.	No. The survey vessels will be active for the duration of the survey work which will be a maximum of 12 months. The static survey equipment will be on station for a maximum of 36 months. The inshore area from Dublin Port southwards to Wicklow is used by a lot of marine traffic. The survey vessels and static equipment will not be a noticeable visual intrusion.

Brief Project Description	Yes/No	Is this likely to result in a significant impact Yes/No - Why
16. Are there any routes or facilities on or around the location which are used by the public for access to recreation or other facilities, which could be affected by the project?	Yes. The inshore waters are used by recreational craft. The potential landfall sites are used for recreation.	No. There will be exclusion zones around the survey vessels when they are operating, which may disrupt or displace recreational craft. This disruption will be temporary and there are adequate alternative areas for these craft. The intertidal and subtidal shoreline surveys at the landfalls will be of very short duration, 3 – 5 days, and will have minimal effect on the public recreation.
17. Are there any transport routes on or around the location which are susceptible to congestion or which cause environmental problems, which could be affected by the project?	No. The waters inshore of the Codling Bank are used by commercial vessels, fishing boats and recreational craft. The waters to seaward of the Codling Bank are used mainly by commercial vessels and fishing boats, with limited recreational craft. The areas are not susceptible to congestion.	No. Access to Dublin Port, Dun Laoghaire, Greystones and Wicklow may be reduced for the duration of the survey activities in the immediate vicinity. Mitigation measures will include Notices to Mariners, appropriate navigation lights and liaison with marinas and sailing clubs. The disruption will be temporary and short term.
18. Is the project in a location where it is likely to be highly visible to many people?	Yes. There are many vantage points along the coastline from Dublin Port to Wicklow town, and many popular recreational areas, from which the application area is visible.	No. The inshore area from Dublin Port southwards to Wicklow is used by a lot of marine traffic. The survey vessels and floating buoys will not be a noticeable visual intrusion.
19. Are there any areas or features of historic or cultural importance on or around the location which could be affected by the project?	Yes. Refer to Q11.	No. Refer to Q11.
20. Is the project located in a previously undeveloped area where there will be loss of greenfield land?	No.	No.
21. Are there existing land uses on or around the location e.g. homes, gardens, other private property, industry, commerce, recreation, public open space, community facilities, agriculture, forestry, tourism,	Yes. The inshore waters are used by recreational craft. Refer to Q16 and Q17.	No. Refer to Q16 and Q17.

Brief Project Description	Yes/No	Is this likely to result in a significant impact Yes/No - Why
mining or quarrying which could be affected by the project?		
22. Are there any plans for future land uses on or around the location which could be affected by the project?	No. The proposed future use of the area is the Codling Offshore Wind Park	No. The consent application for the Codling Offshore Wind Park will be subject to an EIA.
23. Are there any areas on or around the location which are densely populated or built-up, which could be affected by the project?	No.	No.
24. Are there any areas on or around the location which are occupied by sensitive land uses e.g. hospitals, schools, places of worship, community facilities, which could be affected by the project?	No.	No.
25. Are there any areas on or around the location which contain important, high quality or scarce resources e.g. groundwater, surface waters, forestry, agriculture, fisheries, tourism, minerals, which could be affected by the project?	Yes. The application area is used for commercial fish, primarily for potting for whelk. Creel fishing for crab and lobster is undertaken in the vicinity of the codling bank and inshore off Dalkey and Killiney Bay. Seed mussel grounds are located between the Codling Bank and the coast from Greystones southwards. There are low levels of pelagic trawling and little or no demersal trawling. The east coast of Ireland is a renowned location for recreational angling, with both shore and boat-based angling carried out along this coastline. The species targeted include Pollack, wrasse, codling, ray and tope.	No. The presence of survey vessels and static equipment may cause temporary loss or restricted access to fishing grounds and may temporarily displace fishing activity to other areas. Fishermen with static gear such as whelk/lobster/crab pots will be asked to remove the posts for the duration of the survey (6 to 12 months). It will be necessary for the fishermen to avoid the static survey equipment, which will have a very small footprint. The resulting effect on static gear fisheries will be very small and of short duration. As there are extensive alternative fishing grounds available in the wider area, the effect on commercial static gear fisheries fishery is expected to be negligible. Fisheries Liaison Officers will be employed to liaise with the fishing community to minimise disruption. The survey activities may result in the same temporary disruption or displacement to boat-based recreational angling as to commercial fishing.

Brief Project Description	Yes/No	Is this likely to result in a significant impact Yes/No - Why
		The effects would be temporary, localised and there are alternative fishing grounds available. The survey activities will affect a very limited area of the shore for a very short time period and there alternative fishing grounds available.
26. Are there any areas on or around the location which are already subject to pollution or environmental damage e.g. where existing legal environmental standards are exceeded, which could be affected by the project?	No.	No.
27. Is the project location susceptible to earthquakes, subsidence, landslides, erosion, flooding or extreme or adverse climatic conditions e.g. temperature inversions, fogs, severe winds, which could cause the project to present environmental problems?	Yes. The proposed development location is susceptible to fog and severe weather conditions.	No. The survey vessels and static equipment will be appropriate for the weather conditions likely to be experienced. The mitigation measures proposed, including adherence to strict maritime regulations, and normal vessel operating standards and precautions will ensure the risk from severe weather or fog will not present environmental problems.

Using the EC Guidance checklist, no feature of the proposed development or its interaction with the surrounding environment, was identified, which is likely to result in a significant environmental effect.

6.6 Conclusion of EIA Screening

The conclusion of the EIA Screening is based on the following:

- the information provided in the licence application,
- implementation of the mitigation measures proposed in the licence application,
- the submission from the public,
- the observations of the statutory consultees,
- imposition of the licence conditions proposed by the Marine Institute, Inland Fisheries Ireland, Marine Survey Office, National Parks and Wildlife Service and Department of Agriculture, Food and the Marine, and
- compliance with those licence conditions.

The nature, scale and location of the proposed development is such that there is no real likelihood of significant effects on the environment arising from the proposed development. It is the conclusion of Arup's EIA screening exercise that an EIA is not required.

7 Environmental Appraisal

Arup undertook an appraisal of the environmental effects of the proposed development based on the information provided in the licence application and the observations of the statutory consultees.

7.1 Population and human health

The proposed site investigation and surveys will be undertaken at sea, primarily in the offshore wind park area, some distance from the coast. The primary interaction with the population will be with commercial and recreational fishing, commercial shipping and recreational boating. The surveys of the potential export cable routes at the landfalls may impinge on other recreational users of the shoreline.

7.1.1 Commercial and Recreational Fishing

Commercial Fishing

The application area is used for commercial fish, primarily for potting for whelk. Creel fishing for crab and lobster is undertaken in the vicinity of the codling bank and inshore off Dalkey and Killiney Bay. Seed mussel grounds are located between the Codling Bank and the coast from Greystones southwards. There are low levels of pelagic trawling and little or no demersal trawling in the area.

The presence of survey vessels and static equipment, and the exclusion zones around them, may cause temporary loss or restricted access to fishing grounds and may temporarily displace fishing activity to other areas. Fishermen with static gear such as whelk/lobster/crab pots will be asked to remove the posts for the duration of the survey (6 to 12 months). It will be necessary for the fishermen to avoid the static survey equipment, which will have a very small footprint. The resulting effect on static gear fisheries will be very small and of short duration. As there are extensive alternative fishing grounds available in the wider area, the effect on commercial static gear fisheries fishery is expected to be negligible. Fisheries Liaison Officers will be employed to liaise with the fishing community to minimise disruption.

Recreational Fishing

The east coast of Ireland is a renowned location for recreational angling, with both shore and boat-based angling carried out along this coastline. The species targeted include Pollack, wrasse, codling, ray and tope.

The survey activities may result in the same temporary disruption or displacement to boat-based recreational angling as to commercial fishing. The effects would be temporary, localised and there are alternative fishing grounds available. As the survey activities will affect a very limited area of the shore for a very short time period and there alternative fishing grounds available, the effect on recreational angling is expected to be negligible.

7.1.2 Commercial Shipping

The waters inshore of the Codling Bank are used by commercial vessels, in addition to fishing boats and recreational craft. The waters to seaward of the Codling Bank are used mainly by commercial vessels and fishing boats, with limited recreational craft. The shallow water over the Codling bank prevents vessels passing in close proximity to it.

The potential effects on commercial shipping include an increased risk of collision with the static survey equipment and with the survey vessels. There will be exclusion zones around the survey vessels when they are operating, which may disrupt or displace shipping. Access to Dublin Port, Dun Laoghaire, Greystones and Wicklow may be reduced for the duration of the survey activities in the immediate vicinity of the potential landfalls. Mitigation measures will include compliance with the regulations and standards, Notices to Mariners, appropriate navigation lights and liaison with Port authorities. As the surveys and disruption will be temporary and short term, the effect on commercial shipping is expected not to be significant.

7.1.3 Recreational Boating

The waters inshore of the Codling Bank are used by recreational craft. The waters to seaward of the Codling Bank are used mainly by commercial vessels and fishing boats, with limited recreational craft.

There will be exclusion zones around the survey vessels when they are operating, which may disrupt or displace recreational craft. This disruption will be temporary and there are adequate alternative areas for these craft. Access to Dublin Port, Dun Laoghaire, Greystones and Wicklow may be reduced for the duration of the survey activities in the immediate vicinity of the potential landfalls. Mitigation measures will include Notices to Mariners, appropriate navigation lights and liaison with marinas and sailing clubs. As the disruption will be temporary and short term, the effect on recreational boating is expected not to be significant.

7.1.4 Other Recreational Users

The shore at the potential landfall sites is used by the public for recreation.

The intertidal and subtidal shoreline surveys at the landfalls will be of very short duration, 3 – 5 days, and will have minimal effect on the public recreation.

7.2 Biodiversity

7.2.1 Natura 2000 Sites

The north-western part of the application area encroaches on the South Dublin Bay and River Tolka Estuary SPA and South Dublin Bay SAC. The northern part of the application area encroaches on the Rockabill to Dalkey Island SAC. The south-western part of the application area encroaches on The Murrough SPA. The southern part of the application area encroaches on the Wicklow Reef SAC.

The Sandymount Strand/Tolka Estuary SPA, Dalkey Islands SPA, Wicklow Head SPA, North Bull Island SPA and North Dublin Bay SAC are close to the application area. There is a potential connectivity to the Slaney River Valley SAC, Lower River Suir SAC, Blackwater River SAC and River Barrow and River Nore SAC. There is considered to be connectivity, with respect to marine mammals, to SACs on the Welsh Coast, Moray Firth SAC in Scotland and SACs on the Irish west and south-west coasts.

An Appropriate Assessment Screening report and Natura Impact Statement were submitted with the licence application. The NIS concluded that, with the implementation of the specified mitigation measures, the proposed development alone or in combination with other activities and developments, would not cause an adverse effect on the integrity of any Natura 2000 site. The NPWS was consulted in the course of consideration of the licence application. In its observation, the NPWS agreed with the conclusion of the NIS.

7.2.2 Marine Mammals

Seven species of marine mammals are considered to occur regularly in the Irish Sea. These are Harbour porpoise, Minke whale (*Balaenoptera acutorostrata*), Risso's dolphin (*Grampus griseus*), Bottlenose dolphin, Common dolphin (*Delphinus delphis*), Grey seal, and Harbour seal.

The geophysical survey may include multibeam echosounders, sidescan sonar, sub bottom profilers, ultra-high resolution seismic and ultrashort baseline, all of which use acoustic technology and transmit and receive sound energy below the water surface. The survey vessels and geotechnical investigation equipment will emit also sound below sea level. These sound emissions may pose a risk to marine mammals. The survey activities also pose a risk of collision to marine mammals.

A European Protected Species Risk Assessment, which addressed the potential impacts on the seven species of marine mammals likely to be found in the survey area, was included in the licence application. The conclusion of the Assessment was that:

- the impact of sound produced by operation of equipment used during the proposed geophysical survey work is unlikely to be detrimental to the maintenance of the populations of the species concerned at a favourable conservation status in their natural range.
- There is no/negligible potential for the sounds emitted by the proposed geotechnical surveys to induce auditory injury. The displacement of European protected species as a result of noise from geotechnical surveys can be considered 'trivial' and is very unlikely to be detrimental to the maintenance of the populations of the species concerned at favourable conservation status level in their natural range.
- The potential for collision with vessels was considered to be extremely unlikely.

7.2.3 Birds

The bird surveys undertaken in the study area and offshore wind park area identified the following seabird species as being particularly significant in relation to proposed development: fulmar (*Fulmarus glacialis*), Manx shearwater (*Puffinus puffinus*), gannet (*Morus bassanus*), shag (*Phalacrocorax aristotelis*), kittiwake (*Rissa tridactyla*), herring gull (*Larus argentatus*), little tern (*Sternula albifrons*), roseate tern (*Sterna dougallii*), common tern (*Sterna hirundo*), Arctic tern (*Sterna paradisaea*), guillemot (*Uria aalge*) and razorbill (*Alca torda*). Several migratory goose and swan species were also identified, namely: Greenland white-fronted goose (*Anser albifrons flavirostris*), pale-bellied brent goose (*Branta bernicla hrota*), greylag goose (*Anser anser*), Bewick's swan (*Cygnus columbianus*) and whooper swan (*Cygnus cygnus*).

The potential impacts on birds from the proposed works are considered to be:

- Increased above water noise from geophysical surveys and geotechnical works,
- Increased below water noise from geophysical surveys, geotechnical works, and
- Increased visual disturbance from geophysical surveys, geotechnical works and phase one walkover surveys and archaeological intertidal surveys

All other surveys are considered to have no potential route to impact for birds, directly or indirectly.

Different species of birds vary in their response to noise. It is considered that, with the implementation of the mitigation measures specified in the Supplementary Information Report, there is negligible potential for significant effects to seabirds to arise due to the noise emissions or visual disturbance from proposed development.

7.2.4 Fish

The shellfish species which are present in the application area and are of commercial importance are the whelk (*Buccinum undatum*), mussel (*Mytilus edulis*), razor clam (*Ensis* sp.), crab (*Cancer pagurus)* and lobster (*Homarus Gammarus*). *Nephrops norvegicus* are also known to be present in the wider area. The marine fish found in the vicinity of the Application Area include herring (*Clupea harengus*), plaice (*Pleuronectes platessa*), haddock **(***Melanogrammus aeglefinus*), Cod (*Gadus morhua*), whiting (*Merlangius merlangus*), sole (*Solea solea*), ling (*Molva molva*), megrim (*Lepidorhombus whiffiagonis*), monkfish (*Lophius piscatorius*) and skates and rays, including blonde (*Raja brachyura*) and thornback rays (*Raja clavata*).

There are a number of rivers on the south and east coast of Ireland which have been designated as SAC for Annex II migratory fish (i.e. sea lamprey, river lamprey, Atlantic salmon and twaite shad).

Although these SAC rivers are not marine, the migratory fish, for which they were designated, have a marine phase of the lifecycle. These species rely on the sea to migrate to feeding grounds before returning to rivers to spawn.

Both the European eel (*Anguilla anguilla*) and seatrout (*salmo trutta*) have a marine phase of their life cycle.

A range of fish and shellfish species are known to spawn or have nursery grounds which overlap the Application Area. These include cod and haddock spawning areas and mackerel, horse mackerel, cod and haddock nursery areas. While the area of Codling bank is known for blonde and thornback rays, it is not known if they spawn there or simply where they aggregate.

The potential sources of impact on fish and shellfish species from the proposed work are:

- Underwater noise
- Temporary habitat disturbance

Underwater noise from the proposed geophysical survey work only has the potential to affect those species which have the capacity to perceive underwater noise. The species which can perceive underwater noise are unlikely to be aggregated in large numbers in the Application Area, and do not rely on this area for key life history stages. Any individuals that are present are likely to move away from the area of work. As the predicted underwater noise levels are of low magnitude, short in duration and of a limited spatial extent, there is negligible potential for any effects on these species to arise from the proposed survey work. The temporary and mobile nature of the surveys will limit exposure of mussels, whelks, crab and lobster, and reduce any effects from underwater noise.

It is considered that the surveys and metocean deployment will cause temporary habitat disturbance to such a small area of the seabed coupled, with the whelk's ability to move and recolonise disturbed areas, and also its extensive habitat preferences, any effects on this species to arise from the proposed survey work are considered to be negligible.

Mussels are entirely sessile and attach themselves to rocks and other hard substrates. Given this immobile life cycle, this species may be potentially affected by temporary habitat disturbance. It is considered however that, given that the surveys will affect such a small area of the seabed, and that re-colonisation of any affected areas would be possible on cessation of this temporary activity, that the only effects on this species to arise from the proposed survey work are considered to be negligible.

7.2.5 Benthic and Intertidal Habitats

Codling Bank forms part of a series of banks in the Irish Sea which runs approximately 10 km offshore parallel to the coast, standing in 20 – 30 m of water and rising to within metres of the water's surface.

The banks reflect the principal tidal currents in the region and the strong currents and sediment movements have resulted in a series of punctuated banks from north to south from Dundalk Bay to Wexford.

INFOMAR data suggest that the most likely substrate type at the Codling Bank is coarse sediment with some sand in a patchy distribution surrounding the proposed site. All of which are exposed to the strong hydrodynamic movements in the area. There is likely to be a low proportion of fine fractions within the sediment and low organic carbon content. Other notable habitats within the Application Area include areas of finer sediments and muds, in inshore sheltered areas, near to and within Dublin Bay, and areas of rocky reef habitat with associated epifaunal communities.

Four potential landfall locations have been identified and the intertidal habitats within the Application Area include areas of rocky coastline interspersed with sections of sandy beaches. In more sheltered areas, vegetated intertidal habitats such as seagrass beds and salt meadows can be present, in addition to extensive mudflats and sandflats.

The potential routes to impact for benthic and intertidal habitats (from the proposed work are considered to be:

- Habitat disturbance / loss from geotechnical, benthic (and intertidal), fish/shellfish and metocean surveys; and
- Increased suspended sediment concentration / smothering from geotechnical, benthic and metocean surveys;

The assessment of the risk of increased suspended sediment concentration, determined that the low levels of suspended sediment concentration expected to arise as a result of the survey work, and the generally tolerant nature of the subtidal and intertidal habitats to such increases in suspended sediment concentration, ensure there would be no effect significant on subtidal and intertidal habitats from any increases in suspended sediment concentration from survey activities.

It was concluded that there will be negligible to no potential for any significant effects on benthic habitats from the small scale and temporary activities proposed.

7.3 Water, air, climate

7.3.1 Water

The survey activities will mainly be undertaken at sea. Drilling the boreholes will use water or biodegradable polymer-based drill muds. There will be no planned release of potentially harmful substances from the survey vessels.

The geotechnical survey, the benthic grab sampling in the area of the array and the ecological sampling in the intertidal area will potentially cause an increased in the suspended sediment concentration in the water column. The vessels conducting the surveys will use fuels and carry lubricants etc which have the potential to be harmful to the environment, if released.

Given the large area, 515km^2, over which the survey operations will be carried out and the type of equipment to be deployed, the relative area of the seabed, which will be disturbed, will be very small and the an increased in the suspended sediment concentration in the water column will be negligible. The mitigation measures, including compliance with the MARPOL Convention on Marine Pollution, and normal vessel operating standards and precautions will ensure the risk of a release is low and that a significant effect is unlikely.

7.3.2 Air

There will be no releases to air, other than routine vessels exhausts. Air Quality standards will not be exceeded. There is not likely to be a significant effect on the environment.

7.3.3 Climate

The survey will be conducted over a relatively short timeframe and effects due climate change will not arise.

The vessels and plant undertaking the survey will use fossil fuels and will emit greenhouse gases. However, given the small scale of the operation, the emission of greenhouse gases is not expected to be significant in the context of the overall emission of greenhouse gases in Ireland.

7.4 Material assets, cultural heritage and landscape

7.4.1 Material Assets

The survey operation will make use of existing port assets. The survey vessels and plant will use fuel and other consumables. Drill cuttings, consisting of the seabed material, will be produced by the borehole drilling operations. The other surveys will produce minimal waste. The vessels conducting the surveys will produce solid waste in small quantities as a part of normal vessel operations.

The port assets have ample capacity for all the survey operation requirements. The drill cuttings will be returned to the drill vessel. All solid wastes will be retained on the vessels, returned to shore and disposed of to suitable licensed facilities. There is not likely to be a significant effect on material assets, as a result of the proposed development.

7.4.2 Cultural Heritage

There are a number of wrecks in the application area including 24 wrecks or seabed obstructions protected under the National Monuments Acts, being more than 100 years old.

The geophysical survey will identify the location of any wrecks or other potential cultural heritage features in the survey area, which will be avoided by the intrusive survey activities. With the implementation of the specified mitigation measures no significant effects on underwater or intertidal archaeology are likely.

7.4.3 Landscape and Seascape

Views to seaward from Dublin Port southwards to Wicklow town are of scenic value and there are many vantage points along the coastline from Dublin Port to Wicklow town, and many popular recreational areas, from which the application area is visible.

The inshore area from Dublin Port southwards to Wicklow is used by a lot of marine traffic. The survey vessels and static equipment will not be a noticeable visual intrusion on the seascape.

7.5 Major Accidents and Disasters

The project location is not susceptible to earthquakes, subsidence, landslides, erosion, flooding. The proposed development location is susceptible to fog and severe weather conditions.

The survey vessels and static equipment will be appropriate for the weather conditions likely to be experienced. The mitigation measures proposed, including adherence to strict maritime regulations, and normal vessel operating standards and precautions will ensure the risk from severe weather or fog will not present environmental problems.

8 References

Department of Communications, Climate Action and Environment *Guidance on EIS and NIS Preparation for Offshore Renewable Energy Projects* (2017)

Department of Housing, Planning, Community and Local Government (2018) *Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment (August 2018)*

European Commission *Directive 2014/52/EU of the European Parliament and of the Council of 16 April 2014 amending Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment (2014)*

European Commission *Guidance on EIA Screening* (2017)

European Commission *Interpretation of definitions of project categories of annex I and II of the EIA Directive* (2015)

Planning and Development Regulations SI 600 of 2001, as amended by *SI 404 of 2018 European Union (Planning and Development) (Environmental Impact Assessment) (no 2) Regulations of 2018*

Appendix 1

Mitigation Measures proposed in the Licence Application

The mitigation measures for marine mammals are listed in Section 7 of the European Protected Species Report. The other mitigation measures are set out in the Supplementary Information report.

Marine Mammals

The potential for auditory injury from the proposed survey work is nil/negligible therefore, no mitigation (to reduce the risk of auditory injury) is considered necessary to protect European protected species.

However, the DAHG (2014) guidance outlines measures which are applicable to all seismic surveys (including the testing and full operational use of airguns, water guns, sparkers, boomers and vertical seismic profiling (VSP) or checkshot systems) in Irish waters[5]. It is therefore proposed that the measures outlined below be followed for the UHRS survey and check-shot logging work only.

Pre-start survey

As the proposed surveys are to be conducted in waters of less than 200 m deep, the pre-start survey will commence a minimum of 30 minutes prior to the scheduled start time. For all pre-start surveys, a monitored zone of 500 m will be employed, i.e. if a marine mammal is observed within 500 m of the sound source in the 30 minutes prior to the scheduled start, works will be delayed until no marine mammals have been observed in the monitored zone for 30 minutes. If the marine mammals do not leave the area, the survey vessel may alter its course to ensure that the animals are outside the monitored zone when the soft start commences. The Marine Mammal Observer (MMO) will use a distance measuring stick or reticule binoculars to ascertain distances to marine mammals.

A qualified and experienced MMO will be appointed to monitor for marine mammals and to log all relevant events using standardised data forms provided by the DAHG. In order to allow 24-hour working, or for work to commence when visual observation is not possible due to weather conditions or sea state, a proven Passive Acoustic Monitoring (PAM) system and experienced operator(s) will be employed to undertake pre-start surveys during these times.

Soft Start

A soft start is the gradual ramping of power over a set period of time. The UHRS and check-shot logging equipment is assumed to have this capability inbuilt.

Once the soft start commences, there is no requirement to halt or discontinue the procedure at night-time, if weather or visibility conditions deteriorate, or if marine mammals enter the monitored zone (500 m radial distance of the sound source).

The following ramp up procedure will be undertaken in line with the DAHG (2014) guidance:

1) Energy output will commence from a low energy start-up and be allowed to gradually build up to the necessary maximum output over a period of up to 40 minutes.

2) This controlled build-up of energy output will occur in consistent stages to provide a steady and gradual increase over the ramp-up period.

3) If marine mammals enter or are detected within the monitored zone while the ramp-up procedure is under way but incomplete, the energy output will not be increased until the marine mammals are no longer within the monitored zone.

Line changes and breaks in survey periods

Where the duration of a survey line or station change is greater than 40 minutes, the activity will, on completion of the line/station being surveyed, either cease (i.e., shut down) or

preferably undergo a reduction in energy output to a lower state where the peak sound pressure level from any operating source is 170 dB re 1 µPa @ 1 m. Prior to the start of the next line/station, if the power was shut down, all pre-survey monitoring measures and soft start procedures will be followed as for start-up. If there has been a reduction in power, a soft start will be undertaken gradually from the lower output level. The latter sound reduction measure may be applied to line changes at night-time or in daytime conditions of poor visibility. Where the duration of a survey line/station change is less than 40 minutes the activity will continue as normal (i.e. under full output).

If there is a break in sound output for a period greater than 10 minutes (e.g., due to equipment failure, shut-down, survey line/station change) then all pre-survey monitoring measures and ramp-up (soft start) will recommence prior to re-starting.

Reporting

Full reporting on operations and mitigation will be provided to the DAHG to facilitate reporting under Article 17 of the EC Habitats Directive and future improvements to guidance (DAHG, 2014).

Birds

In-keeping with the precautionary approach and following the undertaking of a HRA (see Appendices 2 and 3) the following mitigation is considered appropriate to conclude that there will be no adverse effect in site integrity for the following SPA:

The Murrough SPA

- **Restriction of any survey works within 2 km SPA boundary from September-March inclusive (wintering period)**

  The benefit of this proposed mitigation is two-fold; for birds in proximity of shore and those in the marine habitat. The 2 km restriction during this period prevents any significant effect from visual, above water or underwater disturbance or displacement to the sensitive red throated diver wintering population. Secondly, this buffer provides additional precaution to all of the wintering assemblages that qualify as features of this SPA, which could be adequately mitigated using a 1 km buffer. This restriction is appropriate for mitigating effects to over wintering red-throated divers designated at this SPA.

- **Restriction of any survey works within 1 km of breeding little tern colony (May- July Inclusive)**

  The proposed restriction reduces any potential pathway for impact and thus any adverse effect on the little tern breeding colony from any terrestrial / intertidal survey activities, but also offers additional protection to this species as little tern are restricted in their foraging range, comparative to other species and sensitive to disturbance from vessel presence and noise. A 1 km restriction from the SPA boundary between Kilkool and Newcastle train stations is considered appropriate and adequate mitigation.

Sandymount strand/South Dublin SPA

- **Restriction of any survey works within 1 km of SPA boundary from September March inclusive (wintering period).**

  This proposed restriction will serve to eliminate any potential impact from the surveys to the wintering geese and waterbird assemblages.

- **Restriction during of the staging tern period (mid-July- September):**
  - Any work in the SPA (including vessel based, walkover surveys or work undertaken by tracked vehicles) will only be permissible within daylight hours between 0900 and 1700; and
  - Outside daylight hours, no work within the SPA boundary, or within 100 m of the SPA boundary is permitted.

- **Restriction of works within 200 m of breeding tern pontoons April-July inclusive (tern breeding season)**

  Breeding colonies of common and arctic terns are a designated feature of this SPA, breeding on pontoons in the harbour estuary CDL (coal distribution LTD) dolphin; ESB (Electricity supply board) dolphin; Pontoon No. 1 located North of Dublin port in the Tolka Estuary; and Pontoon No 2. located by the great south wall). Despite this being a busy and noisy waterway and arctic terns being low in terms of sensitivity to disturbance, terns can react to boats in immediate proximity to the pontoons. As such a precautionary buffer of 200 m will prevent any survey activities near the pontoons for the duration of the tern breeding season.

Natural Fish

No mitigation is considered to be required for natural fish receptors.

Benthic and intertidal habitats

Mitigation proposed in order to minimise effects on benthic and intertidal habitats (including Annex I habitats) includes:

- Geophysical surveys will identify any area which can be considered reef, and these will be avoided where possible by intrusive survey / sampling techniques (benthic grab / epibenthic beam trawl / geotechnical studies / metocean or POD) or sampled by DDV for benthic surveys.
- Ensure all jacks associated with geotechnical survey works, or placement of metocean devices are positioned to avoid any known reef features (identified from the geophysical survey).
- All borehole operations will use water or biodegradable polymer-based drilling muds only and will have a system in place to return drill cuttings to the vessel for appropriate disposal.
- All work undertaken in the intertidal by tracked vehicles will avoid the *Zostera* dominated community, the boundary of which will be delineated through an intertidal survey of the area prior to such work commencing.
- • Movement of tracked vehicles in the intertidal will be restricted to the minimum number of access tracks necessary to achieve the sampling. This will reduce areas of compaction allowing rapid recovery of the small area affected after the cessation of the work, ensuring the natural condition of the feature is maintained.
- Works on the intertidal using a tracked vehicle will be overseen by an Ecological Clerk of Works.

Commercial fisheries

The following mitigation measures will be applied and adhered to:

- A FLO will be in place prior to and during commencement of survey works.

- Compliance with Convention on the International Regulations for Preventing Collisions at Sea, 1972 ('COLREGS') (IMO, 1972) and International Convention for the Safety of Life at Sea ('SOLAS') regulations.
- Circulation of information via Marine Notices, Radio Navigational Warnings, NAVTEX, and/or broadcast warnings in advance of and during survey works. Information will also be circulated to local ports, harbours and marinas in the area. The notices will include a description of the work being carried out.

Navigational Safety

The survey contractor and vessels will be similar to those that are currently used in the market for similar surveys and be responsible for complying with international and national statute as appropriate.

A non-exhaustive list of examples includes:

- S.I. No. 507/2012 - Merchant Shipping (Collision Regulations) (Ships and Watercraft on the Water) Order 2012.
- Sea Pollution Act 1991 which transposes into Irish statute the requirements of the International Convention for the Prevention of Marine Pollution from Ships (MARPOL 73/78)
- Sea Pollution (Amendment) Act, 1999 - which gives effect to the International Convention on
- Oil Pollution Preparedness, Response and Co-operation, 1990 (OPRC).
- S.I. No. 372/2012 - Sea Pollution (Prevention of Pollution by Garbage from Ships) Regulations 2012.
- S.I. No. 492/2012 - Sea Pollution (Prevention of Pollution by Sewage from Ships) (Amendment) Regulations 2012

Key mitigation measures for the reduction of navigational risk associated with the proposed surveys and deployment of metocean buoys are as follows:

- Arrangements will be made for the publication of a formal Marine Notices through the Department of Transport, Tourism and Sport (DTTAS) and the notice will provide vessel and contact details together with a general description of operations and approximate dates of marine survey commencement and completion, deployment timing and location of fixed monitoring equipment.
- During the survey operations and deployment and recovery of fixed monitoring equipment, other vessels will be requested to maintain a safe distance from survey vessels due to the restricted manoeuvrability and the layback of survey equipment towed behind the survey vessels.
- Survey Vessel speed will be of the order of 4 knots during surveys.
- Lights, shapes and other internationally recognised identification or warning signals will be displayed on survey vessels and any fixed monitoring equipment deployed to the surface.

- The vessels will comply fully with all requirements of the International Regulations for Preventing Collisions at Sea.
- The Harbour Master at both Dublin, Dún Laoghaire, and Wicklow ports will be informed of the Plan of Work and of the planned start and estimated completion dates for the operation. Regular updates shall be provided.
- Statutory Sanction approval for deployment of static equipment will be obtained from Commissioners of Irish Lights. The Statutory Sanction process will be informed by a more detailed Navigational Risk Assessment (NRA) once final locations of activities are known (as informed by geophysical surveys where appropriate). Mitigation measures identified as part of the NRA process will be agreed with Commissioner of Irish Lights.
- Lighting and marking requirements will be agreed with the Commissioner of Irish Lights prior to commence of the works / deployment of survey equipment,
- Charting requirements will be agreed with DTTAS Marine Survey Office.

Underwater Archaeology

The following measures are included as embedded mitigation in the application:

- Where cultural heritage assets may potentially be subject to direct or indirect impacts, Archaeological exclusion zones (AEZ) will be implemented to prevent potential impacts from anchoring of survey vessels, sample retrieval and moorings;
- Exclusion zones of at least 100 m will be established around sites identified as being of high vulnerability, while an exclusion zone of a minimum 50 m will be established around those of medium vulnerability.
- Geophysical survey data will be subject to archaeological analysis and submission to the UAU. This will be used to refine and finalise any mitigation measures required;
- Should further survey or investigation confirm the nature and characteristics of an identified asset then an AEZ can be maintained or removed as appropriate and in consultation and agreement with National Monuments Service;
- The implementation and monitoring (where appropriate and agreed) of the AEZs will be undertaken;
- In order to mitigate the risk of damage to any previously unrecorded archaeological remains a Protocol for Archaeological Discoveries (PAD) will be prepared to mitigate impacts in the event of any unexpected archaeological discoveries during the surveys. This protocol will also include appropriate archaeological briefings for all personnel involved in the activities associated with the proposed scope of works.

- Should it not be possible to avoid sites of cultural heritage interest, a full programme of archaeological investigation, which may include diver survey or Remotely Operated Vehicle (ROV) investigation, will be undertaken to identify the nature and extent of these sites. Subject to these investigations an appropriate mitigation strategy will be agreed with NMS.

5.8 Condition Compliance

Any conditions applied to the Foreshore Investigation Licence, if granted, will be adhered to by all parties involved in the delivery of the programme of works. Contractors, and their subcontractors, will be made aware of all conditions and project specific requirements and will be required to have briefings on these to ensure all parties are aware of these requirements.