



Part 1B: Planning Report

Kish Offshore Wind Ltd.

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Dublin Array Offshore Wind Farm

Planning Report

January 2025

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Dublin Array Offshore Wind Farm

Planning Report

January 2025

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Issue and Revision Record

Revision	Date	Originator	Checker	Approver	Description
PL	31.01.25	G. Reid/ J. Myers	L. Gough	D. McCormack	Final for Issue

Document reference: 229100714-RP-30

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1 Introduction

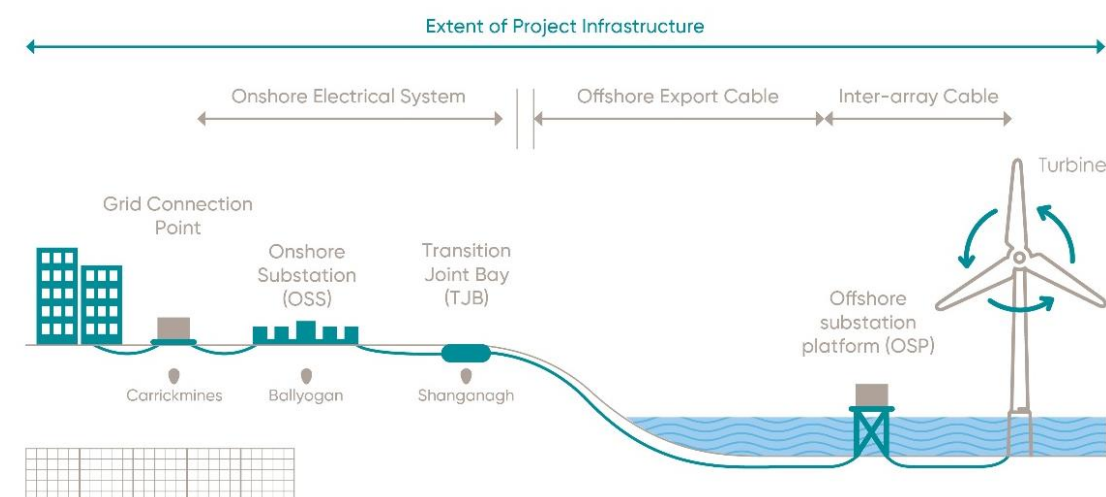
1.1 Project Overview

Mott MacDonald Ireland Limited has been appointed by Kish Offshore Wind Limited and Bray Offshore Wind Limited to prepare a planning report to accompany a planning application for both the onshore and offshore components of the proposed Dublin Array Offshore Wind Farm (hereinafter referred to as 'Dublin Array' or the proposed development).

Dublin Array comprises of a proposed offshore wind farm, associated onshore electrical transmission infrastructure and an Operations and Maintenance Base. The offshore wind farm (turbine array and offshore substation platform) will be located approximately 10 km off the coast of counties Dublin (Dún Laoghaire-Rathdown) and Wicklow, at the Kish and Bray Banks, with the onshore electrical system infrastructure located within County Dublin (all within the administrative boundary of Dún Laoghaire-Rathdown County Council). The offshore development components will comprise submarine inter-array cabling which will connect to a 220 kV offshore substation, and two connecting 220 kV submarine export cables. The two 220 kV submarine export cables will connect the offshore substation to two onshore transition joint bays located at Shanganagh Cliffs, Shankill, County Dublin. The onshore underground cables from the transition joint bays will connect to an onshore substation with a connection thereafter to the national electricity transmission grid at the existing Carrickmines 220 kV electricity substation.

The proposed overall development also includes an Operation and Maintenance Base at Dún Laoghaire Harbour.

Figure 1.1: Overview of Project Infrastructure



Source: RWE

An Environmental Impact Assessment Report (EIAR), Natura Impact Statement (NIS) and Water Framework Directive Assessment (WFD) have been prepared in respect of the proposed development. This Planning Report forms part of the planning application documentation being submitted to An Bord Pleanála to support the planning application.

1.2 The Applicant

The Applicant for the planning application is Kish Offshore Wind Limited. The application is being made by the Applicant as a joint holder of a maritime area consent ('MAC') for three parts of the maritime area:

- MAC Ref 2022-MAC-003 and 004 (held jointly by Kish Offshore Wind Limited and Bray Offshore Wind Limited)
- MAC Ref MAC20230012 (held jointly by Kish Offshore Wind Limited and Bray Offshore Wind Limited)
- MAC Ref MAC240020 (held jointly by Kish Offshore Wind Limited, Bray Offshore Wind Limited, and Dún Laoghaire Rathdown County Council)

Kish Offshore Wind Limited and Bray Offshore Wind Limited are each a subsidiary (Special Purpose Vehicle companies), owned by RWE Renewables and Saorgus Energy, who are together developing the project.

Kish Offshore Wind Limited and Bray Offshore Wind Limited hold a Maritime Area Consent (MAC) for the proposed development of an offshore wind farm in addition to MACs within Dún Laoghaire Harbour for the proposed Operations and Maintenance Base.

RWE Offshore Wind is a part of the RWE Group, which is one of the world's leading renewable energy companies. The company is contributing significantly to the success of the energy transition and the decarbonisation of the energy system, with around 20,000 employees located in almost 30 countries worldwide. RWE has extensive experience in developing, building, and operating offshore wind farms, both independently and with partners.

RWE is a global leader in offshore wind, operating 19 offshore wind farms globally, these include Triton Knoll (857 megawatts (MW)), Rhyl Flats (90 MW), Gwynt y Môr (576 MW), Rampion (400MW) and Galloper (353 MW) in the UK, as well as delivering Thornton Bank (325 MW) in Belgium, Amrumbank West (302 MW) off the island of Heligoland, Kaskasi Offshore Wind Farm (342 MW), Nordsee One (332 MW) and Nordsee Ost (295 MW) in Germany.

Alongside its partners RWE is developing extension projects at four of its UK offshore wind farms - Gwynt y Môr (Awel y Môr) Galloper Five Estuaries), Rampion (Rampion II) and the joint venture Greater Gabbard (North Falls) Wind Farms. RWE is also developing projects off the English coast on the Dogger Bank in the North Sea and in the Norfolk Offshore Wind Zone in addition to projects in the United States and Asia Pacific. RWE's ongoing construction projects include the Sofia wind farm (1.4 GW) off the British coast, the Thor offshore wind farm (1.1 GW) in Denmark, the North Sea cluster (1.6 GW) north of the German island of Juist and the OranjeWind Offshore Wind Farm (JV) (795 MW) in the Netherlands.

Since its formation in 1993, Saorgus Energy Limited has been actively involved in the development of both onshore and offshore wind farms on high wind-speed sites. Saorgus Energy were granted the first foreshore licences for the application site in 2000 to conduct surveying to inform site specific design. At present Saorgus Energy has over 200 MW of onshore wind power in development.

1.3 Strategic Project Need

The need for the proposed development is set out in detail in Volume 2, Chapter 2.2 of the EIAR accompanying the planning application to An Bord Pleanála. Notwithstanding, this section of the Planning Report also provides an outline high-level and strategic need context for the proposed development.

Ireland has recognised the urgency of transitioning to a low-carbon economy, and has put in place in recent years the firm legal instruments and policy framework to enforce its commitment to renewable energy development including offshore wind. Ireland's GHG emissions reduction targets per the revised Effort Sharing Regulation are not currently being met, requiring deeper reductions as we approach 2030. Ireland's ambitions to significantly decarbonise the transport and industrial sectors relies entirely on the development of renewables at scale, which can only be achieved by offshore projects. Dublin Array aligns with the EU's ambitious renewable energy targets and with the UN's Sustainable Development Goals under Agenda 2030, and reflects the objectives outlined in national strategies such as the Climate Action Plan, the National Biodiversity Action Plan, the National Energy and Climate Plan, the National Marine Planning Framework and the National Planning Framework and its draft revision.

Moreover, Dublin Array not only contributes to increasing Ireland's renewable energy capacity but also strengthens the onshore infrastructure through its connection to the national grid. EirGrid, as the Transmission System Operator, plays a crucial role in integrating this renewable energy into the grid, thus facilitating a sustainable and secure energy future for the country. The favourable policy context for the proposed development, combined with local planning support, ensures that the project will effectively contribute to meeting both national and European energy goals while advancing Ireland's transition to a greener economy.

The origins of the Dublin Array project, which has been in development since 1999, can be traced back to the Kyoto Protocol, adopted on 11 December 1997, which sought to operationalise the United Nations Framework Convention on Climate Change through limiting and reducing greenhouse gas (GHG) emissions and begin the reduction of Ireland's reliance on traditional fossil fuel generation, which was the primary electricity generation source on the island of Ireland. In 1990, the total contribution from renewable energy to gross electricity consumption in Ireland, stood at only 4.9%¹.

Since 1997, the need to decarbonise energy generation has been reiterated by the United Nations, most recently in the Paris Agreement, and through European Union (EU) legislation. The urgency at which decarbonisation is to be achieved has also hastened, with European Union binding targets now transposed at a national level to achieve net zero emissions by the year 2050.

Historically, the shaping of the maritime environment was regulated under the Foreshore Act 1933 as amended; however, adoption of the Maritime Spatial Planning Directive 2014/89/EU was a catalyst for reforming marine planning and development legislation for Ireland.

The publication of the Offshore Renewable Energy Development Plan (OREDPP) by Department of Communications, Energy and Natural Resources in February 2014, preceded Directive 2014/89/EU (published in July 2014). The main aim of the OREDPP was to establish scenarios for the development of offshore renewables in Irish waters up to 2030 and set out a longer-term vision for the growth of the offshore renewable energy sector. The OREDPP clearly outlines the central nature that the development of offshore wind energy plays in the overall energy policy for Ireland, and the opportunity it presents in achieving carbon emission targets, enhancing security of supply and the development of a renewable energy export market.

The new maritime consenting regime within the State underpinned by the Maritime Area Planning Act, 2021 as amended and the Planning and Development Act, 2000 as amended, which was heralded by Directive 2014/89/EU, provides a new plan-led approach to development

¹ Energy in Ireland 1990-2011 (2012 Report) pg.37, Sustainable Energy Authority of Ireland (SEAI, November 2012) https://www.teagasc.ie/media/website/crops/crops/Energy_in_Ireland_1990_-_2011.pdf accessed 12.04.2023

within the marine area which seek to help achieve long-term climate and energy commitments and ambitions, which are required to be developed in a planned, strategic and sustainable way.

Dublin Array will help Ireland decarbonise its electricity supply and meet our climate goals of 80% renewable energy by 2030; this includes offshore wind energy, of which Ireland has an ambitious target to achieve at least 5 GW by 2030 under the Climate Action Plan. The project will also continue to help Ireland decarbonise for the lifetime of the project (approximately 35 years).

Subject to the final procurement and detailed design stage of the project, Dublin Array will provide up to 824 MW of offshore wind generated renewable electricity. This figure equates to approximately 16% of the 2030 target of 5 GW as set out in the Climate Action Plan 2021, and subsequent 2023 and 2024 action plans. Dublin Array will supply enough clean green electricity to supply the equivalent of up to 840,000 average Irish homes. This is amidst the backdrop of a rapidly increasing population in Ireland, which has been predicted to potentially increase by 832,100 people by 2036, with a 426,500 increase estimated to occur in Dublin alone, during the same period².

Dublin Array will therefore help to address the climate crisis through the provision of a large, decarbonised energy source and aid in Ireland meeting its legal carbon reduction targets as set out in the Climate Action and Low Carbon Development (Amendment) Act, 2021.

1.4 Legislative Context of Application

The Kish Offshore Wind Limited and Bray Offshore Wind Limited projects were confirmed as “Relevant Projects” by the Department of Housing, Planning and Local Government and the Department of Environment, Climate and Communications on 19 May 2020. The Maritime Area Consent for Dublin Array (No. 2022-MAC-003 and 004), were two of a total of seven MACs granted by the Minister for the Environment, Climate and Communications, with a commencement date of 23 December 2022.

The Maritime Area Planning Act 2021, as amended (MAPA), establishes a Marine Area Consent (MAC) as the initial step of the new planning regime. It also legislates for “Relevant Projects” to proceed through Phase 1 of the MAC process. As initially noted, Phase 1 MACs were issued to a number of companies (including Kish Offshore Wind Limited and Bray Offshore Wind Limited) following an assessment of technical and financial capability, in accordance with the MAPA. The MAC grants the applicant permission to enter the development consent process i.e. planning consent, and on foot of obtaining planning consent, permission to construct and operate the proposed development (subject to all necessary consents being secured).

Two separate MACs have been obtained for the development of the associated Operation and Maintenance Base proposed to be located on and adjacent to St. Michael's Pier, Dún Laoghaire Harbour (MAC240020 [O&M Base] and MAC20230012 [the proposed pontoon], respectively).

The Maritime Area Consents (2022-MAC-003 and 004, MAC20230012 and MAC240020) for Dublin Array are included within the Statutory Planning Particulars - Schedule 3 Maritime Area Consents.

The proposed development has been subject of pre-application consultations with An Bord Pleanála (ABP) under Section 287(1) of the Planning and Development Act, 2000, as amended.

² Central Statistics Office <https://www.cso.ie/en/releasesandpublications/ep/p-rpp/regionalpopulationprojections2017-2036/regionalpopulationprojectionsresultsoverview/> (accessed 16.09.2024) reference made to scenario M2F2 (Dublin Inflow - moderate)

Further details of the pre-application consultations with An Bord Pleanála are included in Section 6 of this report.

The Applicant obtained an Opinion on Flexibility from An Bord Pleanála pursuant to Section 287B(2) of the Planning and Development Act 2000, as amended. This Opinion permits the Applicant to include a degree of flexibility within their planning application in recognition of advancing technological evolutions relating to offshore renewable energy infrastructure. Current technology may be superseded before wind turbine generators for Dublin Array can be procured, subsequent to consent being granted. Agreement on parameters or options which are unconfirmed have therefore been agreed with An Bord Pleanála, in advance of the submission of the planning application. The Opinion on Flexibility has been included within the planning application (contained within Schedule 10 of the Statutory Planning Particulars).

In accordance with the legislative provisions as outlined above, following closure of the Section 287 pre-application process with An Bord Pleanála and confirmation by way of the decision/Order from the Board of same, the planning application for both the proposed maritime (offshore) and onshore components of the project, is therefore being submitted to An Bord Pleanála under Section 291 of the Planning and Development Act 2000, as amended.

1.5 Purpose and Structure of this Report

This Planning Report provides an overview of the need for the proposed development, in the context of Ireland's present and future needs to achieve climate action targets. The Planning Report thus identifies and considers the existing policy context for the proposed development in the context of relevant EU, national, regional and local planning strategy, plans and policy documents, and provides an assessment of the potential impact of the project in respect of relevant planning policies and objectives, which highlights the proposed development's consistency and alignment with same.

The structure of this report is outlined in Table 1.1.

Table 1.1: Report Structure

Chapter Number	Chapter Title	Description of Contents
1	Introduction	This chapter sets out the background to the proposed development, including the strategic planning need and legislative context.
2	Description of the Development	This chapter outlines all elements of the proposed development.
3	Planning Context	This chapter provides an overview of planning policy throughout the planning hierarchy and how the proposed development is consistent with the realisation of these planning policies and objectives. It also sets out the land use and zoning context of the onshore component of the proposed development, relative to the provisions of the Dún Laoghaire-Rathdown Development Plan 2022-2028.
4	National Maritime Planning Framework: Statement of Consistency	Reviews and details how the proposed development is consistent with the provisions of the National Marine Planning Framework.
5	Planning History	This chapter outlines the planning and development consent history of the proposed development including development under MAPA and the Foreshore Act 1933, as amended, within the application boundary. This chapter details consented projects or future projects within the surrounding environs which may overlap or interact with the proposed development, and also includes a review of land use zoning applicable to onshore development.
6	Stakeholder Consultation Overview	Provides an overview of the stakeholder consultation and community benefits the proposed development may provide.
7	Planning Appraisal	This chapter provides an overview of the assessments undertaken to support this application, and a summary of the main environmental and planning considerations.
8	Conclusion	Provides an overall conclusion on the project's accordance with proper planning and sustainable development of the area.

2 Description of Development

2.1 Introduction

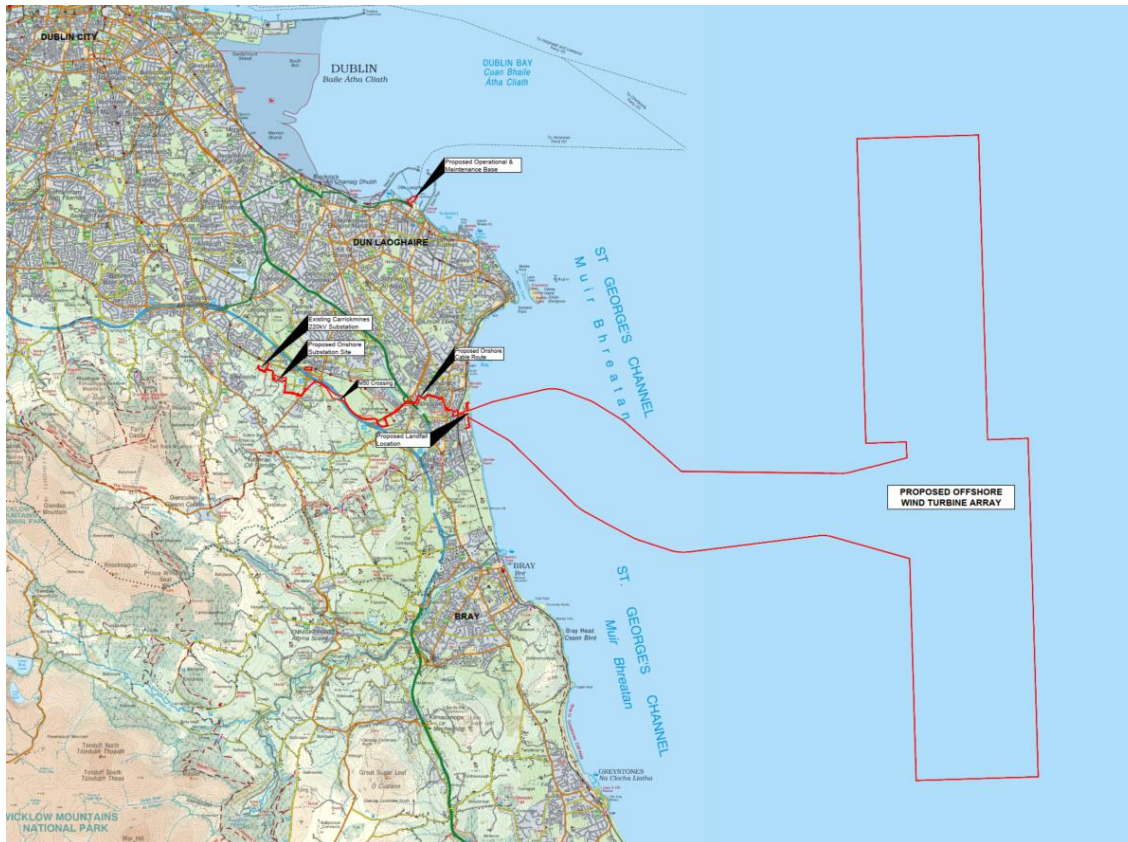
The proposed development will provide for both onshore and offshore (in the maritime area) works and this chapter provides a detailed description of all the main elements.

In summary, the project requires the installation of onshore cabling to connect the electricity generated by the proposed offshore wind farm array to the national grid via a new onshore substation. The onshore connection point to the national grid will be at the existing Carrickmines 220 kV substation, in the townland of Jamestown, Carrickmines, County Dublin. The export cables will come ashore at Shanganagh Cliffs, and will traverse underground through, public roads, footpaths and adjoining areas of public open spaces and private lands to the proposed onshore substation in the townland of Jamestown, County Dublin. The grid connection from the proposed onshore substation will connect to Carrickmines 220 kV substation through a final section of underground cabling.

2.2 Site Location

The planning application boundary is detailed in Figure 2.1 below, illustrating the spatial extent of the turbine array, onshore and offshore export cable corridor and the connection to the national grid. The location of the Operational and Maintenance (O&M) Base is Dún Laoghaire Harbour. The proposed offshore infrastructure is located off the coasts of County Dublin and County Wicklow. The Onshore Electrical System infrastructure and the O&M Base are located entirely within the administrative boundary of Dún Laoghaire-Rathdown County Council.

Figure 2.1: Location of the Proposed Development



Source: Mott MacDonald Ireland Limited – Overall Site Location Map in Geographical Context (229100714-MMD-00-XX-DR-C-0100)

The array area is located at two shallow sand banks in the Irish Sea, known as Bray Bank and Kish Bank, which cumulatively incorporates an area of approximately 59 sq km (square kilometres). The array area is located approximately 11.9km east of Dún Laoghaire Harbour, 9.6km east of Bray Head, 8.9km southeast of Howth Head and 7.9km northeast of Greystones. A network of inter-array cables will be located throughout the turbine array area, connecting each wind turbine generator to the Offshore Substation Platform (OSP). The OSP will be located within the west of the array. Drawings showing the options for the locations of the turbines, inter-array cabling and the OSP with strict limits of deviation have been included in Part 2 Planning Drawings, Offshore Wind Farm Infrastructure Drawings within the application.

The offshore export cable corridor measures an area of 25.77 sq km and will begin at the OSP and will extend directly to the landfall location on the landward side of the high water mark at Shanganagh Cliffs, County Dublin. A northern cable corridor option and a southern cable corridor option have been included in the application. The selection of the preferred export cable corridor has not been confirmed at the time of the application and therefore the route of the two submarine export cables is not known at the time of the application. Their specific location forms part of the Opinion on Flexibility issued by An Bord Pleanála and is being proposed with strict limits of deviation.

The onshore export cable route measures approximately 7.35km (measured between the transition joint bay at the landfall site at Shanganagh Cliffs and the proposed substation), and will traverse the townlands of Shanganagh, Hackettsland, Ballybrack, Loughlinstown, Cherrywood, Glebe, Laughanstown, Carrickmines Great and Jamestown, County Dublin.

The route will predominantly follow the local road network, and will be installed through sections of the Shanganagh Cliffs, Clifton Park and Loughlinstown Stream, continuing along Bayview Crescent, Shanganagh Road, Loughlinstown Drive and Cherrywood, crossing under the N11 and continuing along Wyattville Link Road (R118), where it will then follow the route of the proposed Beckett Road before passing beneath the M50, then turning northwards through marginal agricultural grassland located to the west of the M50. It will then follow the course of Golf Lane, and cross the Glenamuck Road South before it will pass underneath the Glenamuck District Distributor Road (currently under construction), then the route heads west through agricultural lands to the south and west of Carrickmines [retail] Park, terminating at the proposed onshore substation within Ballyogan Landfill Facility/Recycling Park to the west of Carrickmines Park. Several watercourse crossings are required along the export cable route, in order of occurrence these are, Shanganagh River, Kill O'the Grange stream (two crossings), Carrickmines stream, Laughanstown stream and Glenamuck North stream.

An onshore substation is proposed to be located within the existing Ballyogan Landfill Facility/Recycling Park in the townland of Jamestown, to the south of Ballyogan Road, Carrickmines, County Dublin. The grid connection will be located underground from the onshore substation to the existing 220 kV Carrickmines substation (specifically the existing Gas Insulated Switchgear building), also located in the townland of Jamestown, approximately 0.5 km west-northwest (straight line distance) from the proposed onshore substation.

All of the proposed development relating to the O&M Base is located on the seaward side of the high water mark (as defined by the chief boundary surveyor) and covers an area of approximately 0.026 sq km at St. Michael's Pier and Wharf within Dún Laoghaire Harbour.

The following sections of this chapter will briefly describe the proposed development for each element of the overall project in sequence (i.e. offshore to grid connection, followed by the O&M Base).

2.3 Offshore Infrastructure

The proposed offshore infrastructure within the maritime area comprises several elements, which will each be described as detailed within the statutory public and supplemented with figures and additional information in the below sections. Certain details of the proposed development are unconfirmed in the planning application as flexibility within the design is required by the Applicant at this stage of project. An opinion has been obtained from An Bord Pleanála, pursuant to Section 287B(2) of the Planning and Development Act 2000, as amended, confirming it is appropriate that the proposed application be made and decided before these details are confirmed. In accordance with this opinion, the Applicant has included options and parameters for certain elements of the proposed development. The Applicant will notify the Board in writing, prior to commencement of the development, or that part of the development to which the detail relates, of the actual detail of the development.

2.3.1 Wind Turbine Array

An offshore wind turbine array located approximately 10 km from the coastline of counties Dublin and Wicklow at the Kish and Bray Banks in the Irish Sea. The number, siting, layout and design of the wind turbine generators (WTGs) will be based upon three potential classes of WTG. There are three WTG technology options with three possible foundation options which are considered by the planning application, and will comprise of the following parameters:

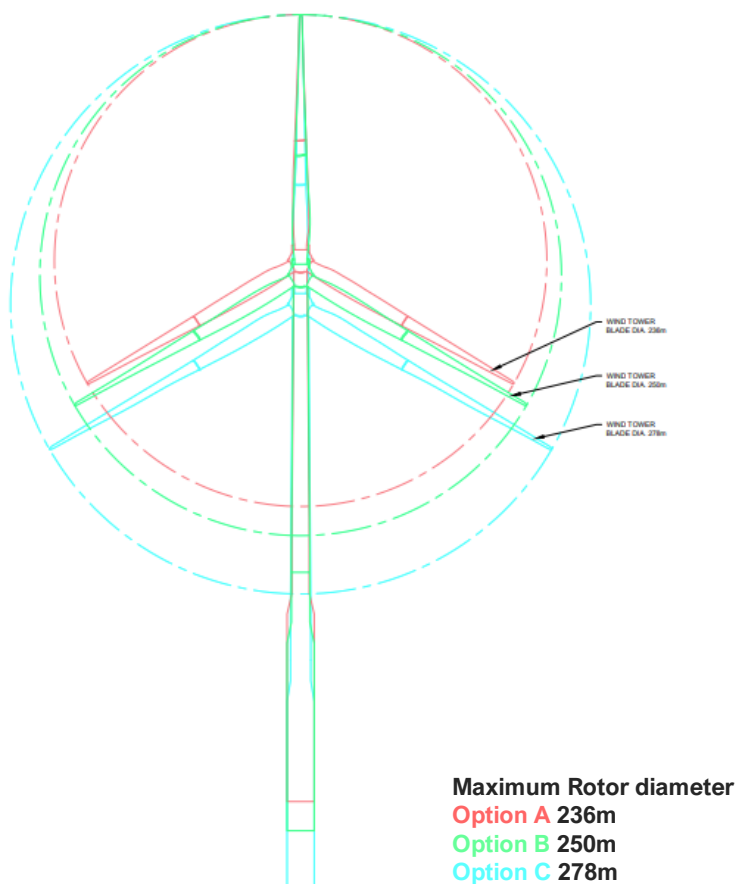
Table 2.1 Principal dimensions of three WTG options

Parameters	Option A	Option B	Option C
Number of WTGs	50	45	39
Rotor diameter (in metres)	236	250	278
Maximum upper blade tip height (in metres above LAT – Lowest Astronomical Tide)	309.6		
Minimum Lower blade tip height (in metres above LAT – Lowest Astronomical Tide)	31.6		
Locational Limit of Deviation (metres)	350		

The WTG options are illustrated in Figure 2.2, detailing the difference in overall WTG height, blade length and diameters across the three options (aligned to the maximum tip height for which planning permission is being applied).

The layout of the WTGs is dependent upon a number of factors, including, but not limited to existing ground conditions, wind dynamics, the size of turbines, and the presence of marine archaeological and environmental features. The application of a 350m buffer (locational limit of deviation) around each WTG (as indicated in Part 2 Planning Drawings) will provide scope for any unforeseen circumstances necessitating a minor alteration to the location of a WTG arising from these factors which may be identified in pre-construction verification surveys.

Figure 2.2: WTG Elevations



Source: Drawing Ref: 22164-GDG-ZZ-DR-C-1003

2.3.2 Inter-array cables

The inter array cables will connect the wind turbines to the offshore substation platform (OSP) to transfer the electricity generated by the turbines to the OSP. The total combined length of inter-array cables will be a minimum of 92 km and a maximum of 120 km. Fibre-optic cables, serving the wind farm array control systems, are integrated within cable bundles. The nominal operating voltage of the inter-array cable system will be 66 kV.

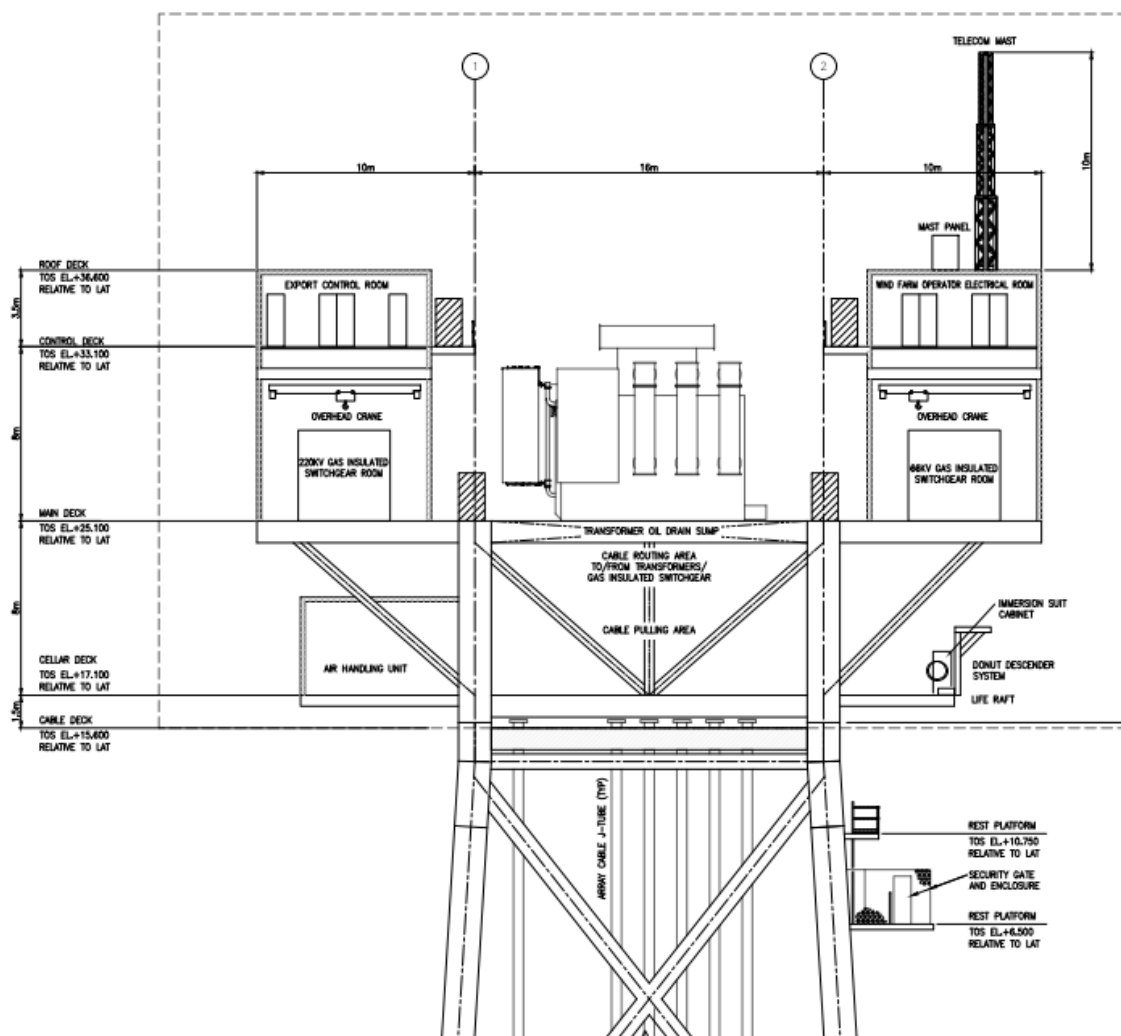
As the inter array cables are dependent upon the WTG layout to be chosen, they are also subject to design flexibility, as such, there is a proposed locational limit deviation of 350 metres either side of the preferred alignment shown on the planning drawings. This alignment is represented as a network of 700m wide cable corridors between the WTGs and the approaches to the OSP.

The width of the corridors is required to make allowance for avoiding previously unrecorded archaeology which may be encountered, particular types of sensitive ecological habitat or engineering constraints arising from ground conditions at the intended installation location based on the final selected turbine and foundation configuration.

2.3.3 Offshore Substation Platform

There will be one Offshore Substation Platform (OSP) and associated electrical plant and equipment, located within the array area, the location of the OSP will be within a locational limit of deviation of 350 metres, and is dependent upon the WTG layout option selected. An elevation of the OSP is shown in Figure 2.3, illustrating all decks – cable, cellar, main, control and roof deck.

Figure 2.3: Offshore Substation Platform Elevation



Source: Planning drawing 200584-LYT-L-4001-01

The OSP will be fixed to the seabed by either monopile or multileg foundation types. The OSP will be of the of the following measurements:

- Maximum topside width and length: 45m
- Minimum topside width and length: 30m
- Minimum topside height: 30m
- Maximum topside height: 55m (above LAT - Lowest Astronomical Tide, including plant, equipment and telecommunications mast on the roof deck)

There are three foundation types under consideration for the OSP. The options comprise either, steel monopile, driven or piled multi-leg, or suction bucket multi-leg.

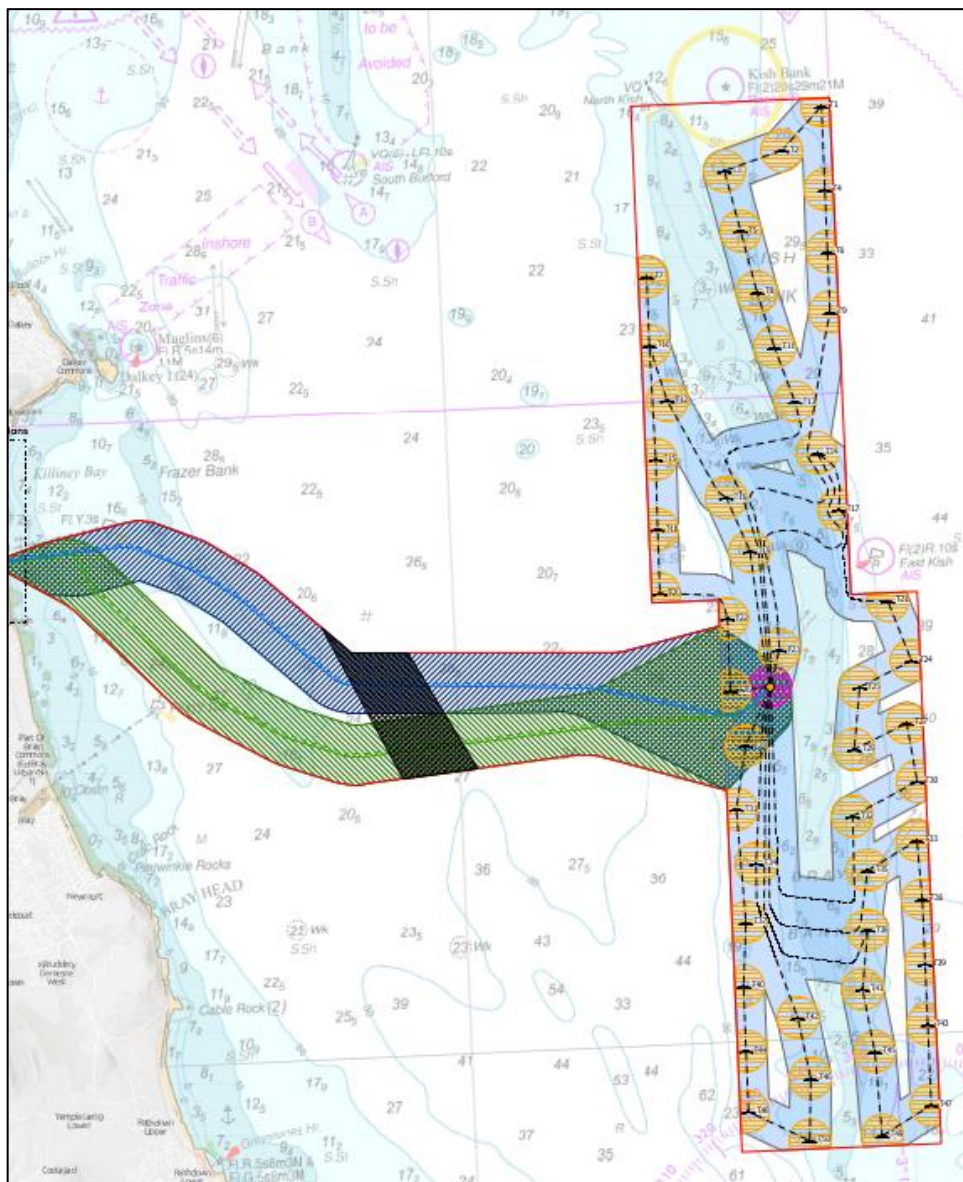
2.3.4 Export Cables

Two export cables for the transmission of High Voltage Alternating Current (220 kV) electricity will be laid beneath the seabed in either a northern cable corridor or a southern cable corridor and will extend from the OSP to the two transition joint bays located above the high-water mark

at the landfall location (Shanganagh Cliffs, County Dublin). Cable protection will be provided where necessary for the export cables.

The total combined length of both offshore export cables will be a minimum of 26 km and a maximum of 37 km. Both export cables will be located within either of the two proposed export cable corridors (i.e. two cables in one corridor) shown in Figure 2.4, varying in width between approximately 0.3 km at the landfall, to a maximum width of approximately 3 km adjacent the array boundary. The northern export cable corridor option is in navy hatching below and the southern cable corridor options is in green hatching below. The area in black hatching is the location within which crossings of the Codling Wind Park export cables would be required.

Figure 2.4: Export Cable Corridor



Source: RWE (Extract from Site Layout Planning drawings (005059368-08) included in the application)

2.3.5 Operations and Maintenance Base

The proposed Operations and Maintenance (O&M) Base will be located at St. Micheal's Pier, within Dún Laoghaire Harbour, Dún Laoghaire, County Dublin. The immediate surroundings of the proposed the O&M Base in Dún Laoghaire Harbour are currently used on a daily basis for harbour related activities. The existing infrastructure includes a maintenance depot and service yard for maintenance activities associated with harbour operations by Dún Laoghaire-Rathdown County Council (DLRCC). The proposed O&M Base site includes a parking area, office buildings, storage buildings and storage containers as well as berthing infrastructure (fenders) which were previously used as part of the Ferry Terminal. The existing services on site include a foul network, potable water supply network, surface water drainage network with an oil interceptor, public lighting, and electrical ducting. All existing services will remain in-situ, where possible. The site comprises of four distinct areas;

- St. Michael's Pier
- The existing Roll-On Roll-Off (RoRo) ramp at Berth 5
- Existing Vehicle Compound Area / Staging Area
- Marine area

The existing St. Michaels Pier was constructed in the 1960s and consists of a series of reinforced concrete vertical and raking piles supporting a concrete slab deck. A concrete edge upstand beam forms a waterside edge to the pier. The concrete slab is currently infilled with a macadam surface at the same level to the upstand edge beam.

An existing fender, which was previously used during berthing operations at the ferry terminal, is located off the head of St. Michaels Pier. The fender system consists of a large fender panel supported on two large, steel tubular piles which are driven into the rock beneath the seabed. The tubular steel piles are supported laterally by horizontal and diagonal steel bracing which is fixed to the deck of St. Michael's Pier. The fender panel and the horizontal and diagonal steel bracing are proposed to be demolished as part of the subject application. The west side of the pier is currently used as a storage area for the harbour maintenance team and includes a number of storage containers. The pier also supports the existing single storey harbour maintenance building, which is also proposed to be demolished.

An existing RoRo ramp structure (to be demolished), located at Berth 5 within the harbour. This ramp was previously used as part of a drive on drive off car ferry terminal. The ferry terminal was previously used for the Stena Line ferry service between Dún Laoghaire and Holyhead. Ferry operations ceased in 2015 and the structure is now redundant. This area is currently used as a storage area for the harbour maintenance team. Two large reinforced concrete towers were constructed as part of the RoRo ramp for the ferry terminal development works and remain in-situ. These concrete tower structures will also be demolished as part of the proposed works.

Dún Laoghaire Harbour attracts cruise liners during the months of April through to September. The existing yard within the harbour, which was previously used as a vehicle compound area during ferry operations, is currently used by DLRCC as a staging area during cruise liner operations (for passenger arrival and departure). It is planned that an area within the vehicle compound area will be used as a temporary construction compound.

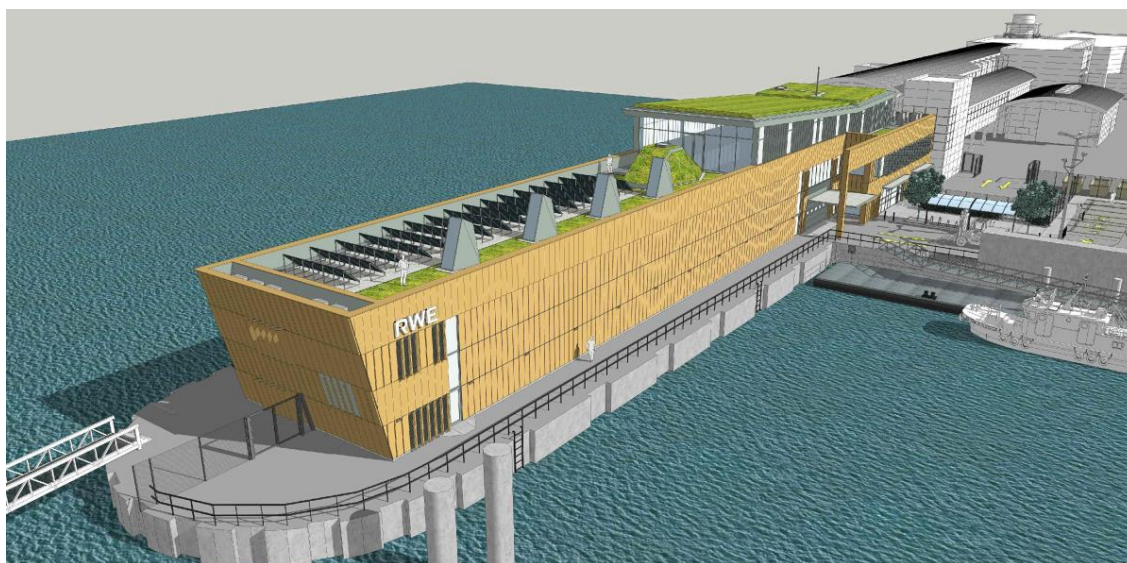
The proposed O&M Base will comprise a three-storey building, providing a total of 2003 m² of internal floor space, which will provide offices, warehouse storage for small spare parts and ancillary equipment for the continued operation and maintenance of the wind array. It is proposed that DLRCC Harbour Operations will occupy a section of the O&M building. As such, two separate entrances have been provided.

Demolition works are required to facilitate the construction of the O&M building, which includes demolishing the existing single storey harbour maintenance building located on St. Michael's

Pier, existing hardstanding surfacing (hardcore fill and tarmacadam down to the existing concrete deck level) on St. Michael's Pier. Additionally, existing storage containers will be removed during the site preparation works.

A new floating pontoon, measuring 60m long and 6m wide with an access gangway, will be installed adjacent to the proposed O&M building (at Berth 5). This pontoon will facilitate the berthing of crew transfer vessels (CTVs) on a daily basis during the operational phase of the wind array. No element of the proposed O&M Base infrastructure has been the subject of an Opinion on Flexibility from An Bord Pleanála.

Figure 2.5: O&M Base 3D Visualisation



Source: Extract from DGI-Group drawing, Drawing number DUN-DJI-ZZ-XX-DR-A-21104

A yard will also be constructed as part of the O&M Base which will require the removal/demolition of the HSS approach [RoRo] ramp including retaining walls, geogrid membrane and associated foundation, two obsolete reinforced concrete towers previously used for the operation of the HSS ferry terminal, and the partial demolition of the upper portion of the bankseat buttressing walls.

The proposed O&M Base will be accessed via the existing main harbour gate off Harbour Road, to the south of the development. As part of the proposal, an entrance gate and fence will be erected around the perimeter of the proposed development to restrict access to approved personnel only.

Part of the overall existing vehicle compound area (which is currently used for a number of purposes, including but not limited to use as a staging area for cruise liner operations), will be used as a temporary construction compound area to coincide with the proposed construction phases of the O&M Base. Following construction this area will be used for general harbour operations.

2.4 Onshore Electrical System Infrastructure

No element of the proposed onshore electrical system has been the subject of an Opinion on Flexibility from An Bord Pleanála. The main elements of the onshore works, comprising 220 kV cables and an onshore substation site, are described hereunder.

2.4.1 Onshore Export Cables

Two 220 kV underground onshore export cable circuits, each measuring a length of approximately 7.35km, are proposed to start from the transition joint bays located above the high-water mark at Shanganagh Cliffs, in the townland of Shanganagh, County Dublin. The cable route will traverse the townlands of Shanganagh, Hackettsland, Ballybrack, Loughlinstown, Cherrywood, Glebe, Laughanstown, Carrickmines Great and Jamestown, County Dublin. The proposed installation of the export cables will require underground transition joint bays at the landfall site, and along the cable route; they will also entail underground joint bays, underground chambers, watercourse/utility crossings and associated infrastructure.

The proposed onshore export cable corridor will contain 2 no. three phase 220 kV circuits, each to be installed in a separate parallel below ground trench. Where each trench occurs within a road or is directly adjoining a road, the trench will measure approximately 1.5 metres deep and 0.7 metres wide. Sections of cable will occur at greater depths where trenchless drilling technology is utilised to cross beneath watercourses or transport infrastructure. Additionally, sections of the cable are proposed to be installed in existing cable ducting. Such ducting will occur within road developments which do not form part of the subject proposed development, but which have been separately granted planning permission, namely, Beckett Road (application ref: DZ21A/1017) within Cherrywood SDZ and the Glenamuck District Roads Scheme (application ref: ABP-303945-19).

2.4.2 Onshore Substation

An onshore substation is required to provide voltage regulation, reactive power compensation and harmonic synchronisation and is a critical installation for the proposed development to ensure safe and reliable operation of the wind farm and the overall electrical system. The design of the onshore substation has been prepared in accordance with EirGrid technical specifications.

The onshore substation site (OSS) is proposed to be located in the townland of Jamestown County Dublin, (Dublin 18). The layout of the onshore substation is indicated in Figure 2.6, and will comprise the following within a walled compound measuring approximately 1.7 hectares;

- 1no. 220 kV Gas Insulated Switchgear (GIS) building measuring 38.8m (length) x 15.3m (width) x 15.0m (height);
- 2no. Static Synchronous Compensator (STATCOM) buildings, measuring 20.3m (length) x 23m (width) 7.3m (height);
- 2no. 220 kV shunt reactor compounds, each measuring 20m (length) x 13.8m (width), each compound contains 3no. shunt reactors measuring 9.0m high;
- 2no. harmonic filter compounds, each measuring 30m (length) x 25m (width), each containing harmonic filter equipment measuring 7.0m high;
- Installation of associated 220 kV electrical equipment, including STATCOM transformers and associated firewalls, distribution network operator (ESB) supply and a diesel generator; and,
- All ancillary site development works including site preparation works, temporary construction compounds and laydown areas, site drainage including an underground attenuation tank, internal hardstanding and access roads, 6no. car parking spaces, lighting, 17 no. lightning masts (18.0m high), internal compound security fencing and gates, (2.6m high), perimeter wall and compound access gate (4.0m high) and landscaping.

Figure 2.6: Onshore Substation Compound Layout



Source: Extract from planning drawing 229100714-MMD-00-XX-DR-C-0250

2.4.3 Grid Connection

The grid connection from the OSS to the existing Carrickmines 220 kV substation, will be achieved via an underground cable installation measuring approximately 0.8km in linear length.

The grid connection exits the proposed 220 kV Gas Insulated Switchgear building within the OSS and heads westwards along internal access roads to the south of the Dún Laoghaire-Rathdown County Council Operations Centre/Depot. It continues along the perimeter of the Carrickmines 220 kV substation, until it reaches the Gas Insulated Switchgear building, the location of the connection to the national grid.

2.4.4 Ancillary Site Development

Ancillary site development works for the proposed onshore works, includes site preparation works, temporary construction compounds/laydown areas on sites in the townlands of Shanganagh and Carrickmines Little, site clearance and levelling, reinstatement of ground covering, roadworks and landscaping.

3 Policy Context

3.1 Introduction

The need for the proposed development is supported through European, national, regional and local planning policies and objectives relating to renewable energy development. This chapter provides an overview of these and highlights how the proposed development is consistent and in alignment with the realisation of commitments, policies and objectives as reflected within the hierarchy of these plans. The policy, plans and strategies detailed within this chapter are ordered chronologically. Further information on consents, legislation, policy and guidance is provided in Volume 2, Chapter 2, of the Environmental Impact Assessment Report accompanying the planning application. This chapter will also set out the land use zoning context of relevant components (e.g. the O&M Base, onshore substation and landfall) of the proposed development, as established within the Dún Laoghaire-Rathdown County Development Plan 2022-2028.

3.2 European Policy Context

3.2.1 A Roadmap for Moving to a Competitive Low Carbon Economy in 2050 (COM/2011/112)

The “Roadmap for Moving to a Competitive Low Carbon Economy in 2050” is a strategic climate action policy developed by the European Commission, which was published in March 2011. It outlines a cost-effective pathway for the European Union (EU) to achieve an 80-95% reduction in greenhouse gas emissions by 2050, compared to 1990 levels. It set out that these targets could be accomplished solely through European reduction measures, with the supporting economic modelling excluding international offset credits. The modelling analysis estimated that to achieve an 80% reduction in emissions in the EU by 2050, investment in clean and energy-efficient technologies requires an annual increase of 1.5% of EU GDP (gross domestic product), in addition to current spending, equivalent to €270 billion. Consequently, this would achieve improved air quality, reduced air pollution control and health care costs by up to €88 billion a year by 2050. This Roadmap was used as a basis for the development of sector specific policy initiatives such as the 2050 Energy Roadmap (refer to Section 3.2.2 of this report).

Project Response

The proposed development comprises a ‘clean and energy efficient technology’, as identified within the Roadmap as a prerequisite in the decarbonisation of the economy, as it will harness offshore wind to help reduce greenhouse gas emissions for the State and consequently the EU. The proposed development represents private investment in offshore renewable energy (ORE) to assist in the transition to a low carbon economy, and is thus aligned with the Roadmap.

3.2.2 Energy Roadmap 2050

The Energy Roadmap was published by the European Commission in December 2011 and explores the transition of the energy system in ways that would be compatible with the targets for reduction of greenhouse gasses as set out in the Renewable Energy Directive, as well as increasing competitiveness and supply. Four main routes were identified in this roadmap for achieving a more sustainable, secure, and complete energy system by 2050:

- Energy efficiency
- Renewable energy

- Nuclear Energy
- Carbon capture and storage

These routes were combined in several ways to create seven scenarios for the future of European energy, and the analysis of which assumed that an increased share of renewable energy was crucial. It also outlined that investment in new technologies should not be postponed, as this would cause long-term disruption and increased costs. These scenarios suggest that *'wind power provides more electricity than any other technology in the High Renewables scenario'*, and there is a need to increase the size of offshore windfarms.

Project Response

The Energy Roadmap outlines that wind power will generate a high amount of renewable energy, and that there is a need to increase the size of windfarms. The proposed development and its associated proposed grid support infrastructure, directly supports this aim, as it is a proposed large-scale offshore windfarm that will account for approximately 16% of the offshore wind targets for Ireland.

The proposed development is aligned with the Energy Roadmap, as it will facilitate renewable energy generated from the proposed offshore wind to be transmitted to the national grid and facilitate its integration onto this through the proposed onshore cabling and substation components.

3.2.3 The 2030 Climate and Energy Framework (COM/2014/015)

In January 2014, the European Commission introduced 'A policy framework for climate and energy in the period from 2020 to 2030', committing to a 40% reduction in emissions below 1990 levels, through domestic measures alone. The policy framework acknowledges that renewable energy has a fundamental role in achieving a competitive, secure and sustainable energy system. The framework also established an EU-wide binding target for renewable energy, requiring at least 27% of energy consumption to come from renewable sources by 2030.

The framework included three key targets for 2030:

- At least a 40% reduction in greenhouse gas emissions (from 1990 levels)
- At least a 32% share of renewable energy
- At least a 32.5% improvement in energy efficiency

Targets for renewables and energy efficiency were revised in 2018 by the Renewables Energy Directive (REDII) and again in 2023, as discussed in Section 3.2.8 of this report.

The Framework also adopted integrated monitoring and reporting rules, enforced through a new governance system based on national energy plans, to ensure progress towards its energy targets and international commitments under the Paris Agreement.

Project Response

The proposed development is aligned with the Framework as it will provide a zero carbon, indigenous renewable energy generation source off the east coast of Ireland, which will assist Ireland in meeting its renewable energy targets over the course of its lifespan.

3.2.4 Regulation (EU) 2018/1999 on the Governance of Energy Union and Climate Action

This regulation is a core piece of legislation which consolidates and streamlines a large number of existing energy and climate planning and reporting requirements into a National Energy and Climate Plan (NECP) for each Member State.

Ireland's NECP is required to set out, amongst other things, its proposed approach to compliance with their Effort Sharing Regulation targets (2018/842) which was adopted on 30 May 2018, sets out binding annual greenhouse gas emission targets for Member States for the period 2021–2030 inclusive) and Ireland's contributions to EU level 2030 targets on renewable energy and energy efficiency. In addition, member states are required to produce biennial progress reports on the implementation of these plans, in order to track progress across the five dimensions of the energy union: decarbonisation, energy efficiency, energy security, the internal energy market, research, innovation and competitiveness.

Regulation (EU) 2021/1119, known as the European climate law, amends Regulation (EU) 2018/1999. It sets a binding EU target of a net domestic reduction in greenhouse gas emissions by at least 55% (compared with 1990 levels) by 2030 and undertakes to set a climate target for 2040 within six months of the first global stocktaking under the Paris Agreement.

Project Response

The proposed development will provide for an offshore wind farm and associated onshore electrical system infrastructure that will connect to the national electricity transmission grid. This will assist Ireland in meeting its binding greenhouse gas emission reduction targets as it will ensure that renewable energy can be supplied to the wider national electricity grid. Offshore wind energy harnessed by Dublin Array as a renewable energy resource, will thus be used to meet the country's growing energy demand and facilitate a just transition towards a resilient and decarbonised energy source and supply.

3.2.5 The European Green Deal (COM/2019/640)

In December 2019, the European Commission (EC) published a Communication (COM/2019/640) on a European Green Deal (EGD), setting out its increased ambition on climate action. The EGD is a blueprint for transformational change, presenting a roadmap of key policies and measures needed to achieve the ambition of becoming the first climate-neutral continent by 2050. This requires a transformation of the EU's economy, with sectors such as transport, buildings, agriculture, and energy production all having key roles to play. In this regard the EGD highlights offshore renewable energy as a key enabler for achieving its carbon neutrality ambitions by 2050, although actions required by all sectors of the economy, include:

- investing in environmentally friendly technologies
- supporting industry to innovate
- rolling out cleaner, cheaper and healthier forms of private and public transport
- decarbonising the energy sector
- ensuring buildings are more energy efficient, and
- working with international partners to improve global environmental standards.

As well as setting out the policy and legislative programme for all key economic sectors to deliver on the EU's climate ambition, the EGD also addresses the EU's overall ambition on climate targets. It proposes increasing the EU's emissions reduction targets for 2030 from 40% to at least 50% and towards 55% compared with 1990 levels. In December 2020, EU leaders agreed to reduce GHG emissions by at least 55% by 2030, compared to 1990 levels.

Project Response

Renewables-based electrification is central to a climate neutral, competitive, and secure energy system. The proposed development directly supports this ambition as a key enabler for achieving carbon neutrality, and as such complies with the objectives of the EU Green Deal. In addition, the proposed development will also support the commitments made to reduce GHG emissions, as offshore renewable energy generation does not produce GHG emissions and will facilitate a just transition away from traditional, carbon-intensive energy production.

3.2.6 Powering a climate-neutral economy: An EU Strategy for Energy System Integration (COM/2020/299)

On 08 July 2020, the EU Strategy for Energy System Integration was adopted. The strategy provides a framework for the green energy transition and acknowledges that European Energy Systems will need to become more integrated with each other i.e. "This means a system where the electricity that fuels Europe's cars could come from the solar panels on our roofs, while our buildings are kept warm with heat from a nearby factory, and the factory is fuelled by clean hydrogen produced from off-shore wind energy."

There are three main pillars to the strategy: ensuring a circular energy system, greater direct electrification of end use sectors, and the promotion of clean fuels.

The strategy further states that the high potential for offshore wind in the EU "represents a huge opportunity for the EU industry to become the global leader in offshore technology but will require considerable efforts to increase the European industrial capacity and build new value chains", and that renewable energy will be the main supplier of the increased electricity demand across sectors.

Project Response

The proposed development is aligned with the provision of the EU Strategy for Energy System integration, as it will provide for an offshore wind farm and associated transmission infrastructure off the east coast of Ireland, helping to increase ORE capacity. Furthermore, as the demand for electricity increases in line with electrification efforts, the proposed development will ensure that there is a supply of renewable energy to the national grid, meaning that the demand for traditional or 'dirty' fuels will decrease.

3.2.6.1 An EU Strategy for Offshore Renewable Energy for a climate neutral future (COM/2020/741)

On 19 November 2020, under the European Green Deal, the EU commission published an EU strategy to harness the potential of offshore renewable energy for a climate neutral future, and to make *'offshore renewable energy a core component of Europe's energy system by 2050'*. The strategy acknowledges that a *'diversified approach'* will be required to respond to different situations and aims to provide *'a strategic direction and the accompanying conditions at a crucial juncture to ensure that offshore renewable technologies can make a difference for achieving our climate objectives for 2030 and 2050.'*

The strategy recognises that Europe has a complex and varied expanse of sea basins, and that offshore renewable energy is a priority across Europe and *'cooperation at regional level is being extended to all sea basins and to all Member States'*.

The European Commission estimates between 240 GW and 450 GW of offshore wind power is needed by 2050 to keep temperature rise below 1.5°C. The Strategy proposes to increase Europe's offshore wind capacity from its current level of 12 GW to at least 60 GW by 2030 and to 300 GW by 2050. In addition, it is acknowledged that islands within the EU have a huge

potential in this area and can contribute to the overall development of European offshore energy.

In regard to scaling up the development of European offshore Energy, the Strategy outlines that any offshore renewable development must comply with EU environmental legislation and integrated marine policy, while also taking into account sectors that rely on a healthy marine environment and coexisting with other land and sea uses, particularly in crowded areas. Most importantly, it is noted that the development of offshore renewable energy will only be sustainable if it does not have negative impacts on the environment, and is aligned with economic, social and territorial sectors.

In conclusion, the strategy recognises that offshore renewable energy is a promising route to increasing future power generation, while meeting both decarbonisation targets and the rising electricity demand.

Project Response

The proposed development aims to facilitate the connection of offshore renewable energy to the wider national electricity grid. As an island nation within the EU, Ireland is uniquely placed to capitalise on a huge potential for offshore renewables, and the proposed development will ensure sufficient connections are in place to transfer this renewably generated energy to the electricity grid. As outlined in Section 3.2 of this report, the proposed development has been shown to support and align with European policy, and Section 4 demonstrates alignment with the National Marine Planning Framework.

The accompanying EIAR submitted with this planning application outlines how the proposed development interacts with the wider environment, and how any potential negative effects will be mitigated against. In this regard and in accordance with the provisions of the offshore renewable energy strategy, the proposed development has been subject to full environmental scrutiny, assessments and modelling exercises to ensure that it will operate within environmental limits and in accordance with all relevant appropriate environmental guidance, best practice and legislation.

3.2.6.2 A new approach for a sustainable blue economy in the EU: Transforming the EU's Blue Economy for a sustainable future (COM/2021/240)

Published in May 2021, the communication outlines the European Union's new approach to transform the blue economy (industries and sectors related to marine areas) into a sustainable model to align with the overall objectives of the Green Deal.

The communication addresses the cumulative impact of economic activities on the marine environment, including the effects of pollution and climate change, much of which is devastating the ocean, coast and those living and working in coastal areas.

In respect of the proposed development, the communication notes that carbon neutral activities will be vital to achieving the objectives of the Green Deal, and that the blue economy can contribute to this through the development of offshore wind. The communication further outlines that offshore wind is noted as having significant potential to meet the European Union's targets for greenhouse gas reductions.

Project Response

As noted above, the proposed development is a carbon neutral development which is vital to the overall objectives of the European Green Deal. In this regard, the proposed development will assist in decreasing greenhouse gases as it will consist of a carbon neutral energy generation development.

Furthermore, and in respect to the cumulative impacts on the marine environment, Section 4 of this Planning Report details how the proposed development responds to the National Marine Planning Framework and associated objectives. In addition, the accompanying EIAR provides a detailed assessment of any interactions and corresponding mitigation measures arising from the proposed development.

3.2.7 RePower EU

In March 2022, in response to the invasion of Ukraine, the EU published a communication (COM/2022/108) which called on member states to treat the planning, construction and operation of renewable energy projects, their connection to the grid and the related grid itself to be *“in the overriding public interest and in the interest of public safety”* and to qualify for the most favourable procedure available in the planning system.

In May 2022, the EC published its REPowerEU Plan (COM/2022/230) that sets its objectives as *“ending the EU’s dependence on Russian fossil fuels”* and *“securing the long-term sustainability, cost effectiveness, and energy supply to the EU”* by building on the implementation of the European Green Deal and the EU’s “Fit for 55” proposals. The plan outlines several key goals in order to achieve a *‘truly interconnected and resilient EU energy network’*:

- Diversifying energy imports
- Accelerating a transition from fossil fuels to clean energy
- Saving energy through higher efficiency
- Smart investment; and
- Reinforcing preparedness.

The plan acknowledges that *‘offshore wind represents a significant future opportunity’* as there is abundant supply and higher levels of public acceptance in windfarm developments. In order to achieve a strengthening of the EU wind sector and the overarching renewable energy commitments, the plan suggests that *‘supply chains need to be strengthened and permitting drastically accelerated.’*

Project Response

RePower EU outlines that ensuring the energy system is sustainable and diverse is vital to ending the EU’s dependence on Russian imports, and that the significant opportunities that offshore wind represents should be capitalised on to ensure a diverse energy system.

The proposed development will provide an offshore wind farm and the required infrastructure that will enable to be connected to the existing national electricity grid. This will facilitate a greater diversity of energy generation sources and contribution of offshore wind energy towards the overall energy requirements of the country, whilst contributing towards the decarbonisation of the national grid and assisting in reducing the existing dependency on imported fossil fuels for energy generation.

3.2.8 Revised Renewable Energy Directive (EU) 2023/2413 ‘RED III’

Directive (EU) 2023/2413 amends Directive (EU) 2018/2001 (commonly referred to as REDII), Regulation (EU) 2018/1999 and Directive 98/70/EC as regards the promotion of energy from renewable sources, and repeals Council Directive (EU) 2015/652. The Revised Directive was adopted on 09 October 2023 and entered into force on 20 November 2023. The revision of REDII forms part of the EU ‘Fit for 55’ package and provides legislative alignment with the EU’s updated commitments to reducing greenhouse gases and increasing the amount of renewable energy in the EU’s energy mix.

The Revised Directive sets an overall binding renewable energy target of at least 42.5% at EU level by 2030 but aiming for 45%. This is a minimum increase of 10.5% on the REDII Recast renewable energy targets and seeks to further the legal framework for the achievement of the European Green Deal, and ultimately achieving the objective of climate neutrality in the Union, by 2050.

In 2021, renewable energy accounted for 21.8% of the EU's energy consumption. With the new binding target of 42.5%, this will require a doubling of the existing consumption share of renewable energy in the Union. The Revised Directive has been introduced as a response to the need to speed up the delivery of the EU's clean energy transition.

The Revised Directive sets out numerous amendments to REDII including additional sectoral targets for the use of renewable energy in final consumption. It also envisages coordinated mapping for the deployment of renewables, carried out by Member States to identify the domestic potential and the available land surface, sub-surface, sea or inland water for renewable energy plants and the related infrastructure, such as grid and storage facilities.

Project Response

RED III's focus on significantly increasing the share of renewable energy necessitates the expansion of offshore wind capacity where available in Europe. This is vital for Ireland given its favourable maritime conditions and extensive coastline, and potential for greater levels of electrical interconnectivity to Europe in the future. The proposed development will provide infrastructure to facilitate offshore wind generation and its transmission to the energy grid, which will directly support the renewable energy targets outlined in the revised Directive. As Ireland aims to double its renewable energy share to meet the RED III binding targets, offshore wind projects capable of delivering significant new generating capacity before 2040, such as Dublin Array, are necessary. The proposed development will allow for increased renewable energy from offshore wind to be fed into the electricity grid, which will in turn facilitate a just transition away from fossil fuels, and therefore by a reduction in greenhouse gas emissions and a resource efficient economy.

3.2.9 European Wind Power Action Plan (COM/2023/669) and European Wind Charter

Published in October 2023, the EU Wind Power Action Plan provides a set of actions to support the wind energy sector and ensure that there is *"a healthy, sustainable and competitive wind supply chain"* and a clear pipeline of projects. The Plan outlines the following six focus areas:

- Acceleration of Deployment
- Improves auction design
- Access to finance
- Fair and competitive international environmental
- Skills
- Industry engagement and Member States commitments

Action 15 of the Action Plan, the commission invites member states and representatives of the wind energy industry to sign up to voluntary commitments as part of a Wind Charter. This charter builds upon the Action Plan and aims to align the implement the actions within the Plan. Member states and industry bodies that signed the charter (including Ireland and RWE) commit to the following:

- Ensure a sufficient, robust and predictable pipeline for the deployment of wind energy, including through updated NECPs coherent with the more ambitious Fit-for-55 renewable

energy targets, faster and more predictable permitting in the framework of the Emergency Regulation on Permitting.

- Improve, simplify and provide consistency in the design of auctions for wind energy.
- Ensure that business processes, governance, products and services offered by the undersigning wind sector representatives satisfy high qualitative standards related to environment, innovation, cybersecurity and labour conditions that are in line with the objective of the Net Zero Industry Act and the Wind Power Action Plan, including for projects developed through Power Purchase Agreements or those participating directly in wholesale markets.
- Improve the predictability of demand and supply, smoothing the effect of volatile prices and ensuring project implementation, in particular by hedging against inflation and price volatility of main costs, and, for private actors especially, developing long-term partnerships aimed at providing a stable and predictable outlook for the supply of equipment.
- Contribute to a fair and competitive international environment by actively monitoring and, if justified, consider measures to address possible unfair trade practices in the international market for wind-related products and cooperating on investments in the wind sector under the framework of the Foreign Direct Investment Regulation, and other appropriate instruments.
- Scale up wind equipment manufacturing capacity in EU to meet the expected increased demand for wind projects, whilst committing to reinforcing existing employment and industrial capabilities, as necessary.

Following the publication of the Action Plan, the Wind Energy Charter was signed by 26 member states, including Ireland, in December 2023. The Charter builds on the Action Plan and constitutes a coordinated effort and a common vision to improve the enabling conditions for the European wind industry and aims quickly implement the actions of the European Commission, Member States and the wind sector.

Ireland, as a signatory and endorser of the Charter, has also signed a voluntary 'wind pledge' committing to the delivery of wind energy targets for the period 2024-2026, as well as pledging indicative targets for 2030 and post-2030. In relation to offshore wind energy, Ireland's pledged targets (non-legally binding) for post-2030 remains at 20 GW by 2040. RWE are one of 300 representatives from the wind energy industry that endorse the Wind Energy Charter.

Project Response

The Wind Energy Charter continues to illustrate Ireland's commitments to ensuring offshore wind developments are developed in line with European targets for greater volumes of electricity to be generated by ORE developments. The proposed development has the potential to provide up to 824 MW to the national grid to assist in achieving the targets within the Charter and as part of wider European decarbonisation targets.

3.2.10 Council Regulation (EU) 2022/2577 on Accelerating Deployment of Renewable Energy

This regulation aims to facilitate the rapid deployment of renewable energy projects across EU member states in response to the climate emergency and the need for energy independence. It establishes a streamlined framework to expedite permitting processes, enhance grid connections, and promote investments in renewable technologies. The regulation emphasises the importance of offshore wind energy as a critical component in achieving the EU's climate targets, particularly under the broader objectives of the European Green Deal and Fit for 55 Package, noting that the planning, construction and operation of plants and installations for the production of renewable energy is presumed to be in the overriding public interest.

Project Response

The proposed development is supported by the Regulation as it will provide for the build out of offshore renewable infrastructure off of Ireland's east coast. As wind energy in particular is called out within the Regulation as being a critical component in achieving wider climate objectives, the proposed development will directly support this effort and is noted as being in the public interest.

3.3 National Policy Context

3.3.1 Offshore Renewable Energy Development Plan

Published in February 2014, Ireland's first Offshore Renewable Energy Development Plan (OREDPP) provided a framework for the sustainable development of Ireland's offshore renewable energy (ORE) resources, setting out key principles, policy actions and enablers to capitalise on Ireland's ORE potential. The OREDPP identifies opportunity for the following:

- the sustainable development of Ireland's abundant offshore renewable energy resources
- to increase indigenous production of renewable electricity
- to contribute to reductions in our greenhouse gas emissions
- to improve the security of our energy supply
- creating jobs in the green economy

In addition to identifying a number of specific maritime related principles which underpin the work required to implement the OREDPP, the plan also highlights enabling actions which are considered key to the development of the offshore renewable energy sector. An action which is considered directly relevant to the subject development proposal, is to:

10. Ensure Appropriate Infrastructure Development: The development of offshore renewable energy is critically dependent on the development of enabling infrastructure at a number of points in its value chain, including grid and port facilities."

The OREDPP is currently guiding the State's policy approach to achieving 5 GW of ORE by 2030, mostly through fixed-bottom wind turbines in relatively shallow waters of up to 70 metres off the east and southeast coasts. The draft OREDP2 was published in February 2023 and provides an updated strategy for delivering ORE targets and facilitating the transition from a developer-led approach to the enduring plan-led regime. The draft OREDP2 deals with ORE development post Phase 1 and 2 of the Offshore Electricity Support Scheme.

Project Response

The proposed development is directly aligned with the provisions of the OREDPP in so far as it will provide the generation and transmission infrastructure necessary to connect a proposed offshore renewable energy generation source (offshore wind farm) to the national electricity grid. This will facilitate an increased supply of renewable energy onto Ireland's overall energy resource portfolio, which will in turn facilitate our just transition away from fossil fuels for the purposes of energy generation.

The proposed Dublin Array Offshore Wind Farm and its associated grid infrastructure will ensure that an increase in electricity supply will continue, thus assisting to ensure energy supply and security, and support continued social and economic services and growth towards a more resource-efficient economy. More specifically, the proposed development will be supplying electricity to the Dublin region, which is one of the largest energy users in the county. Currently, the region is experiencing a supply shortage, and the proposed development will assist in

ensuring that the rapidly growing Dublin area will have sufficient electricity supply without excess carbon emissions.

Dublin Array will also assist in facilitating Ireland in establishing a stronger indigenous electricity supply, decreasing our dependency on imported fuels and reducing associated costs. Additionally, the construction of the proposed development will facilitate the creation of jobs within the construction sector.

An assessment of the proposed development, in the context of the OREDP recommended Project Level Mitigation Measures, is included in Appendix A.

3.3.2 Government White Paper – Ireland’s Transition to a Low Carbon Energy Future 2015-2030

This Government White Paper sets out a framework to guide Ireland’s energy policy development and actions that the Irish Government intends to take in the energy sector, up to 2030 but also reaching out to 2050. The framework was developed in the context of the significant role played by European institutions in determining energy policy, markets, and regulation. Similarly, it takes account of European and international climate change objectives.

The White Paper’s vision is to create a ‘*low carbon energy system*’ by 2050, whilst noting that ‘a *radical transformation*’ is required to meet the climate policy objectives. The Whitepaper outlines that a low carbon future, based on new technologies, services, energy network architectures etc, will include (inter alia):

- Generating our electricity from renewable sources of which we have a plentiful indigenous supply
- Moving to lower emissions fuels (e.g. moving from peat and coal to gas), and ultimately away from fossil fuels altogether
- Increasing our use of electricity and bioenergy to heat our homes and fuel our transport
- Adopting new technologies as they emerge

Project Response

The low carbon future for Ireland, as outlined in the White Paper, will include the generation of electricity from renewable sources, and the proposed development is therefore in accordance with such aims.

The proposed development will provide the required infrastructure to ensure that energy from offshore wind can be generated and integrated onto the existing national grid. This will ensure that existing and future increased electricity demand can be met, in line with wider carbon emission reduction and renewable energy targets; in this instance, with energy generated from the proposed development, which will sustainably harness an existing abundant natural resource that is currently underdeveloped and underutilised in Ireland.

3.3.3 Investing in the Transition to a Low Carbon and Climate Resilient Society 2018-2027

“Investing in the Transition to a Low-Carbon and Climate-Resilient Society” is a strategic initiative by the Irish Government, covering the period from 2018 to 2027. This plan is part of Ireland’s broader commitment to achieving a low-carbon and climate-resilient future by 2050.

This strategy outlines several key objectives aimed at achieving a low-carbon and climate-resilient society by 2050. National Strategic Outcome 8 of the National Development Plan highlights that €21.8 billion has been allocated to support Ireland’s transition to a low-carbon and climate-resilient society over the plan’s duration.

This strategic investment aims to both lower greenhouse gas emissions and strengthen Ireland's resilience to climate change impacts, thereby securing a sustainable and safe future for the nation. In respect of renewable energy generation, the strategy outlines that the investment into renewable generation "*affords Ireland the opportunity to comprehensively decarbonise our energy generation*" as it reduces the need for gas fired generation.

Reiterated within the statement is the commitment of the National Development Plan (2018) to a new renewable electricity support scheme (RESS) to support up to 4,500 MW of additional renewable electricity by 2030.

Project Response

The proposed development is one project which was successful in the ORESS-1 auction which incentivises connections of required quantity of offshore wind generated renewable electricity to support the State's targets on greenhouse gas emissions. Dublin Array will provide offshore wind energy generating infrastructure which will assist in providing renewable energy to the national grid. In this regard, the proposed development is aligned with the strategy, and will assist Ireland in achieving its carbon targets over the coming years.

3.3.4 National Planning Framework – Project Ireland 2040

The National Planning Framework (NPF) was published by the Government in February 2018. The NPF is a 20-year planning framework designed to guide public and private investment, to create and promote opportunities for Irish citizens, and to protect and enhance Ireland's built and natural environment.

The NPF contains several National Strategic Outcomes (NSO) over various topics. NSO 3, 6 and 8 support the strengthening of the economy, while NSO 4, 7 and 10 support providing quality access to public services. Achieving the sustainable growth of settlements and management of environmental resources are supported by NSOs 1 and 9. All of the NSOs are underpinned by:

- Sustainable Land Management and Resource Efficiency - adopting the principles of the circular economy to enable more sustainable planning and land use management of our natural resources and assets.
- Low Carbon Economy - accelerating action on climate change.
- Renewable Energy - transition to a low carbon energy future.

The NPF recognises that Ireland's territorial waters present significant opportunities in the offshore renewable energy sector, and its development is "critically dependent on enabling infrastructure, including grid facilities to bring the energy ashore and connect to major sources of energy demand". (Section 7.5 of NPF).

The NPF outlines that a shift to predominately renewable energy is required to transition to a low carbon economy, and this is an integral part of Ireland's climate change strategy. This transition is supported through the following policy objectives:

National Policy Objective 39 Support the sustainable growth and development of the maritime economy and continue to invest in the seafood sector and our Fishery Harbour Centres, particularly in remote rural coastal communities and islands.

National Policy Objective 41a Ensure that Ireland's coastal resource is managed to sustain its physical character and environmental quality.

National Policy Objective 42 To support, within the context of the Offshore Renewable Energy Development Plan (OREDPA) and its successors, the progressive development of Ireland's

offshore renewable energy potential, including domestic and international grid connectivity enhancements.

National Policy Objective 52 The planning system will be responsive to our national environmental challenges and ensure that development occurs within environmental limits, having regard to the requirements of all relevant environmental legislation and the sustainable management of our natural capital.

National Planning Objective 54 Reduce our carbon footprint by integrating climate action into the planning system in support of national targets for climate policy mitigation and adaptation objectives, as well as targets for greenhouse gas emissions reductions.

National Policy Objective 55 Promote renewable energy use and generation at appropriate locations within the built and natural environment to meet national objectives towards achieving a low carbon economy by 2050.

3.3.4.1 Updated Draft Revised National Planning Framework

The commencement of the revision of the National Planning Framework, pursuant to Section 20C (5) of the Planning and Development Act, 2000, as amended, was approved by Government in June 2023. The Draft First Revision to the National Planning Framework (Draft NPF) was made available for public consultation between 10 July and 12 September 2024, and an Updated Draft Revision (incorporating the draft schedule of amendments arising from public consultation, subject to finalisation following environmental assessment) was made available during November 2024. The date of publication of the revised NPF has not yet been agreed/published at the time of writing this report.

Chapter 7 - *Realising our Island and Marine Potential* of the Draft NPF acknowledges the offshore renewable energy targets set within the Climate Action Plan and thus supports the development of offshore renewable energy (ORE). The Draft NMPF also acknowledges the role of ports of regional significance, such as Dún Laoghaire Harbour, to support renewable energy development. Section 7.5 – *Offshore Renewable Energy* of the Draft NPF introduces new policy objectives which support the proposed development, while continued support of the development of electricity transmission infrastructure is provided in Chapter 9 - *Climate Transition and Our Environment*. Relevant policy objectives in support of the proposed development thus include;

National Policy Objective 49 Support the sustainable growth and development of the maritime economy and continue to invest in the seafood sector and our Fishery Harbour Centres, particularly in remote rural coastal communities and islands.

National Policy Objective 51 Support the sustainable delivery of port and harbour infrastructure to facilitate the development, maintenance and operation of offshore renewable electricity generating developments.

National Policy Objective 55 To support, the progressive development of Ireland's offshore renewable energy potential, the sustainable development of enabling onshore and off-shore infrastructure including domestic and international grid connectivity enhancements, non-grid transmission infrastructure, as well as port infrastructure for the marshalling and assembly of wind turbine components and for the operation and maintenance of offshore renewable energy projects.

National Policy Objective 70 Promote renewable energy use and generation at appropriate locations within the built and natural environment to meet national objectives towards achieving a zero carbon economy by 2050.

National Policy Objective 71 Support the development and upgrading of the national electricity grid infrastructure, including to support the delivery of renewable electricity generating development.

Project Response

As has already been noted in previous project responses, the proposed development will comprise the required infrastructure to facilitate an offshore wind farm and associated transmission infrastructure to connect to the national electricity grid. This will assist in increasing the supply of renewable energy necessary to facilitate Ireland's just transition to a low carbon economy - in support of NPO 42, 54 and 55, and NPO 49, 55 and 71 of the Draft NPF. As outlined in section 3.3.1, the proposed development is also aligned with the provisions of OREDP1, with this being further expanded upon in additional sections of this chapter. In further support of NPO 55, and NPO 70 of the Draft NPF, the location of all elements of the proposed development has been chosen to ensure minimal effects on the receiving environment, as detailed within the EIAR accompanying this application.

In alignment with NPO 41a and 52, the proposed development supports the growth and integration of low carbon and renewable energy, and has been subject to full environmental scrutiny, assessments, and modelling exercises to ensure that it will operate within environmental limits and in accordance with all relevant appropriate environmental guidance, best practise and legislation. In addition, there will be no physical character of the coastline as a result of the infrastructure comprising of underground cables and associated support transmission infrastructure. In respect of Sustainable Land Management and Resource Efficiency, offshore wind farms are an efficient and sustainable form of renewable energy generation due to the high speed of winds, and present lower interference with the landscape than land-based energy infrastructure.

The policy wording within the Draft NPF directly supports port related development which facilitates ORE, whereas NPO 40 of the NPF relates to ORE related development at only three Ports of National Significance, as identified in the National Ports Policy 2013. As such, NPO 51 of the Draft NPF supports the proposed O&M Base at Dún Laoghaire Harbour.

The location of the onshore infrastructure has been designed to avoid the sterilisation of lands and thus the landfall site will utilise trenchless technology to ensure neighbourhood amenity is preserved during the construction and operation of the project. Similarly, the majority of the cable route traverse through public roads and associated verges; while the onshore substation utilises brownfield land in close proximity to the grid connection point. The proposed development has therefore been designed in accordance with NPO 55, while overall the proposed development will contribute to the achievement of a low carbon economy for the State.

The EIAR, NIS and WFD accompanying the application, documents and outlines the potential environmental effects and consequent mitigation measures for the proposed development. It thus sets out how Dublin Array has been designed to ensure its compliance with relevant environmental legislation.

3.3.5 National Development Plan 2021 - 2030

The NPF is accompanied by the National Development Plan (NDP), which sets out investment priorities that will underpin the implementation of the NPF, highlighting that '*Extensive efforts have been made to ensure that the NDP will support the Government's climate ambitions*'. In the context of the energy sector, the NDP highlights that "*The long-term objective is to transition to a net-zero carbon, reliable, secure, flexible and resource-efficient energy services at the least possible cost for society by mid-century*".

The centrality of NSO 8 (Transition to a Low Carbon and Climate Resilient Society) to all elements of a spatial policy, is reiterated in this plan, as well as the reduction of fossil fuel use and a commitment to increasing the share of renewable energy up to 80% by 2030. Specific to offshore wind, the NDP outlines that there is *“very significant potential for private investment in the offshore wind sector to substantially contribute to meeting our renewable energy and climate ambition”* and large investment is required to meet the renewable energy targets for 2030.

Project Response

The proposed development, comprising a significant offshore wind energy generation infrastructure project, represents the type and nature of investment described within the NDP that is required to achieve relevant strategic objectives and an 80% renewable energy target as part of Ireland's transition to a low carbon and climate resilient society.

The proposed development is consistent with the aims and strategic investment priorities of the NDP and the aim of decarbonising energy generation by providing the infrastructure necessary to facilitate the generation of energy from an offshore wind farm and the transmission of this energy to the national grid. This will assist in ensuring a higher percentage of renewable energy onto the national grid and towards Ireland meeting its 80% renewable energy target whilst contributing to the just transition and phasing out of fossil fuels in the country.

3.3.6 Integrated National Energy and Climate Plan 2021 - 2030

The Integrated National Energy and Climate Plan 2021-2030 (INECP) is a ten-year plan mandated by the EU³ to each EU member state to achieve their planned contributions to the EU's 2030 renewable energy target. The INECP establishes key measures to address the five dimensions of the EU Energy Union: decarbonisation, energy efficiency, energy security, internal energy markets and research, innovation, and competitiveness.

This Integrated NECP was submitted to the EC in July 2024, and incorporates the Commission's feedback on the 2023 draft as well as feedback from two consultations. The INECP collates the policies, measures and actions related to energy and climate outlined in a range of government plans: such as the Climate Action Plan, the National Development Plan, and Project Ireland 2040, into one cohesive document. It also presents modelling that illustrates Ireland's current trajectories toward its three main European targets.

The INECP notes that offshore wind energy will play a vital role in meeting national and European energy targets. In this regard it notes that Phase One of Ireland's ORE development is intended to deliver the *“maximum competitively procured offshore wind capacity”*.

It is noted that 5 GW is the target for offshore renewable energy – which will be mainly offshore wind. It also acknowledges that Ireland has significant potential for offshore energy, and *“some of the best natural wind resources in all of Europe”*.

Project Response

The proposed development will assist in addressing a number of key measures to address the five dimensions of the EU Energy Union – i.e. decarbonisation, energy efficiency, energy security, internal energy market and competitiveness.

The proposed development is considered to be in accordance with the provisions of the INECP as it will be based within the Irish Sea East coastal area and will further the just transition from fossil fuels and decarbonisation, towards an energy efficient and secure system with sufficient energy supply for Ireland and export (when appropriate and necessary).

³ Required under Regulation on the Governance of the energy union and climate action (EU) 2018/1999

As a significant offshore wind energy generation and associated grid infrastructure development proposal, Dublin Array represents a significant diversification of Ireland's current import-reliant, fossil-fuel based energy generation portfolio towards one that is more diverse and based on the indigenous production of clean, renewable energy sources and is thus compliant with the objectives of the INECP.

Further to the above, Dublin Array will facilitate the generation and availability of up to 824 MW of offshore wind energy onto the national grid, assisting to support the realisation of the 5 GW offshore renewable energy target and capitalise on Ireland's significant offshore wind resource and potential.

In conclusion, infrastructure such as that proposed and associated with the proposed development, is essential to ensure that prescribed national offshore wind energy targets are met to position Ireland in realising its offshore wind potential and energy targets.

3.3.7 Policy Statement on the Framework for Ireland's Offshore Electricity Transmission System 2021

The Policy Statement on the Framework for Ireland's Offshore Electricity Transmission System 2021 is consistent with the Programme for Government, and the new policy outlined in the statement relates to the '*future development, operation and ownership of Ireland's offshore electricity transmission system*', and the establishment of a new regulatory consenting regime for the offshore renewable energy sector in Ireland.

The policy statement acknowledges that Ireland has significant offshore renewable energy potential that is currently underdeveloped. The realisation of this potential will be required to enable the fulfilment of the national renewable energy targets and aims to facilitate the expansion of offshore wind energy. This will help the country meet its greenhouse gas emissions targets and provide for the development, operation and ownership of Ireland's offshore electricity transmission system. The specific target for offshore wind is to achieve 5 GW of offshore wind generation by 2030.

In respect of the above, the new offshore transmission system policy framework envisages that (inter alia):

- The first successful offshore renewable projects will develop the associated offshore transmission system required to connect offshore renewable energy projects to the grid.
- Renewable energy project owners will be required to subsequently transfer transmission system asset ownership to EirGrid in advance of energisation.

Project Response

The proposed development, a designated 'Phase 1' project, will provide the necessary infrastructure to harness wind energy for power generation, and connect it to the existing national electricity grid. Dublin Array will potentially contribute up to 824 MW of the Ireland's identified 5 GW target of offshore wind energy, as highlighted as being required in the Policy Statement.

In accordance with the policy statement, EirGrid as the national electricity transmission system operator, will become the owner and operator of the onshore electrical infrastructure (onshore cables and onshore substation) once the project has been constructed. Offshore infrastructure ownership will transfer to EirGrid following an 18 month proving period has elapsed, post energisation.

3.3.8 Future Framework for Offshore Renewable Energy – Policy Statement

The Future Framework Policy Statement establishes 29 key actions setting out future directions and intergovernmental dependencies that will be addressed through subsequent policy to develop and initiate the long-term, plan-led approach to Ireland's ORE future. The Future Framework outlines a roadmap to achieve Ireland's long term ORE generation ambitions of 20 GW by 2040 and 37 GW by 2025.

The Future Framework outlines that all ORE technologies will play a vital role in meeting the national ORE generation targets, as will the provision of sufficient grid infrastructure to ensure this increase in capacity can be safely accommodated and maximised. In addition, the Future Framework acknowledges that *"consideration must also be given to enabling co-existence of ORE project footprints with other maritime activities"* which can include fishing, aquaculture, transport, tourism or other industrial activities.

The economic importance of developing supply chains to support indigenous ORE projects is recognised as vital within the Framework. Furthermore, this is recognised as an opportunity to become embedded within the global supply chain market for ORE, which is predicted to reach 2.5 terawatts in the future.

Project Response

Notwithstanding that the Framework covers the period post Phase One and Two projects, Phase One projects, such as the proposed development, will play an important role for future ORE development in terms of establishing and supporting local supply chains. Furthermore, the development of current and future ORE projects will have direct economic benefits for indigenous supply chain businesses.

3.3.9 Policy Statement on Security of Electricity Supply

Security of electricity supply is essential for the continued functioning of society and the economy. Energy import dependency is a significant indicator of the country's energy security. Sustainable Energy Authority of Ireland (SEAI, 2021) reports that in 2020 Ireland's import dependency had increased to 72% in 2020.

In November 2021, the Department of the Environment, Climate and Communications (DECC) published the Policy Statement on Security of Electricity Supply. This Statement sets out a number of updates to national policy in the context of the Programme for Government commitments relevant to the electricity sector, planning authorities and developers.

The policy statement references the Government's commitment to renewable energy having an 80% share in energy contribution by 2050, and net zero emissions by 2050: and that having a *'reliable source of electricity'* is vital to achieving these commitments. The Statement thus also reiterates that *"Ensuring continued security of electricity supply is considered a priority at national level within the overarching EU policy framework in which the electricity market operates"*.

Wind, along with solar, is expected to form the majority of renewable energy generated by 2030. The Policy Statement therefore also notes (inter alia), that the *"key challenges to security of electricity supply include:*

- Ensuring adequate electricity generation capacity, storage, grid infrastructure, interconnection and system services are put in place to meet demand – including at periods of peak demand.
- Developing appropriate market rules to incentivise investment and the behaviours of electricity suppliers and consumers in order to deliver greater complementarity between demand and generation.

- Developing grid infrastructure and operating the electricity system in a safe and reliable manner.

Project Response

The proposed development represents infrastructure that is acknowledged as being necessary to assist in supporting the Government's commitment to renewable energy and a target of near zero emissions by 2050. The proposed development will also provide infrastructure to facilitate the connection of the offshore wind farm to the national energy grid system.

As infrastructure such as that proposed by the overall Dublin Array project is supported and developed, dependence on traditional energy sources like coal or gas can lessen, which will positively impact the level of overall carbon emissions as well as the country's reliance on the importation of fossil fuels. This will help to improve the sustainability of our national and European energy sector, as well as improving our security of supply and energy/ electricity affordability.

3.3.10 Climate Action Plan

The initial Climate Action Plan was published in 2019, building on the policy framework of National Mitigation Plan and Project Ireland 2040. The Climate Action Plan is integral to the National Development Plan and illustrates how climate solutions are central to the country's social and economic development. Following the enactment of the Climate Action and Low Carbon Development (Amendment) Act 2021 (Climate Act 2021) each CAP sets out a roadmap of actions on how it will achieve the commitment to 2030 emission reduction targets, increasing the proportion of electricity from renewable sources to 80% and reaching net zero by 2050. Updates to the initial CAP have been prepared in 2021, 2023 and 2024 (CAP24 was approved by Government on 21 May 2024).

All iterations of CAP outline capitalising on Ireland's offshore renewable energy potential will be vital in meeting the national and European climate targets, through increasing renewable generation capacity and decreasing reliance on traditional carbon intensive fuels.

To support the above ambitions, the plan outlines a number of actions that are relevant to the proposed development, as set out in each CAP post enactment of the Climate Act 2021; these are discussed below.

CAP21

Action Number 117 "Facilitate the development of offshore wind, including the connection of at least 5 GW of offshore wind, based on competitive auctions, to the grid by 2030".

CAP23

CAP23 was launched on 21 December 2022 with the supplementary Annex of Actions published in March 2023. The plan implements carbon budget and sectoral emissions ceilings that were introduced in 2022. CAP23 again references Ireland's significant potential for offshore wind noting that *"the development of Ireland's offshore wind energy potential can not only help to improve the sustainability of our national and European energy sector, but it will improve our security of supply and its affordability"*.

CAP24

The offshore wind target of 5 GW by 2030 remains in CAP24, and it is noted that the achievement of this will be vital in ensuring that the electricity sectoral emissions ceiling of 40 MtCO₂eq. for 2021-2025 can be achieved.

Project Response

The proposed development, a designated 'Phase 1' project, will provide the necessary infrastructure to harness wind energy for power generation, and connect it to the existing national electricity grid. Dublin Array will potentially contribute up to 824 MW of the Ireland's identified 5 GW target of offshore wind energy, a key climate action target in CAP24.

3.3.11 Energy Security in Ireland to 2030

Published in November 2023, Energy Security in Ireland to 2030 outlines a new strategy to ensure energy security in Ireland for this decade, whilst ensuring a sustainable transition to a carbon neutral energy system by 2050. This document forms part of a wider Energy Security Package which aims to ensure energy is affordable, sustainable, and secure, while also considering the risks to oil, natural gas, and electricity.

The strategy outlines that *"Ireland's current energy system presents several risks in ensuring uninterrupted availability of energy sources"*, and that these risks will evolve as the energy system transitions to a renewables-based system. These include risks to supply, sudden increase in demand, under delivery of targets, attack and cyber security risks, climate change and investment.

In the context of the above, the strategy outlines that a shift to a renewables – led system, including an acceleration and upscaling in the permitting, construction and connection of wind and solar energy, is essential to ensure Ireland is in a position to meet its renewable energy targets. Delivering these targets is vital to the security of Ireland's energy system, and harnessing indigenous resources is core to the transition to a low carbon society. The increase in renewable usage reduces security risks posed by the importation of energy and global disruptions to supply. The strategy reinforces the importance of the development of renewable energy, in line with the targets set out in CAP23.

Project Response

The proposed development is aligned with the Energy Security Package as it will provide for an offshore windfarm and the necessary grid infrastructure to facilitate connection to the national grid, securing a significant supply of indigenous renewable energy to the system. This will not only assist in ensuring that national renewable energy targets can be met but will also assist Ireland in decreasing its reliance on imported fossil fuels, reducing associated risks such as price increases and global fossil fuel supply shortages.

3.4 Regional Policy Context

3.4.1 Regional Spatial and Economic Strategy for the Eastern and Midlands Regional 2019-2031

The Regional Spatial and Economic Strategy for the Eastern and Midlands Region (RSES) is a strategic plan and investment framework to shape future growth and better manage regional planning and economic development throughout the wider eastern and midlands region until 2031. It identifies regional assets, opportunities and pressures and outlines Regional Policy Objectives to manage the spatial planning in the region.

The RSES states that sustainable growth of the region is not achievable without the provision of high-quality services and infrastructure, to ensure there is adequate capacity to support future development. Having regard to projected population and economic growth in the eastern region, the RSES notes that the increasing demand for electricity in the region must be addressed in a way which balances the need for a significant shift towards renewable energy and enabling resources to be harnessed in a manner consistent with the principles of proper planning and sustainable development. The following actions are outlined to assist in meeting this shift toward renewables:

- Facilitating the provision of appropriate renewable energy infrastructure and enabling technologies
- Expansion and upgrading of the grid with the aim of increasing the share of variable renewable electricity
- Moving from carbon intense fossil fuel generation to lower emissions fuels such as natural gas
- The need to ensure sufficient electricity to meet increased demand

Further to the above, the RSES acknowledges that *abundant natural and environmental resources* are critical for economic and environmental wellbeing, as well as ensuring that the quality of these resource are preserved and enhanced during the transition to a low carbon economy.

In particular, the RSES states that offshore energy will be required to generate electricity supply from indigenous sources as the energy sector decarbonises, and the RSES makes clear that *“The Strategy supports an increase in the amount of new renewable energy sources in the Region. This includes the use of wind energy – both onshore and offshore...on appropriate sites in accordance with National policy and the Regional Policy Objectives outlined in this Strategy”,* and that *“the provision of infrastructure should be supported in order to facilitate a more distributed, renewables-focused energy generation system, harnessing both on-shore and off-shore potential from energy sources such as wind, wave and solar.”*

To support the above, the RSES includes the following regional policy objectives (RPOs):

Energy Infrastructure

RPO 10.20: Support and facilitate the development of enhanced electricity and gas supplies, and associated networks, to serve the existing and future needs of the Region and facilitate new transmission infrastructure projects that might be brought forward in the lifetime of this Strategy. This Includes the delivery of the necessary integration of transmission network requirements to facilitate linkages of renewable energy proposals to the electricity and gas transmission grid in a sustainable and timely manner subject to appropriate environmental assessment and the planning process.

RPO 10.22: Support the reinforcement and strengthening of the electricity transmission and distribution network to facilitate planned growth and transmission/ distribution of a renewable energy focused generation across the major demand centres to support an island population of 8 million people, including: Facilitate the delivery of the necessary integration of transmission network requirements to allow linkages of renewable energy proposals to the electricity.

RPO 10.24: Support the sustainable development of Ireland's offshore renewable energy resources in accordance with the Department of Communications, Energy and Natural Resources 'Offshore Renewable Energy Development Plan' and any successor thereof including any associated domestic and international grid connection enhancements.

Implementation of RSES

RPO 12.4: The EMRA supports smart growth initiatives that develop new solutions to existing and future urban challenges, including climate risks in the Region and will support local authorities in the drawdown of climate and smart technology funds.

Project Response

The RSES supports the development of a safe, secure, and reliable supply of electricity energy networks to meet projected demand levels. The proposed development is consistent with and will provide direct support to the attainment of the above policy objectives in that it will facilitate and supplement existing supply through the integration of additional power generation onto the grid system, thus assisting to ensure that demand on the grid is met, and an increased supply and market penetration of electrical energy from renewable sources can be facilitated. The proposed development is an important economic and social infrastructure project which will assist in ensuring that the RSES vision can be progressed.

The proposed development will further the objectives of the EMR RSES as it will support the growth and integration of low carbon energy and offshore wind renewable energy generation onto the national grid. This will assist Ireland in its just transition as the energy sector continues to decarbonise. In addition, section 3.3.1 above outlines how the proposed development is supported by the Offshore Renewable Energy Development Plan and the current draft of its successor.

In support of RPO 12.4, the proposed development will enable the energy requirements to be met as the economic and social development of urban areas continues and demand increases. This will allow for sustainable development to occur without having negative impacts on the wider environment and assist in combatting the effect of climate change through a transition away from reliance on fossil fuels to generate energy through cleaner sources.

3.5 Sectoral Policy

3.5.1 Shaping Our Electricity Future Roadmap Version 1.1

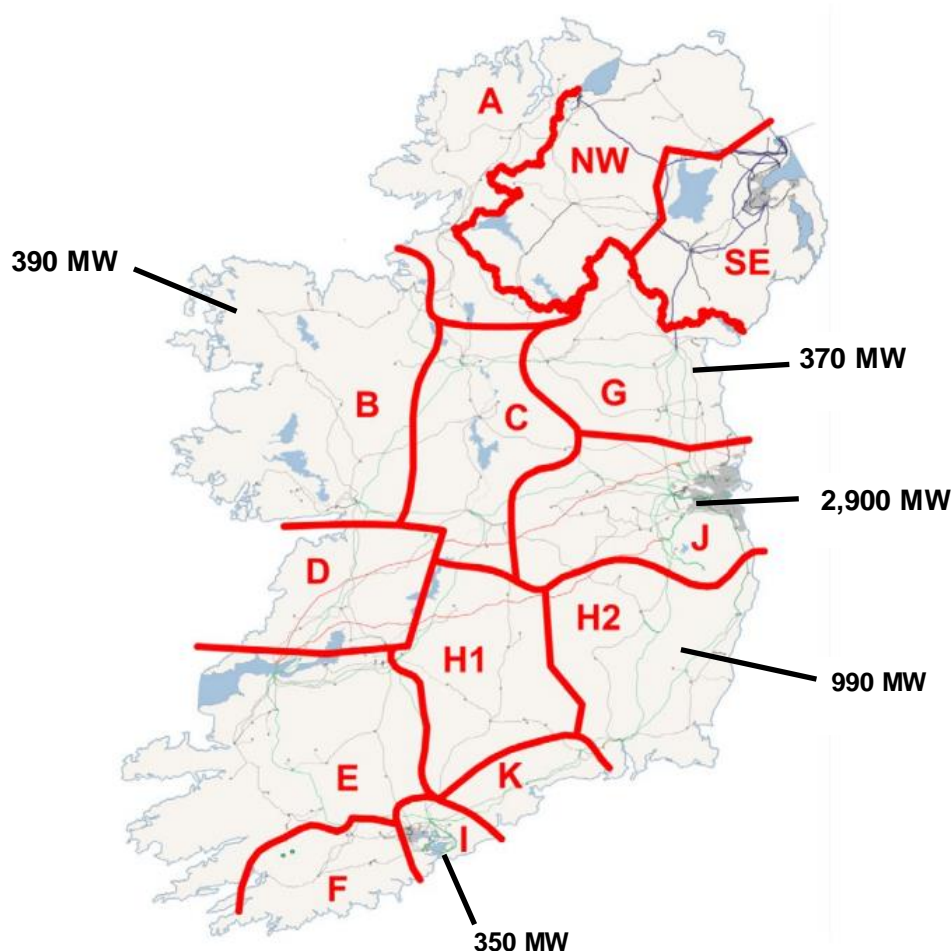
In response to the 2019 Climate Action Plan, EirGrid initiated a programme of work called 'Shaping our Electricity Future' to establish a roadmap for delivering the renewable energy targets outlined by the government and required to replace non-renewable sources of energy such as coal and gas and meet rising electricity demands.

"Shaping our Electricity Future - A Roadmap to achieve our Renewable Ambition" was published in November 2021 by EirGrid and SONI, following a period of stakeholder engagement. In this regard, the Roadmap specifically highlights that throughout the period of public consultation, offshore wind generation was viewed favourably by stakeholders, as it was viewed as having less visual and environmental impacts.

The Roadmap outlines that by 2030, an additional 10GW of energy will need to be supplied from clean sources, which is approximately double that produced in 2020, with the national target for offshore wind generation comprising 5GW of this. The roadmap also outlines that the majority of this will need to be based off the east coast, as it is more technologically feasible, whilst also identifying areas of grid capacity, chiefly along the east coast. Figure 3.1 provides a visualisation of installed offshore wind capacities at the point of connection to the transmission grid.

Figure 3.1: Offshore Wind Potential Connections up to 2030

Offshore Wind Total: 5000 MW



Source: Map extract from Shaping our Electricity Future, Technical Roadmap Report, EirGrid & SONI, November 2021, Appendix 5

In 2023, EirGrid released an updated version of the Roadmap (Version 1.1). The main objective of the updated Roadmap is to ensure the grid is in a position to accommodate increased amounts of renewable energy, in line with the national climate change targets and carbon emission limits that have been published since the original Roadmap in 2021. The updated roadmap outlines that Ireland and Northern Ireland will need another 19 GW of clean energy to support the transition to a low carbon society and the continued development of the country. The Roadmap recognises that as the use of electricity increases across different sectors like heating and transport, renewable energy will have to play an ever-increasing role in the future.

In this regard, the Roadmap still recognises that “Ireland’s greatest source of renewable energy is wind” and that the offshore wind targets outlined in the original version of the Roadmap have not changed and that these are expected to be a key contributor to delivering on national renewable targets. It further reiterates that the initial focus is on offshore wind developments on the east coast, as this is the largest energy demand area in the country. It is maintained that the development of offshore wind in this area will reduce constraints on the network, and therefore reduce the quantity and scale of system reinforcements required.

Project Response

The overall proposed development will facilitate the delivery of offshore wind electricity generation and transmission infrastructure, allowing for an increase in renewable energy to be supplied to the national grid. In order to meet the wind energy targets outlined for 2030, infrastructure such as the proposed development is required to ensure that clean energy can be supplied to the grid, in order to meet rising electricity demand whilst also phasing out fossil fuels.

The offshore wind turbine array and associated offshore transmission infrastructure will connect to the proposed onshore grid infrastructure. The proposed development will be located off the east coast of the island, in accordance with the provisions of the roadmap which outlines this as being the most technically feasible location for such infrastructure. In addition, the proposed development's location on the east coast will reduce the need for transmission system reinforcement as it is in close proximity to the large demand centres in the east of the country. Furthermore, EirGrid provided direction to the application to facilitate the grid connection at Carrickmines in respect of national transmission grid assessments and capacity issues in the area.

3.5.2 EirGrid Transmission Development Plan 2024-2033

The Transmission Development Plan (TDP) was prepared in accordance with EirGrid's statutory obligation to publish a yearly development plan. The TDP covers the period from 2024 to 2033 and presents projects that EirGrid have considered are needed to reinforce the transmission network and to assist in achieving the strategic objectives laid out by sectoral, national and EU policies.

The TDP outlines committed projects and projects under development, for the enhancement of the Irish transmission network over the period of the plan. The plan outlines the following objectives that will be used to guide investment into the Irish Transmission network:

- Ensuring the security of electricity supply
- Ensuring the competitiveness of the national economy
- Ensuring the long-term sustainability of electricity supply in the country

The plan also highlights that 'supporting the integration of Renewable Energy Sources' will be a driver for investment into the transmission grid, and that the strengthening of the transmission network is necessary to ensure that electricity supply is reliable, and demands can be met.

The TDP acknowledges that the development of offshore renewable energy infrastructure will play a key role in the transition towards a sustainable energy network" and in addition to contributing to the decarbonisation of the energy system, that renewable energy also contributes to energy security as it is an indigenous source of energy. Whilst at present onshore windfarms are the main sources of renewable energy in Ireland, it will be vital for other technologies to be developed. In this regard, the TDP reiterates the 5 GW offshore wind target outlined in the Climate Action Plan 2023, and notes that if this target is going to be fulfilled, many renewable energy projects are expected to be developed over the course of the TDP (2024- 2033).

In the context of offshore renewable energy, the TDP acknowledges that Ireland has "*considerable offshore renewable energy potential*" and further identifies that significant development of such infrastructure will be required in the coming years and will play a key role in the transition to a low carbon economy.

The TDP identifies Dublin Array as a Phase 1 Project that is driven by the need for RSES integration. In the context of development in the Dublin Area. The TDP states that the greater

Dublin area is a major load centre on the transmission network, and as demand grows the network will need to accommodate high density demand in the area. In this regard, it notes that the development of offshore wind generation can reduce large transfers of power from the West.

Project Response

The proposed development is aligned with the TDP as it represents a type of project that is needed to achieve national, sectoral and EU renewable energy objectives and targets. The proposed development will provide for the required onshore grid infrastructure that will connect the proposed development to the existing electricity grid system.

The proposed development will have the capacity to generate up to 824 MW, which will contribute to the 5 GW offshore wind national renewable energy target. In addition, the proposed development will be located off the east coast of Ireland, placing it in close proximity to the large demand centre of the greater Dublin Area. This will lessen the need for power transfers from other parts of the country and ensure the growing demand in the region can be met by energy harnessed from offshore wind which is a renewable energy source.

The proposed development will provide for the required energy generation and grid infrastructure to facilitate wind generated energy from Dublin Array to be integrated into the existing national grid. This will assist in ensuring the electricity system is secure and reliable during the transition to a low carbon economy, through the provision of additional renewable energy supply.

The proposed development reflects the type of project that will be a driver for investment into the grid, and this will be important to support and ensure the existing grid has the capacity to provide sufficient, sustainable electricity supply. The Dublin Array project as a whole, i.e. inclusive of generating and grid infrastructure assets, will assist in contributing to the overall security of electricity supply in the country and long-term sustainability.

3.5.3 Grid Implementation Plan 2023-2028

The Grid Implementation Plan (GIP) is set in the strategic policy context of 'The White Paper: Ireland's Transition to a Low Carbon Energy Future 2015-2030', which reaffirms the Government's existing approach to change to a low-carbon energy future. In this regard, the DGIP acknowledges that there is a clear relationship between energy policies and economic development, and that *"investing in a secure transmission grid will open up large areas of the country for investment and will assist in facilitating further attraction of the high-tech power-dependent sector."*

In the context of the 5 GW offshore wind target set in CAP23, the GIP notes that the proposed Dublin Array project was among the successful Offshore Renewable Electricity Support Scheme (ORESS) 1 projects which were awarded Maritime Area Consents in 2022.

In order to ensure appropriate protection of the environment during widespread grid development, the GIP outlines a number of policies and objectives. Highlighted below are those which are considered relevant to the proposed development:

It is the policy/objective of EirGrid:

NVP1: To uphold best environmental practice in the design and appraisal of onshore and offshore grid development, considering impacts onshore, offshore, cumulatively and across state boundaries where relevant.

ENVP4: To require the use of sustainable urban drainage systems in all new grid developments where appropriate.

ENVO1: To ensure that grid development projects onshore and offshore follow standard approaches to environmental assessment of grid development projects including EirGrid topic specific guidelines on Electromagnetic Fields (EMF), Cultural Heritage, and Ecology and international best practice.

ENVO5: That all grid development proposals, and in particular, transmission substation developments, shall carry out, to an appropriate level of detail, a site-specific Flood Risk Assessment that shall demonstrate compliance with all current Guidelines, standards and best practice. The Flood Risk Assessment shall pay particular emphasis to residual flood risks, site-specific mitigation measures, flood-resilient design and construction, and any necessary management measures.

CLIMP2: To support, through all activities, and in particular connection of low-carbon and renewable energy generation onshore and offshore, delivery of the Government's target of up to 80% electricity consumption generated from renewable energy sources by the year 2030.

Project Response

The proposed development design has been undertaken in consideration of EirGrid's guidance/best environmental practice documents and in consultation with both Dún Laoghaire-Rathdown County Council and EirGrid. Installation of the proposed Dublin Array infrastructure will be to EirGrid specifications and resemble that of installations carried out by EirGrid in the region.

In addition, design relating to the proposed Dublin Array onshore elements has been progressed in consultation with DLRCC Water Services Department and a SuDs has been incorporated into the project design within the onshore substation site, through the provision of underground attenuation storage tanks. A Flood Risk Assessment has been prepared for the onshore works (OSS and onshore cables) and Operations and Maintenance Base infrastructure) and has confirmed that the proposed development is considered to be 'appropriate development' in accordance with The Planning System and Flood Risk Management - Guidelines for Planning Authorities (Government of Ireland/OPW, November 2009).

The EIAR, NIS and WFD accompanying the application, outlines the potential environmental effects the proposed development may give rise to, and the project design features, avoidant and prevention measures, and mitigation measures that have been implemented to avoid, prevent and/or reduce effects. These assessments thus set out how the proposed development will comply with the relevant environmental laws.

3.6 Local Policy

Whilst Dublin Array will contribute to the energy needs of the State, and assist in reducing Ireland's total carbon emissions through the provision of renewable energy, it will be almost entirely located within the administrative area of Dún Laoghaire-Rathdown County Council. As such, the Dún Laoghaire-Rathdown County Development Plan 2022-2028 is the key local policy document in the context of this planning application.

3.6.1 Dún Laoghaire – Rathdown County Development Plan 2022-2028

The Dún Laoghaire-Rathdown County Development Plan (DLRCDP) was adopted on the 21 April 2022 and outlines the policies and objectives for the overall development of the County. The vision for DLRCDP is to *'embrace inclusiveness, champion quality of life through healthy placemaking, grow and attract a diverse innovative economy and deliver this in a manner that enhances our environment for future generations.'* The realisation of this vision is underpinned by five Strategic County Outcomes:

- Creation of a climate resilient County
- Creation of a compact and connected County
- Creation of a network of liveable towns and villages
- Creation of an inclusive and healthy County
- Creation of a vibrant economic County

Ensuring that the energy system transitions to a reliable, low carbon system is integral to achieving all of the above-mentioned outcomes, and the DLRCDP acknowledges that renewable energy will play an increasing role in achieving this. In particular, the DLRCDP supports an increase in use of renewable energy and low carbon resources such as offshore wind, as they are alternatives to fossil fuels and can support local economic development and employment. In addition, the plan acknowledges that wind energy will play an important role in achieving national climate change targets, and that offshore wind resources offer the greatest contribution to large scale renewable energy development.

In order to support the capitalisation of the range of renewable energy opportunities within the county, the DLRCDP outlines a number of specific renewable energy policy objectives. These are identified hereunder.

3.6.1.1 Renewable Energy Policy Objectives

CA10: Renewable Energy It is a Policy Objective to support County, Regional, National and International initiatives and pilot schemes to encourage the development and use of renewable energy sources, including the SEAI Sustainable Energy Community initiatives, as a means of transitioning to a low carbon climate resilient County in line with national renewable energy targets.

In particular, the DLRCDP supports the increase in use of renewable energy and low carbon resources such as offshore wind as they are alternatives to fossil fuels and can support local economic development and employment. In addition, it acknowledges that wind energy will play an important role in achieving national climate change targets, and that offshore wind resources offer the greatest contribution to large scale renewable energy development.

CA11: Onshore and Offshore Wind Energy and Wave Energy It is a Policy Objective to support in conjunction with other relevant agencies, wind energy initiatives, both onshore and offshore, wave energy, onshore grid connections and reinforcements to facilitate offshore renewable energy development when these are undertaken in an environmentally acceptable manner. (Consistent with NSO 8 and NPO 42 of the NPF and RPO 7.36 and 10.24 of the RSES).

EI18: Energy Facilities It is a Policy Objective to encourage the provision of energy facilities in association with the appropriate service providers and in accordance with 'Government Policy Statement on the Strategic Importance of Transmission and Other Energy Infrastructure' (2012). In addition, the Council will facilitate, subject to the proper planning and sustainable development of the area, the expansion of the services and infrastructure of existing service providers, notably Bord Gáis, EirGrid, the Electricity Supply Board (ESB), other strategic electricity infrastructure developers and statutory undertakers, in order to ensure satisfactory levels of supply and to minimise constraints for development.

EI19: Overhead Cables It is a Policy Objective to seek the undergrounding of all electricity, telephone and television cables wherever possible, in the interests of visual amenity and public health.

Project Response

The proposed development, which comprises an offshore wind farm and onshore electrical system infrastructure to facilitate same, is entirely in accordance and aligned with the renewable energy policy objectives as set out in the DLRCDP and reflected above.

The proposed development is a key ORE Phase 1 project which will support Ireland's Climate Action Plan to deliver 80% of electricity demand from renewable sources by 2030. As such it will assist in contributing to meeting Ireland's GHG emissions target by offsetting Ireland's carbon emissions by between 1,100,000 and 1,230,000 tonnes per annum. The proposed onshore electricity transmission export cables are also intended to be installed underground, in accordance with policy objective EI19.

Other policy objectives considered relevant to the proposed onshore grid infrastructure elements of Dublin Array project, include:

Table 3.1: Relevant Policy Objectives of Dun Laoghaire-Rathdown County Development Plan

Theme	Policy Objective
Climate Action	CA1: National Climate Action Policy It is a Policy Objective to support the implementation of International and National objectives on climate change including the 'Climate Action Plan 2021 Securing Our Future', the 'National Adaptation Framework' 2018, the 'National Energy and Climate Plan 2021- 2030', and take account of the 'Climate Action and Low Carbon Development (Amendment) Act 2021', and subsequent updates, other relevant policy, guidelines and legislation, that support the climate action policies included in the County Development Plan.
Marine Planning	GIB7: National Marine Planning Framework (NMPF) It is a Policy Objective to support the policies and objectives as appropriate and relevant of the National Marine Planning Framework (NMPF), with respect to the conservation, management, and protection for a sustainable future for the marine area.
Landscape	GIB6: Views and Prospects: It is a Policy Objective to preserve, protect and encourage the enjoyment of views and prospects of special amenity value or special interests, and to prevent development, which would block or otherwise interfere with Views and/or Prospects.
Archaeology	HER1: Protection of Archaeological Heritage It is a Policy Objective to protect archaeological sites, National Monuments (and their settings), which have been identified in the Record of Monuments and Places and, where feasible, appropriate and applicable to promote access to and signposting of such sites and monuments. HER2: Protection of Archaeological Material in Situ It is a Policy Objective to seek the preservation in situ (or where this is not possible or appropriate, as a minimum, preservation by record) of all archaeological monuments included in the Record of Monuments and Places, and of previously unknown sites, features and objects of archaeological interest that become revealed through development activity. In respect of decision making on development proposals affecting sites listed in the Record of Monuments and Places, the Council will have regard to the advice and/or recommendations of the Department of Culture, Heritage and the Gaeltacht (DCHG).
Environmental Infrastructure	EI6: Sustainable Drainage Systems It is a Policy Objective to ensure that all development proposals incorporate Sustainable Drainage Systems (SuDS). EI9: Drainage Impact Assessment It is a Policy Objective to ensure that all new development proposals include a Drainage Impact Assessment that meets the requirements of the Council's Development Management Thresholds Information Document (see Appendix 3) and the Stormwater Management Policy (See Appendix 7.1). E20: Low Carbon Economy It is a Policy Objective to support the transition to a low carbon economy.
Development Management Standards	Urban Greening The potential for urban greening should be explored, including the integration of high-quality landscaping and nature-based solutions into building design and overall layout.

Project Response

Chapter 3 (sections 3.2 and 3.3) of this Planning Report illustrate Dublin Array's alignment and consistency with both EU and national policies and objectives in relation to climate change. The

proposed development will help Ireland decarbonise its electricity supply and meet climate goals of 75% GHG reduction (over 2018 levels) by 2030. In particular, it is highlighted that the proposed development will offset Ireland's carbon emissions by between 1,100,000 and 1,230,000 tonnes per annum.

Chapter 4 of this Planning Report sets out and outlines the proposed developments compliance and consistency with the provisions of the NMPF.

In relation to views and prospects and the proposed OSS, the O&M Base and underground cable elements, the land use zoning maps indicate that the closest 'views to preserve' occur along both sides of the L3020 (Ballyedmonduff Green Road) [to the southwest] which is at an elevation greater than the OSS. The OSS will therefore not obstruct, block or interfere with these, nor any views or prospects identified in the Development Plan.

As regards the O&M Base, there are prospects to be preserved for the East Pier and Station Road. Similarly however, the proposed O&M Base will not obstruct, block or interfere with such prospects and is therefore in accordance with GIB6. Volume 5, Chapter 5.8 of the EIAR assesses the potential impacts on the archaeological, architectural and cultural heritage associated with the Dublin Array onshore infrastructure. Testing will provide information on the nature and extent of any archaeological remains within the proposed Dublin Array project area, enabling the compilation of a programme of works to ensure the sites are fully preserved by record, in a manner deemed appropriate in agreement with the National Monuments Service of the Department of Housing, Local Government and Heritage. In addition, a number of mitigation measures are proposed during the construction and remediation phase of the proposed development, and these are set out in the EIAR accompanying the application to ABP.

In relation to drainage, the proposed surface water drainage system will incorporate SuDs measures and will meet the requirements of the Council's Development Management Thresholds Information Document (Appendix 3 of the Development Plan) and the Stormwater Management Policy (Appendix 7.1), except where an exemption is necessary due to the nature and constraints of the site and has been agreed, in advance, with the local Authority. In this regard, design relating to the proposed Dublin Array onshore elements has been progressed in consultation with DLRCC Water Services Department and a SuDs has been incorporated into the project design within the onshore substation site, through the provision of underground attenuation storage tanks.

The potential for urban greening has also been assessed in consultation with DLRCC. In this regard the main building in the O&M Base and the main building (GIS building) in the onshore substation will incorporate green roofs. The green roofs will be drought resistant and will act as a buffer for slowing down rainwater from reaching the outfalls for surface water.

3.6.1.2 Appendix 7 Green Roofs Policy

Appendix 7 of the DLRCDP outlines the County Council's Green Roof Policy. It provides guidance on the policy requirements of green roofs and identifies the standards for both green and blue roofs. In this regard, Standards GR1

identifies the types of developments that require a green or blue roof (which includes a green component). These include planning applications which include roof areas of greater than 300 square metres for the following development types, as part of development proposals.

- Apartment Developments
- Employment Developments
- Retail and Ancillary Shopping
- Leisure Developments

- Education Facilities

The Policy notes that any exemptions “*will only be granted by Municipal Services where it is demonstrated that suitable provision is made for SuDS measures that provide the equivalent enhancement of amenity and habitat and equivalent interception/treatment that green roofs would have provided on the site, and all other planning requirements / policies are demonstrated to be delivered without the requirement of a green roof.*”

Project Response

In relation to the DLRCDP Green Roofs Policy as outlined above, it is highlighted that neither the proposed substation nor the proposed O&M Base is of a type of development which requires a green or blue roof under Standard GR1. Notwithstanding, the proposed O&M Base and main GIS building in the onshore substation will integrate green roofing on its horizontal surfaces.

3.6.1.3 Appendix 14 Green Infrastructure Strategy

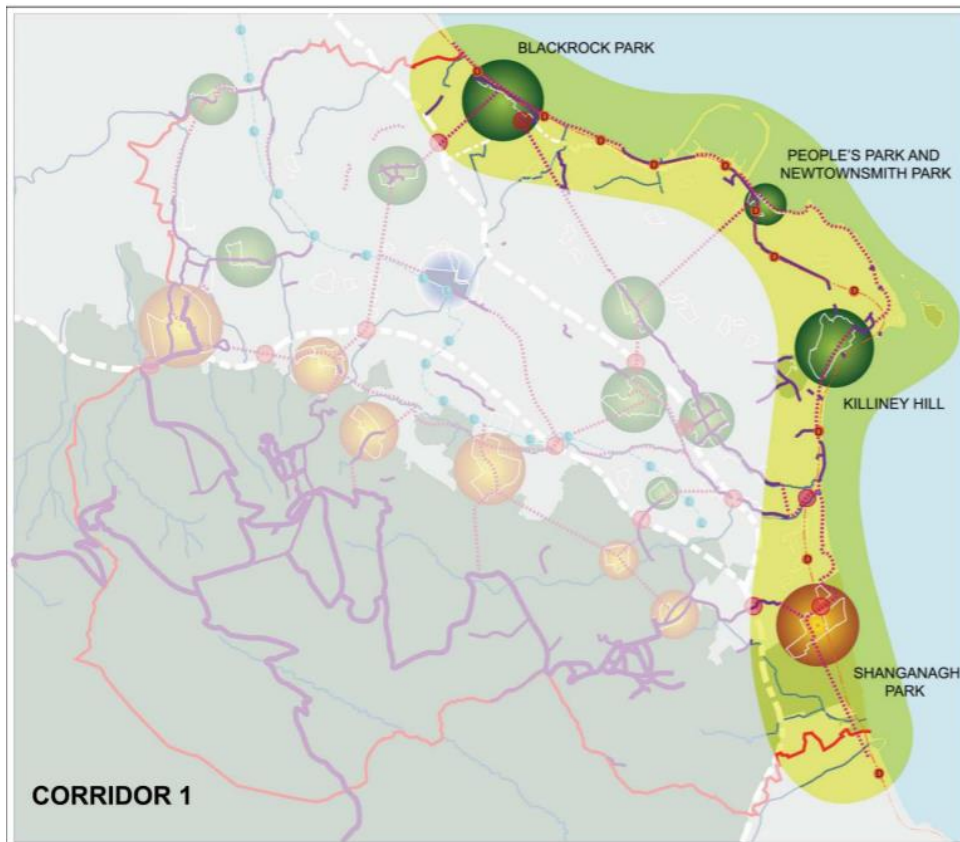
Appendix 14 of the DLRCDP provides a green infrastructure strategy for the Dún Laoghaire-Rathdown area, which “*seeks to provide a vision and a framework which will protect, promote and extend the GI assets (the network of green spaces, habitats and ecosystems of Dún Laoghaire-Rathdown)*”.

Within the strategy, six green infrastructure corridors are proposed across Dún Laoghaire-Rathdown. These corridors are “*the principal, higher-level or County-wide components of the spatial framework for GI*” (GI -green infrastructure). In the context of the proposed development, the following corridors are relevant:

Corridor 1 – Coastal

The coastal corridor extends from Shanganagh Park through Killiney Park, Peoples Park and Newtownsmith Park and ends in Blackrock Park (refer to Figure 3.2).

Figure 3.2: Coastal Corridor



Map 17: Corridor 1. Coastal.

Source: DLRCDP Appendix 14, page 40

The principal role of this corridor is to connect open spaces and recreational assets, linking local parks, greenways and cycle routes. The following three objectives are indicated for the corridor:

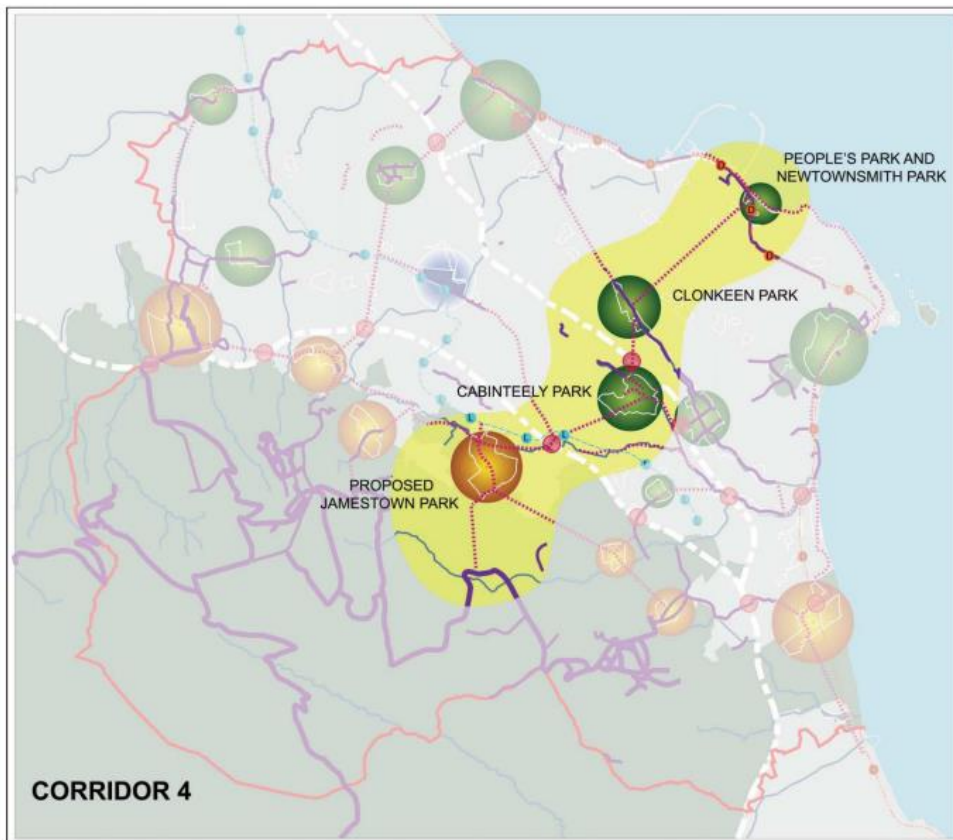
- To provide a coastal corridor that connects a number of regional parks and iconic recreational sites within the County and extends into the surrounding administrative boundaries.
- To improve visitor experience and increase duration of stay by providing a wide range of transport options and linkages to a choice of parks.
- To provide a multi-functional GI corridor crossing and connecting the mountain, urban area and coast and linking with other corridors.

Corridor 4 - Dún Laoghaire to the Mountains

Corridor 4 extends from Newtownsmith Park and extends through People's Park, Clonkeen Park, Cabinteely Park and the Proposed Jamestown Park. (Figure 3.3). The objectives for this corridor are:

- To provide a multi-functional GI corridor connecting the mountain, urban area and coast.
- To develop the proposed Jamestown Park as a Gateway Park to the mountains.

Figure 3.3: Dún Laoghaire to the Mountains Corridor



Map 20: Corridor 4. Dún Laoghaire to the Mountains.

Source: DLRCDP Appendix 14, page 46.

Project Response

At the landfall area at Shanganagh Cliffs, the installation of the offshore export cables from land, will use a trenchless (below ground) technology to firstly install the required cable ducts, with the offshore export cables subsequently pulled through using a winch. Using trenchless technology will safeguard the cliffs stability and integrity, whilst retaining existing open space/ corridor areas, or any temporary alternative provided to accommodate implementation of the proposed development.

The design of the underground elements and cable corridor of the proposed onshore electrical system infrastructure relating to the proposed development, has endeavoured to utilise existing public roads as far as possible, to limit disturbance to existing or proposed green infrastructure corridors. As these elements which will traverse part(s) of the above-identified corridors, will be located underground, they will not negatively impact the objectives of the corridors, aside from the need for future awareness and design considerations being given to their location.

The construction process to be employed during construction and the reinstatement of all lands above ground to their original state, as part of the development works, is assessed in the relevant chapters of the EIAR. The effect on the land use is discussed within the EIAR chapter on Landscape and Visual Amenity (Volume 5, Chapter 5.7 of the EIAR).

3.6.2 Dún Laoghaire – Rathdown County Council Climate Action Plan 2024-2029

The DLRCC Climate Action Plan (CAP) aims to align with national and international climate goals and policies and provide a range of innovative programmes to take action against climate change within the county and the wider Dublin area. The DLRCC CAP provides a framework across 6 themes: Energy Efficient Buildings/Renewable Energy, Decarbonised Motorised Transport, Nature Based Solutions, Flood Resilience, Circular Economy, and Community Engagement.

In the context of renewable energy, the CAP acknowledges that Ireland is overly reliant on fossil fuels, and reducing this reliance will be vital for not only reaching the national renewable energy targets, but also reducing the level of exposure to price increases in the European Energy market. In this regard, the CAP states there is significant potential in offshore energy production off the coast, and that the council will *“engage with the relevant stakeholders in relation to the development and implementation of wind and other energy infrastructure projects.”*

The proposed development is specifically referenced within the CAP as being a *“major offshore wind development”* that aims to harness abundant wind resources on the east coast to contribute to national renewable energy goals. The CAP recognises that the proposed development is a *“key enabler to meeting the Government’s Climate Action Plan target of 5GW of offshore wind energy being connected to the Irish national electricity grid by 2030”*. Furthermore, the CAP outlines that Dublin Array will not only provide environmental benefits, but will create job opportunities, community gain and improve the quality of life for communities in the county.

Project Response

Onshore elements of the design of the proposed development have included considerable engagement with and input from DLRCC throughout their evolution.

The DLRCC CAP provides explicit support for Dublin Array and is specifically referenced as being a key enabler in meeting the national 5GW energy targets. In this regard the proposed development will provide an additional indigenous source of renewable energy generation and will assist in decreasing Ireland’s reliance on imported fossil fuels.

As outlined in the DLRCC CAP, the proposed development will provide significant social benefit through the commitment of an investment of approximately €6.4 million per annum through the ORESS1 Community Benefit Fund, which will contribute to a number of communities in the area, including coastal and marine communities through an application-based system.

3.6.2.1 Interim Dún Laoghaire Urban Framework Plan

The Urban Framework Plan (UFP) for Dún Laoghaire is included as Appendix 17 of the DLRCDP. The UFP is intended to set out a clear and coherent vision to assist and guide the ongoing development and regeneration of Dún Laoghaire town. The vision of the UFP is stated as being *“to continue the regeneration of Dún Laoghaire in becoming a thriving sustainable and attractive place to live, work and visit.”*

There are three themes which underpin the UFP;

- Creating synergies between the town centre and the Waterfront
- Placemaking and creating vitality
- Strengthening links with adjoining areas

In the above regard, the harbour is seen as an important asset for the rejuvenation of the town and is highlighted as offering *“high quality regeneration incorporating a mix of uses, high quality*

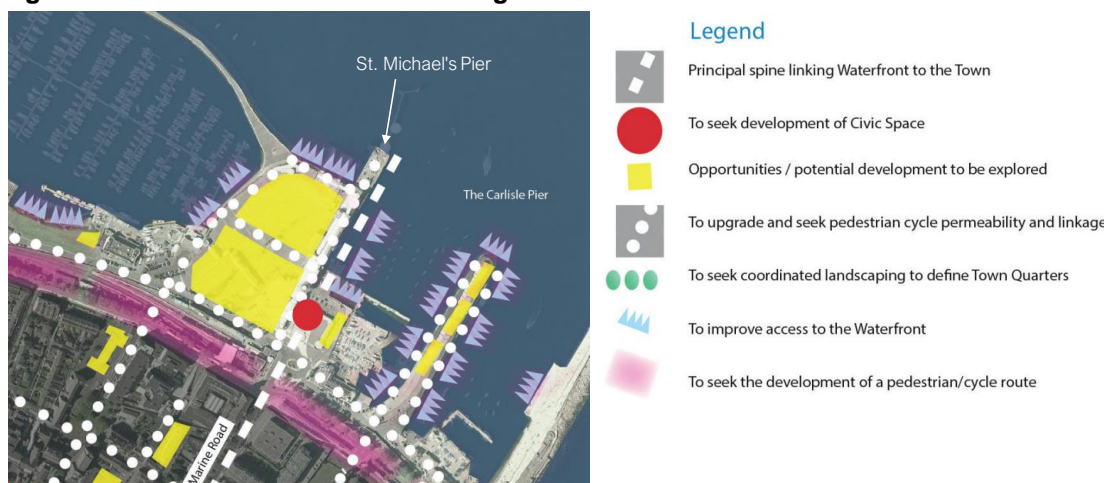
public realm and improved pedestrian and cycle connectivity to the wider area". The UFP notes that the [re]development of the waterfront and specifically the ferry terminal (St. Michael's Wharf – the location of the proposed O&M Base), offers the greatest potential to accommodate new development, and an opportunity for sensitive regeneration.

It is also identified that the cultural and built heritage of Dún Laoghaire Harbour will be central to the redevelopment of the Waterfront. It is an objective of the UFP to *"promote this and the overall historical significance of the harbour as its unique selling points"*. The UFP seeks to increase the desirability of the waterfront through the creation of a Harbour plaza, with the addition of a public space, landscaping, street furniture and amenities, and as per Objective 10 of the UFP provide a mix of uses at St. Michael's Wharf, including employment, marine, leisure and tourism to bring vitality and activity to the area.

A number of design concepts and requirements (refer to Figure 3.4) are suggested to be delivered by development in this area of the harbour, with those considered of relevance to the proposed development being reflected hereunder:

- Any development within this area should connect directly with Marine Road so as to prevent a differentiation between the town and the harbour.
- Direct access should be provided to the Waterfront.
- Further measures to improve pedestrian movement, including an assessment of the large roundabout on Harbour Road, together with improved legibility, should be examined.
- Any development within the Harbour should be appropriately scaled to its context and should exhibit the highest level of design ambition leading to a Waterfront that will be an international exemplar.
- Cultural and Leisure uses will generally cluster to the east of St Michael's Wharf - on the Carlisle Pier and along the East Pier.
- Marine Activities and Enterprise are likely to cluster around the Irish Lights Headquarters, Coastguard Station and Cottages and the Coal Harbour.
- Traditional sail, fishing and boating activities will occur across the entire Harbour area.

Figure 3.4: Urban Structure of Dún Laoghaire Harbour



Source: Dún Laoghaire-Rathdown County Development Plan 2022-2028, Appendix 17

Project Response

The proposed development is aligned with the objectives and vision of the UFP. It is considered that the development of the O&M Base at St, Michael's Pier offers the opportunity to provide

vitality to the Waterfront under Theme 2. Its development will also assist in ensuring that employment which is marine-centric is based at the Waterfront and will fulfil the requirement for employment uses. The proposed O&M building has been designed so that it has the appearance of a ship berthed in dry dock, with façade detailing, which is cognisant of its maritime uses, through the application of bronze coloured anodised aluminium cladding to replicate rusting boat hulls, thus providing a strong and visible connection of the proposed development to the historical and existing maritime context of the harbour area. An O&M Base Design and Access Statement (DAS) has been prepared to accompany this planning application. The DAS provides a comprehensive background to the design process and context of the O&M Base.

In response to the design requirements provided in the UFP, the proposed development will be located at St Michael's Pier within Dun Laoghaire Harbour, where it can be accessed via Harbour Road, and Marine Road Via roundabout. Whilst an entrance gate and fence will be constructed on the perimeter of the proposed parking area of the development to limit access to approved personnel, due to the nature of the development, no changes to the existing site access routes are proposed.

Due to the nature of the proposed development, no measures to improve pedestrian movement can be included. Additionally, it is not feasible to incorporate cycle lanes within the boundary of the O&M Base, however 20 cycle parking spaces will be provided for staff and visitors, in line with the requirements provided within the DLRCDP requirements.

The built form of the proposed O&M Base relates directly to the existing alignment and arrangement of the pier and will follow the building lines of the adjacent terminal building. As highlighted above, the overall architecture and design style of the building is based on the form of a modern ship in dry dock, reflecting the surrounds and history of the surrounding area. In addition, the second floor is deliberately setback to align with the main portion of the existing terminal building, ensuring the proposed O&M Base is not out of place in the context of the surrounding buildings.

The location of the proposed O&M Base, on St. Michaels Pier, in the harbour, is consistent with the surrounding land uses, which are all marine related activities, thus contributing to the existing 'cluster' of marine related uses already located within this area. Whilst the proposed development does not include cultural or leisure uses, the Applicant will work with communities within Dún Laoghaire-Rathdown, as part of the community benefit fund scheme where the ORESS requirements will likely encourage a focus on funding that supports education, energy efficiency, sustainable energy and climate action initiatives.

3.6.2.2 Economic Plan for Dún Laoghaire Harbour 2021

The Economic Plan for Dún Laoghaire Harbour was prepared to develop the harbour and maximise its associated benefits to its citizens. The Plan outlines 7 strategic recommendations to guide future development of the harbour. Of particular note in the context of the proposed development, is the fifth of these, which includes the strategic recommendation to *'Develop Dún Laoghaire as an Operation and Maintenance Base to Support Offshore Renewable Energy.'*

As part of this recommendation, the Economic Plan recognises that the harbour has the potential to support offshore renewable energy, in line with national objectives, to achieve a 5 GW capacity for offshore wind in tandem with wider decarbonisation efforts. The national goal thus creates an opportunity for Dún Laoghaire Harbour to *'provide facilities to support offshore renewable operation and maintenance activities'*.

The Economic Plan also highlights that any O&M activities should be consistent with the wider leisure and amenity uses within the Harbour and that the Higher Education/ Further Education

and Training (HE/FET) sector in DLRCC should be integrated with plans to development O&M activities.

Project Response

The proposed development includes an O&M Base that will support the overall Dublin Array project. Developing Dún Laoghaire Harbour area as an operational base to support offshore renewable energy is a core recommendation of the Economic Plan. The provision of an O&M Base and associated services at St Michael's Pier within the harbour area, is thus supported through recommendation 5. The proposed O&M Base will capitalise on existing infrastructure and facilities within the harbour and the opportunities for renewable energy, whilst providing an O&M Base to support the proposed development.

The Applicant will work with communities as part of the community benefit fund scheme to ensure that the community benefit fund is distributed for the benefit of the Target Local Community, in accordance with the requirements of the *ORESS1 Community Benefit Fund Rulebook for Generators and Fund Administrators (Government of Ireland, January 2023)*, as may be updated by the relevant Minister or nominated body. Due and careful consideration will be given to funding opportunities for all stakeholders in the CBF Target Local Community, including, but not limited to, local fishers, seafood culture, tourism, the wider blue economy, and maritime heritage communities.

3.6.2.3 Dún Laoghaire Town Spatial and Economic Study 2021

The Dún Laoghaire Town Spatial and Economic Study was undertaken in an effort to identify opportunities for growth of the employment sector, improve the vibrancy and vitality of the town and attract key economic centres, and '*position Dún Laoghaire Town as a vibrant, attractive community.*' The study acknowledges that it is vital that the town is prepared to respond to the changing economic environment, and that there is a shared vision for the town and harbour.

The Study outlines a number of Key Objectives which include encouraging appropriate use of renewable technologies. A public consultation was undertaken as part of the study formulation process. During this, the study notes that respondents highlighted the harbour as a significant asset to the town, and that providing more opportunities for employment in the harbour would further integrate the harbour with the town, with particular opportunities in the marine sector.

Project Response

The proposed development will capitalise on existing infrastructure and facilities within the harbour and the opportunities for renewable energy presented. Its development will ensure that employment which is marine-centric is based at the Waterfront and will contribute towards the provision of additional employment opportunities within the area.

In this regard, it is anticipated that implementation of the proposed development and associated O&M Base will create and sustain 200 to 240 full time equivalent (FTE) jobs (direct and indirect combined) with retained local expenditure within the Greater Dublin Area of up to €22 million per annum). As summarised in Volume 3, Chapter 17 Socio-economic, Tourism, Recreation and Land Use), the construction of Dublin Array is anticipated to create €62-68 million Gross Added Value (GVA) per annum within the Greater Dublin Area through the construction phase, and €14-€17 million GVA per annum within the Greater Dublin Area through the O&M phase. In addition, the economic modelling suggests that construction may support up to 800-875 FTE person years of employment (assuming a co-ordination port located within Greater Dublin) per annum, many of which would be within the construction sector. For the O&M phase, the assessment states that a total of 200-240 FTE jobs will be created per annum, with around 70-80 of those being direct FTEs. As such, the proposed development will represent an important boost for the economy and employment.

3.6.3 Local Area Plans

3.6.3.1 Cherrywood Strategic Development Zone Planning Scheme 2014, as amended

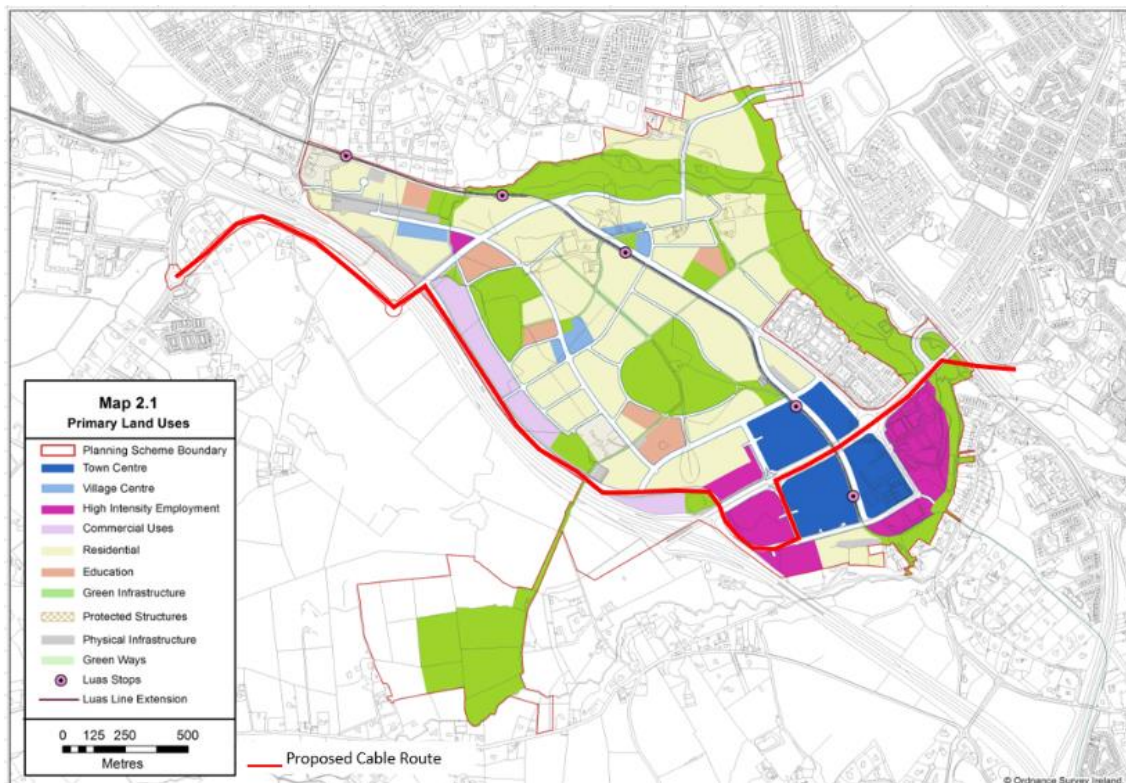
The Cherrywood Strategic Development Zone (SDZ) Planning Scheme 2014 (as amended), hereafter referred to as the Cherrywood SDZ, is bound by housing along Cherrywood Road, the N11 and Brennanstown Road (Figure 3.5) and is approximately 360 hectares in area. The Cherrywood SDZ has been identified as having potential to be a major new residential and employment settlement within the county.

The Cherrywood SDZ was prepared under sections 165-171 of the Planning and Development Act 2000, as amended, and is the relevant policy document for the area. Notwithstanding, where the Cherrywood SDZ does not address an aspect of a development proposal, the assessment of that aspect of the development is based on the policies of the County Development Plan in place at that time.

In the above regard, it is considered that policy objectives CA10 (Renewable Energy), CA11 (Onshore and Offshore Wind Energy and Wave Energy), EI18 (Energy Facilities), and EI19 (Overhead Cables), are of relevance to the proposed onshore elements of the Dublin Array project which will traverse (underground) the SDZ area – with the provisions of these already having been outlined and responded to, at section 3.6.1.1 of this Planning Report.

In addition to the above, it is noted that Section 7.3 of the Cherrywood SDZ (Strategic Infrastructure and Phasing) states (inter alia), “*Cherrywood must develop having regard to its regional context, given its scale; demand for supporting external infrastructure and services, such as public transport and water supply; and relationship to the national strategic road network. As such, “DLRCC will proactively engage with the relevant statutory agencies and infrastructure providers to secure timely delivery of such infrastructure. In addition, the SDZ notes under Section 4.3.1 (Electricity) that “Given the safety issues relating to the provision of electrical supply, space restrictions will have to be accommodated with other services in the available road space”.*

Figure 3.5: Cherrywood SDZ Planning Scheme



Source: Cherrywood SDZ Approved Amendment 7, page 11.

Project Response

A section of the proposed underground cable route will be located within the boundary of the Cherrywood SDZ, utilising the local road network and available cable ducts that will already have been installed within part of the road infrastructure provided within the SDZ area, as is noted as being acceptable and preferable with the Cherrywood SDZ, at Section 4.3.1.

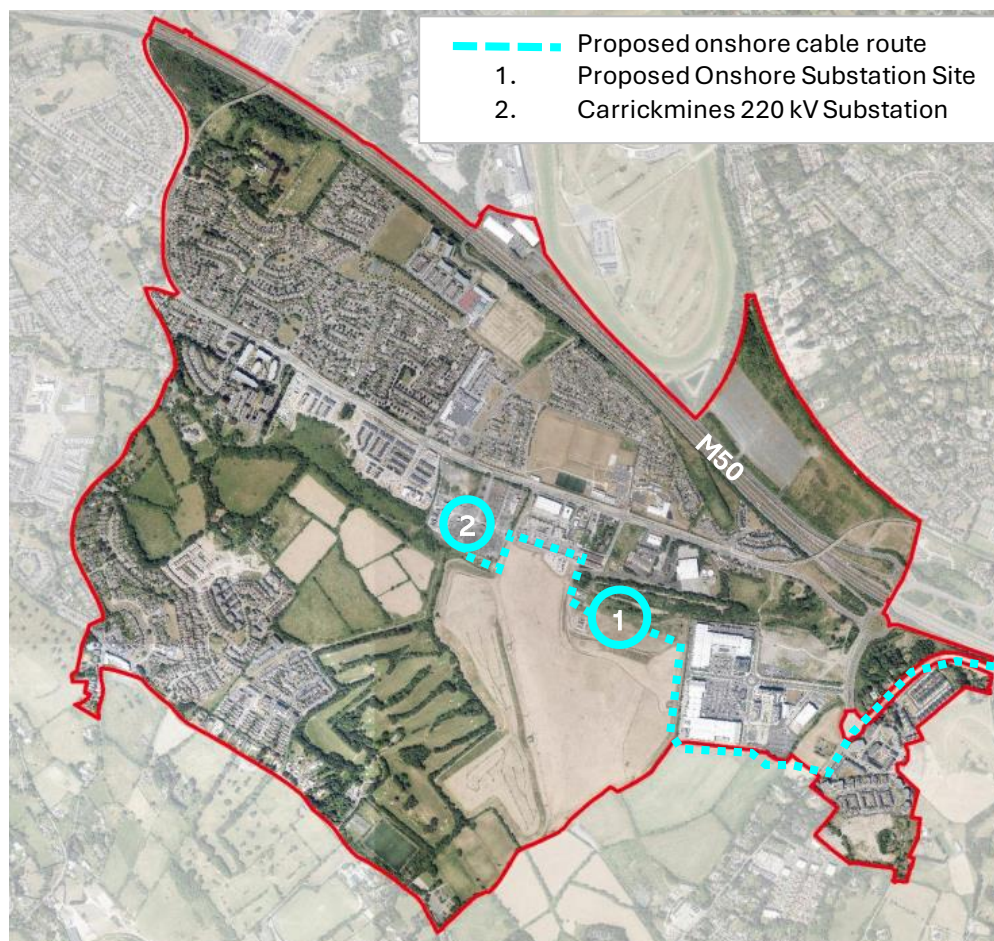
The section of the proposed underground transmission cables that will pass through the SDZ, will be installed underground within the local road network, and will not interact with any land use zoning or other proposed developments within the boundary of the SDZ (aside from temporary works) and will therefore be in compliance with the provisions of the adopted Cherrywood Strategic Development Zone (SDZ) Planning Scheme 2014 (as amended).

3.6.4 Ballyogan and Environs Local Area Plan

The Ballyogan and Environs Local Area Plan (BELAP), as illustrated in Figures 3.6, covers an area of approximately 420 hectares, and encompasses the areas of Glencairn, central and eastern Stepside, Ballyogan, Carrickmines Park (shopping centre), sections of Glenamuck and Kilgobbin Roads, the Ballogan landfill facility / Recycling Park and part of the Leopardstown Racecourse.

The proposed development is subject to the objectives of the Ballyogan and Environs Local Area Plan, as a portion of the proposed cable route and the onshore substation compound are located within its boundary.

Figure 3.6: Location of LAP relative to proposed development



Source: Ballyogan and Environs Local Area Plan 2019-2025, page 4

It is acknowledged within the BELAP that the Carrickmines 220 kV substation is a “significant feature of the Plan Area” and “this substation plays a significant role in the national electricity transmission network”. The BELAP also acknowledges that the area has a ‘legacy of land uses such as utility...’. The BELAP outlines several policies to guide development within the LAP area, with those considered to be of relevance to the proposed development, being identified below.

BELAP SI1 – Established and Planned Infrastructure and Services: To facilitate the continued use of established and planned infrastructure and services including those relating to transport, drainage, waste management and wastewater, drinking water.

BELAP SI7 – SuDS: To ensure that Sustainable Drainage Systems (SuDS) is applied to any development in the BELAP area and that site specific solutions to surface water drainage systems are developed which meet the requirements of the Water Framework Directive and associated River Basin Management Plan. SuDS measures may include green roofs, permeable paving, detention basins, water butts, infiltration etc.

BELAP SI9 – Groundwater: To ensure the protection of groundwater resources within the BELAP boundary and associated habitats and species in accordance with the EU Groundwater Directive. All new planning applications within the BELAP boundary shall have regard to the likely impacts the proposed development may have on groundwater resources.

BELAP SI10 – Flood Risk Assessment: To require all proposed developments to carry out a Site-Specific Flood Risk Assessment that shall demonstrate compliance with:

- The Planning System and Flood Risk Management, Guidelines for Planning Authorities (DEHLG / OPW, 2009), as may be revised and/or updated.
- The prevailing Dún Laoghaire-Rathdown County Development Plan.
- Any SSFRA shall not be required to carry out a Plan-Making Justification Test, given that this exercise was already carried out at County Development Plan-level. A review of this process was also undertaken as part of the preparation of this Local Area Plan (LAP).
- The SSFRA shall pay particular emphasis to site specific mitigation measures and any necessary management measures, as per Appendix B4 of the above 2009 National Guidelines.

BELAP SI12 – Services: To seek the undergrounding of all electricity, telephone and television cables wherever possible, in the interests of visual amenity.

Due to the presence of an archaeological monument (DU026-115: Linear earthwork) within the boundary of the proposed onshore substation, the following archaeology policies are of relevance:

BELAP A1 – Archaeological Assessment: To require Archaeological Impact Assessments, including an archaeological geophysical survey, with any Planning application for future redevelopment within lands containing, or adjoining, sites of archaeological interest, including recorded monuments.

BELAP A2 – Archaeological Features: To incorporate historic features and archaeological remains into the design and layout of new development areas so as to link new development with its historical context and enhance the sense of unique identity.

Policy BELAP EMP3 – Ballyogan South: To support the existing cluster of municipal, communication, light industrial and utility uses at Ballyogan South and to encourage comparable uses within this area.

Project Response

The proposed development, which comprises an offshore wind farm and chiefly underground onshore electrical system infrastructure to facilitate same, is entirely in accordance and aligned with the provisions of policies SI1 and SI12 and EMP3. In particular the location of the onshore substation is consistent with the objective of clustering utility services and infrastructure in Ballyogan South.

In relation to SI7, SI9 and SI10, the proposed surface water drainage system will incorporate SuDs measures and will meet the Council's requirements in this regard, except where an exemption is necessary due to the nature and constraints of the site and has been agreed, in advance, with Dún Laoghaire-Rathdown County Council. Furthermore, design relating to the proposed onshore elements of the proposed development has been progressed in consultation with DLRCC Water Services Department and SuDs has been incorporated into the project design for the onshore substation through the provision of underground attenuation storage tanks and green roofs for the proposed GIS Building. A Flood Risk Assessment has also been undertaken for the O&M Base, onshore substation and cable route and comprises part of the suite of documentation submitted to ABP as part of this planning application. Impacts and mitigation measures for surface water and groundwater have been described in Volume 5, Chapter 5.4 of the EIAR. No significant effects have been identified.

Having regard to policies BELAP A1 and A2, Volume 5, Chapter 5.8 of the EIAR assesses the potential impacts on the archaeological, architectural and cultural heritage associated with the

Dublin Array onshore infrastructure. With particular reference to the Ballyogan Linear Earthwork (SMR No. DU026-115) (The Pale Ditch), the onshore grid connection from the OSS to the existing Carrickmines substation crosses [the zone of notification] this in an area which was already heavily developed when the Ballyogan Landfill was operational. As such the magnitude of impact is considered to be Negligible. No significant effects have been identified.

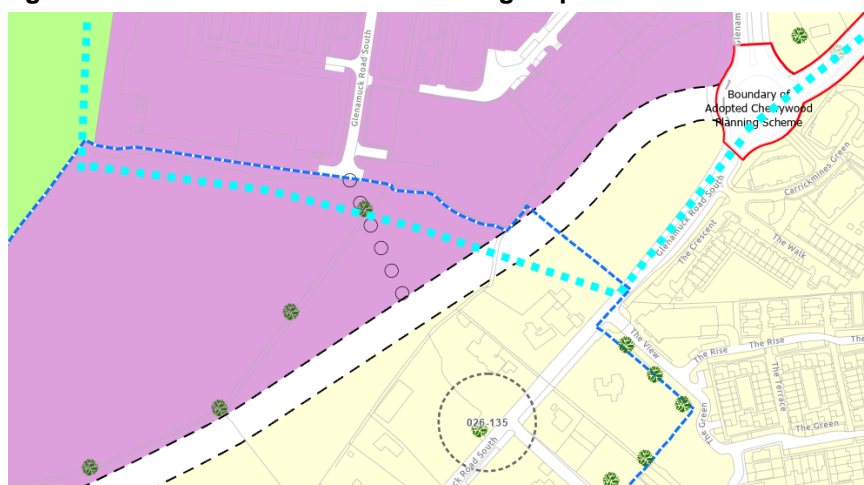
No significant impacts on cultural heritage receptors in the Plan have been identified.

3.6.4.1 Kiltiernan-Glenamuck Local Area Plan 2013-2023

The Kiltiernan-Glenamuck Local Area Plan 2013-2023 (LAP) has now expired. Notwithstanding, as indicated by Dún-Laoghaire-Rathdown County Council on their website, it will however, continue to be used as a guide for development in the area, until a new local area plan is in place for the area.

The LAP comprises the townland of Glenamuck North and portions of the townlands of Carrickmines Great, Glenamuck South, Glebe (Electoral Division - Glencullen), Kiltiernan Domain, Kiltiernan and Kingston (Electoral Division - Ballybrack). The LAP is located generally within the foothills of the Dublin Mountains and is directly adjacent to the Ballogan and Environs LAP, to the south. The proposed onshore electrical system cable route will be located within the northern edge of the LAP area, skirting the edge of zoned lands, where the zoning objectives within the DLRCDP (Zoning Maps 9 and 13), are indicated as being Objective A (To provide residential development and improve residential amenity while protecting the existing residential amenity) and Objective E (To provide for economic development and employment). A further objective indicated on the land use zoning map, is that of a 6-year Road Objective/ Traffic Management/ Active Travel Upgrade.

Figure 3.7: Extract from DLRCDP Zoning Map



Onshore Export Cable Route - - - - -

Objective A To provide residential development and improve residential amenity while protecting the existing residential amenities.

Objective E To provide for economic development and employment.

Boundary of Local Area Plan - - - - -

6 Year Road Objectives/Traffic Management/Active Travel Upgrades - - - - -

Source: Extract from DLRC web map

In the context of the proposed development which will be located within the LAP boundary, the following objectives are highlighted as being applicable:

LHC11 Ensure that all plans and projects in the LAP area which could, either individually or in combination with other plans and projects, have a significant effect on a Natura 2000 site (or sites) will be subject to Appropriate Assessment Screening.

LHC12 To ensure that a Natura Impact Statement (NIS) is produced if Appropriate Assessment (AA) screening has indicated likely significant effects on the integrity, defined by the structure and function, of any Natura 2000 sites.

EI13 It is an objective of the Council that high voltage transmission lines in the Plan area be undergrounded, both to improve the visual amenities of the area and to remove the constraints to development presented by the lines. To this end, the Council will work with EirGrid, ESB Networks and other relevant stakeholders. To encourage and/or facilitate the undergrounding of the Arklow-Carrickmines double circuit 220/110 kV transmission line and the Carrickmines-Fassoroe 110 kV transmission lines Nos. 1 and 2. Where undergrounding is not feasible, to sensitively incorporate any restriction corridors associated with said powerlines into the design of future developments.

Project Response

In alignment with LCH11 and 12, an Appropriate Assessment Screening and a subsequent Natura Impact Statement have been prepared in respect of the proposed development and are included in the application documentation.

In addition, and in accordance with EI13, the onshore export (transmission) cable which will traverse a section of the Kiltiernan-Glenamuck LAP, will be underground only. The infrastructure will be designed and installed to EirGrid specifications as it becomes part of the national electricity transmission network. All reasonable efforts have been made during the design process to ensure that the majority of the proposed route for the onshore export cables will be installed in public roads and public lands.

3.6.5 Wicklow County Development Plan 2022-2028

The proposed offshore export cable corridor occurs partially within the nearshore area of Wicklow County Council (coastal planning authority), and is therefore considered by this report. The Wicklow County Development Plan 2022 – 2028 (WCDP) provides a comprehensive strategy for the effective planning and sustainable development of the County throughout the plan period. Climate Action is a central overarching theme throughout the WCDP, and is one of three strategic principles guiding the WCDP, while also forming part of the Vision for the County to enable the *“transition to a low carbon, climate resilient and environmentally sustainable economy”*. In this regard, the WCDP acknowledges the imperative nature of renewable energy to meet climate action targets, stating *“it is therefore imperative that further progress is made in this area and that alternative renewable sources are further expanded and developed”* (p. 327).

The WCDP acknowledges the *“significant opportunity for Wicklow to take advantage of the Offshore Wind Sector and any associated spin offs such as onshore ‘operations and maintenance’ facilities and the creation of a ‘local offshore wind enterprise zones”* (p.436). As such, the maritime sector is listed as one of the key sectors for economic growth in the County.

The Wind Energy Strategy (WCDP - Appendix 5) has been limited to identifying favourable areas for onshore wind energy development. Notwithstanding, the WCDP states its support for offshore renewable energy within Chapter 16 – *Energy & Information Infrastructure*, and in accordance with national legislation, the WCDP reaffirms the Council's commitment to the roll out of renewable energy generation. Similarly, the support of transmission infrastructure is

supported, as it is acknowledged that “renewable energy sources can only be developed where they occur, it will also be necessary to put in place an electricity transmission and distribution network that can accommodate this change”.

In this respect, Table 3.2 below lists those county development plan policy objectives (CPO) which are considered applicable to the proposed offshore wind farm and its associated transmission infrastructure.

Table 3.2: Relevant Policies of Wicklow County Development Plan

Chapter	Policy Objective
9 - Economic Development	<p>CPO 9.21 To encourage and facilitate the ‘circular economy’ and the development of ‘green’ industries, including industries relating to renewable energy and energy-efficient technologies, material / waste recycling and conservation.</p> <p>CPO 9.22 To encourage and facilitate the development of offshore wind operation and maintenance bases which will create new opportunities for employment and skills development. Such development is particularly suited to the redevelopment of brownfield harbour lands.</p>
16 - Energy & Information Infrastructure	<p>CPO 16.01 To support and facilitate to the highest degree possible the development of alternative and renewable sources of energy, particularly in the generation of electricity / heating and for use as transport fuel.</p> <p>CPO 16.02 To support and facilitate the co-location of renewable energy developments and technologies to ensure the most efficient use of land identified as suitable for renewable energy generation.</p> <p>CPO 16.06 To facilitate and support the development of off-shore wind energy projects insofar as onshore facilities such as substations/connections to the grid may be required and the development of Operations and Maintenance (O&M) bases as may be required.</p> <p>CPO 16.18 To support the development and expansion of the electricity transmission and distribution grid, including the development of new lines, pylons and substations as required.</p> <p>CPO 16.19 To facilitate planned growth and transmission / distribution of a renewable energy focused electricity generation across the main demand centres.</p> <p>CPO 16.23 To support and facilitate the development of landing locations for off shore generated wind energy and for any cross channel power interconnectors.</p> <p>CPO 16.24 Proposals for the undergrounding of cables should demonstrate that environmental impacts including the following are minimised:</p> <ul style="list-style-type: none"> • Habitat loss as a result of removal of field boundaries and hedgerows by topsoil stripping; • Short to medium term impacts on the landscape where, for example, hedgerows are encountered; • Impacts on underground archaeology; • Impacts on soil structure and drainage; and • Impacts on surface waters as a result of sedimentation.
17 - Natural Heritage & Biodiversity	<p>CPO 17.1 To protect, sustainably manage and enhance the natural heritage, biodiversity, geological heritage, landscape and environment of County Wicklow in recognition of its importance for nature conservation and biodiversity and as a non-renewable resource.</p> <p>CPO 17.35 All development proposals shall have regard to the County landscape classification hierarchy in particular the key landscape features and characteristics identified in the Wicklow Landscape Assessment (set in Volume 3 of the 2016 County Development Plan) and the ‘Key Development Considerations’ set out for each landscape area set out in Section 5 of the Wicklow Landscape Assessment.</p> <p>CPO 17.36 Any application for permission in the AONB which may have the potential to significantly adversely impact the landscape area shall be accompanied by a Landscape / Visual Impact Assessment, which shall include, inter alia, an evaluation of visibility and prominence of the proposed development in its immediate environs and in the wider landscape, a series of photos or photomontages of the site / development from clearly identified vantage points, an evaluation of impacts on any listed views / prospects and an assessment of vegetation / land cover type in the area (with particular regard to commercial forestry plantations which may be felled thus altering character / visibility). The Assessment shall demonstrate that landscape impacts have been anticipated and avoided to a level consistent with the sensitivity of the landscape and the nature of the designation.</p> <p>CPO17.37: To resist development that would significantly or unnecessarily alter the natural landscape and topography, including land infilling / reclamation projects or projects involving</p>

Chapter	Policy Objective
	significant landscape remodelling, unless it can be demonstrated that the development would enhance the landscape and / or not give rise to adverse impacts. CPO17.38: To protect listed views and prospects from development that would either obstruct the view / prospect from the identified vantage point or form an obtrusive or incongruous feature in that view / prospect. Due regard will be paid in assessing development applications to the span and scope of the view / prospect and the location of the development within that view / prospect.
19 - Marine Spatial Planning & Coastal Zone Management	CPO 19.3 To support the development of the Marine Economy / Blue Economy sector, particularly in the renewable energy, shipping and fishing / aquaculture sectors. To support the work of the Wicklow Maritime Business Development Group and the implementation of strategies and projects related to enhancing the marine economy.' CPO 19.8 To protect the character and visual potential of the coast and conserve the character and quality of seascapes.'

3.6.5.1 Wicklow Local Economic and Community Plan 2023-2029

The Wicklow Local Economic and Community Plan 2023-2029 (WLECP) is a six-year plan which seeks to promote and support economic development and local and community development. In the context of the proposed development, the WLECP recognises the need to prepare a maritime strategy for County Wicklow as a means to promote the County's marine assets in a sustainable manner. The WLECP is aimed at harnessing the potential of the County's marine assets, either built or natural and has included a climate action objective and outcome related to renewable energy:

Climate Action Objective 1.5 Support the development of renewable energy opportunities.

Outcome A county that explores all opportunities to lead in the development and provision of renewable energy, especially offshore wind energy.

Project Response

The proposed development, includes a section of the offshore export cable corridor located within Wicklow's nearshore, is supported in principle by the provisions of the Wicklow County Development Plan, through the Plan's alignment with the National Planning Framework which aims to increase offshore renewable energy development. In this regard, it is considered that the proposed Dublin Array development will assist in contributing to the realisation of the WCDP Vision of a low carbon society, as it will ultimately connect to the national electricity grid (albeit not within county Wicklow). This will benefit society and the local economy in the county. It is similarly supported by Climate Action Objective 1.5 of the WLECP.

The WDCP is supportive of the development of offshore renewable energy projects and associated transmission infrastructure through several policy themes, including economic policy, specifically CPO9.21, 9.22 and 19.3. The proposed development is recognised as a development type which has potential for significant growth, and thus its economic benefits can be reaped both directly and indirectly. The proposed development is also directly supported by specific energy policies, namely CPO 16.01, 16.06 and 16.18.

A Seascape, Landscape and Visual Impact Assessment (SLVIA) has been prepared for the proposed development as part of the EIAR submitted with the planning application (Volume 3, Chapter 15). The landscape designations of the Wicklow Landscape Assessment have thus been considered in the SLVIA, in accordance with CPO 17.35, 17.36, 17.37 and 17.38. In relation to CPO17.37, it should be noted that this CPO refers to landscape and not seascape, and is therefore not relevant to the proposed maritime (offshore/ seascape) elements of the proposed development. The SLVIA concluded that some significant effects on landscape character along the coast will occur from the turbine array and offshore substation platform. Notwithstanding, the SLVIA also concludes that whilst an effect may be significant, it does not connote an impact would be unacceptable, nor should be necessarily regarded as an 'undue consequence'. Additionally, due to the 'span and scope' of the expansive seascape context in

which the proposed development will be located, it would not obstruct the view / prospect from the identified vantage point, or form an obtrusive or incongruous feature in that view / prospect. Furthermore, it would not dominate the wider seascape and landscape character.

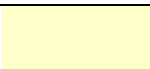
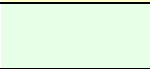

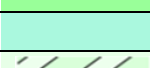
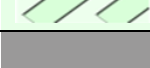

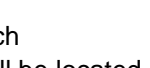
The proposed development has therefore been assessed as being capable of being accommodated into the existing landscape/seascape. In this regard, and with reference to the wider benefits of the project and the support within the WCDP, the proposed development is considered to be in accordance with the Development Plan and CPOs 17.35, 17.36, 17.38 and 19.8. In relation to the wider benefits, in particular, the following are of note (as stated within the response to Seascape and Landscape Policy 1 (Appendix C, and section 4.2 of this report):

- The proposed development is one of strategic and national importance which will have hugely beneficial impacts for the country in terms of energy security and supply.
- The proposed development will support a significant share of the offshore energy targets for 2030.
- The proposed development will contribute substantially to a reduction of the carbon budget for the electricity sector for 2026-2030.

3.7 Land Use Zoning

The Dún Laoghaire Rathdown County Development Plan 2022-2028 (DRCDP) sets out a range of land use zoning objectives to promote orderly development within the area. The DRCDP provides for a total of 18 zoning objectives. Given the linear nature of the proposed development, it will be situated within a number of different zoning objectives. The overall context relating to these, including the individual relevant specific zoning objectives, are identified in Table 3.3 below. The land use zoning relative to the application site boundary is illustrated in Appendix B of this report. The proposed onshore electrical system infrastructure to facilitate and support Dublin Array will be accommodated within/ alongside lands with the following zoning objectives.

Table 3.3: Land Use Zoning objectives relevant to proposed development

Zoning Objective	Zoning Objective Description	Map shading
A	To provide residential development and improve residential amenity while protecting the existing residential amenities	
B	To protect and improve rural amenity and to provide for the development of agriculture	
E	To provide for economic development and employment	
F	To preserve and provide for open space with ancillary active recreational amenities	
G	To protect and improve high amenity areas	
GB	To protect and enhance the open nature of lands between urban areas	
SNI	To protect, improve and encourage the provision of sustainable neighbourhood infrastructure	

Source: Dún Laoghaire-Rathdown County Development Plan 2022-2028, Land use zoning maps (Map 1- 14)

With regard to the DLRCDP land use zoning objectives indicated above, within which associated lands the proposed onshore electrical system infrastructure elements will be located, the use of 'Public Service' is indicated by the DLRCDP, as being either a 'Permissible use' or a use which is 'Open to Consideration'. The definition of 'Public Service' is also provided within the Development Plan as comprising:

A building or part thereof, a roadway or land used for the provision of 'Public Services'. 'Public Services' include all service installations necessarily required by electricity, gas, telephone,

radio, telecommunications, television, data transmission, water, drainage and other statutory undertakers; it includes public lavatories, public telephone boxes, bus shelters, bring centres, green waste composting facilities, etc. 'Public Services' do not include commercial data centres.

The land use zoning provisions, as they relate to the separate components of the onshore electrical system infrastructure, i.e. landfall, onshore cable route, onshore substation, and the O&M Base, are discussed separately in the sections which follow hereunder.

3.7.1 Landfall at Shanganagh Cliffs

The landfall at Shanganagh Cliffs will be the point where the two offshore submarine export cable circuits meet the shoreline and connect to the two onshore export cable circuits. The land use zoning pertinent to this component of the proposed development, including the temporary construction compound (from above the high-water mark), is Objective F – which seeks “to preserve and provide for open space with ancillary active recreational amenities”.

Project Response

The proposed development would be located underground and would not impede the open space use of the area, on foot of the works required to construct and implement the proposed development being undertaken. As such the proposed will not conflict with the zoning objective F, insofar as Public Service uses are indicated as being ‘Open to Consideration’ within this zoning objective.

In addition to the above and in relation to the temporary construction compound (TCC) which will also be located in this area, the TCC will be securely fenced to safeguard the site and public safety. It will be necessary to maintain the construction compound for up to three years which is the expected duration of the construction of the onshore electrical system infrastructure, following which, the TCC area will be reinstated. Notwithstanding the fact that the TCC will be securely fenced, alternative access for pedestrians and cyclists will be provided within the area, and as such, full access will be maintained to all public amenities currently located at Shanganagh Cliffs throughout the period of works.

3.7.2 Export Cable Route

As indicated earlier, while the cable route utilises existing roads/ the verge of existing roads, as much as possible, it is noted that roads are unzoned within the DRCDP. The cable route will also traverse/ be located within a number of different land use zoning objectives. Along the entirety of the onshore export cable corridor, joint bays will also be required at various intervals to connect sections of circuits.

It is proposed that the majority of the cable will be laid/ constructed in below ground trenches and that trenchless (below ground) technology will be used to cross watercourses, the railway line and major road networks including the N11, M50 and Glenamuck District Distributor Road.

Project Response

The proposed trenching process (including trenchless techniques) to be employed during construction, and the reinstatement of all lands above ground to their original state, as part of the development works, will ensure that there will be minimal impact on existing land uses and zoning objectives above ground level. Further detail in respect of the construction methodology is included within the Construction Environmental Management Plan (CEMP) provided as part of the planning application documentation, and the provision and location of temporary construction compounds (which will be reinstated), are also indicated on the submitted Planning drawings.

Thus, notwithstanding the varied zoning objectives within which the onshore cable will be located, it will be situated entirely underground. As such, it will not prohibit the continued existing/ future functional use or development of such lands, or their associated zoning objectives, aside from regard being required to be had to the alignment and presence of the cable, and for this to be taken into account in the design stages of future developments within proximity of same.

3.7.3 Onshore Substation

The site of the proposed Onshore Substation is located entirely within Land Use Zoning Objective E “To provide for economic development and employment”.

Project Response

The DLRCDP indicates that outlined above, land uses classed under 'Public Services' are permissible and open to consideration under this zoning objective, and the proposed onshore substation is considered to be compliant with the zoning objective. The proposed onshore substation is considered to be classed as a Public Services, and therefore 'Open to Consideration' within Zoning Objective E.

3.7.4 O&M Base

The proposed O&M Base is located entirely within zoning objective “W” – “To provide for waterfront development and harbour related uses”. Within Table 13.1.14 (Chapter 13 of the DLRCDP), the land use classes which are considered to be ‘permitted in principle’ and ‘open for consideration’ are listed for Objective W. Those of relevance to the proposed development are highlighted in bold in the use classes listed below.

- **Permitted in Principle:** Carpark, Community Facility, Cultural Use, Industry- Light, Offices less than 200 sq.m., Marine Leisure Facility, Open Space, Public Services, Restaurant, Transport Depot.
- **Open for Consideration:** Advertisements and Advertising Structures, Aparthotel, Assisted Living Accommodation, Craft Centre/ Craft Shop, Childcare Service, Civic Use, Doctor/Dentist, Education, Enterprise Centre, Hotel/Motel, Office Based Industry, Offices, Off-License, Place of Public Worship, Public House, Sports Facility, Residential, Residential Institution, Science and Technology Based Industry, Shop-Specialist, Shop Neighbourhood, Tea Room/Café, Travellers Accommodation.

Stated within Table 13.1.14 of the CDP in relation to Objective W is the following:

“Note 1: An objective of this Plan is to protect the harbour/ marine entity of Dún Laoghaire Harbour by facilitating harbour-related uses, but not to confine permitted uses in the harbour to a degree that exclusively attracts those with an interest in active maritime recreation. Any development proposal should seek to ensure public accessibility to the harbour and shorefront.

Note 2: Any development in the coastal area should have regard to the findings of the Dún Laoghaire- Rathdown County Council Coastal Defence Strategy Study, (2010).”

Note 1 is applicable to the following use classes – offices, Science and Technology Based Industry and enterprise centre class uses, it is also noted that these are open for consideration in Dún Laoghaire Harbour area only.

The proposed O&M Base will largely comprise of office space (with a gross floor space greater than 200m sq), stores, workshop, plant room, control room, server room, welfare facilities and canteen. It is therefore considered that several use classes are appropriate to describe the activities and use of the O&M Base. These use classes and their applicability are discussed further below.

The definition of **Light Industry** is provided in Section 13.2 Definition of Use Classes and is stated as – “The use of a building or part thereof or land for industry (not being a special industry) in which the processes carried on or the machinery installed are such as could be carried on or installed in any residential area without detriment to the amenity of that area by reason of noise, vibration, smell, fumes, smoke, soot, ash, dust or grit and may include a service garage but not a service station.”

The proposed O&M Base is considered to fall into this definition of Light Industry, in that it will include for a maintenance workshop that will service the proposed Dublin Array development. It will be used for both storage of spare parts and small ancillary tools. Any industrial or maintenance works that will occur within the O&M Base will be confined to minor works connected to general maintenance of Dublin Array. In this regard, any works would be considered to fall within the scope of the definition for light industry.

The proposed development will require vehicles to be parked within the O&M Base as these will be used for maintenance as and when required, is considered that the definition of a **Transport Depot** is also applicable to the O&M Base, the definition is stated as – “use of a building or land as a depot associated with the operation of transport business to include parking and servicing of vehicles, particularly HGVs”. The O&M Base includes the provision of space and facilities for craft (boats) and equipment required to transport personnel and equipment/ tools to the turbine Array and Offshore substation. The O&M Base will include a storage and loading area for small and medium spare parts for the wind turbines and small ancillary equipment such as electrical components (switches, sensors, fuses, circuit breakers) and mechanical components (motors, bearings, filters and nuts & bolts) as well as consumables. It will also provide warehouse space, berthing facilities for maintenance vessels associated with the ongoing operation and maintenance of the Dublin Array Offshore Wind Farm and an operation control centre and floating pontoon.

As stated, the majority of the floor space of the O&M Base will be dedicated to office and meeting space; the definition of **Office-Based Industry** is also considered to be a relevant use class to describe the activities and use of the O&M Base, as this is defined as - “*office-based activities concerned with the output of a specified product or service, including: data processing, software development, information technology, technical consultancy, commercial laboratories/healthcare, research and development, media recording and general media associated uses, publishing, telemarketing. Other related uses not specified above may be included in the future at the discretion of the Planning Authority*”. In this respect, the proposed O&M base is considered to align with this land use, as operational staff working from the O&M building will encompass various disciplines in order to deliver a high performance asset for the Applicant. These include site management, engineering, supply chain management, control, monitoring/data analytics, technicians and warehouse personnel to ensure safe and efficient operations and maintenance of all the generation equipment that make up the Dublin Array offshore wind farm.

The proposed O&M Base is a building required for the continued operation and maintenance of offshore electricity generation and transmission infrastructure, and in addition will contain an ESB substation and associated underground cabling to facilitate a new electrical connection. As such it is deemed to fall under the definition of **Public Services**, which is stated as – “*A building or part thereof, a roadway or land used for the provision of ‘Public Services’. ‘Public Services’ include all service installations necessarily required by electricity, gas, telephone, radio, telecommunications, television, data transmission, water, drainage and other statutory undertakers; it includes public lavatories, public telephone boxes, bus shelters, bring centres, green waste composting facilities, etc. ‘Public Services’ do not include commercial data centres*”.

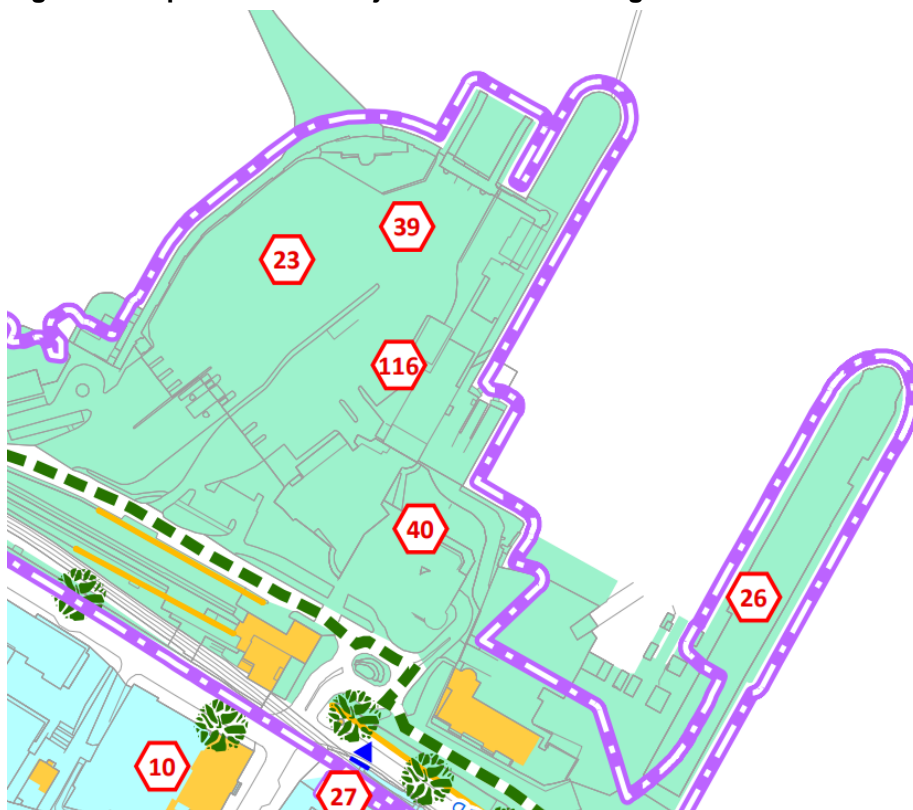
Project Response

The proposed O&M building will comprise of dynamic functions; as such several activities/ uses are considered to be applicable to the O&M Base, with these chiefly falling within the 'permitted in principle' category (transport depot, public services, industry-light). The only use classes applicable to the O&M Base that falls within the 'open for consideration' category, is Office Based Industry. In this regard, it is considered that the use class of Office Based Industry relates to the existing adjacent existing Harbour Police building – with this building being similar in nature to the proposed O&M Base. As such, the proposed O&M Base is aligned with existing uses in the harbour area and the objectives of zoning objective W, as it will provide harbour related uses whilst also providing employment, in accordance with the provisions of the Interim Urban Framework Plan for Dún Laoghaire. The proposed O&M development is a compatible development at this location and does not conflict with any of the measures or actions proposed under the *Dún Laoghaire- Rathdown County Council Coastal Defence Strategy Study, (2010).*"

3.7.5 Specific Local Objectives

There are several specific local objectives annotated within the DLRCDP for Dún Laoghaire harbour as illustrated in Figure 3.8.

Figure 3.8: Specific Local Objectives for Dún Laoghaire Harbour



Source: Dún Laoghaire-Rathdown Development Plan 2022-2028, Zoning Map 3

Specific Local Objectives for St. Michael's Wharf and Pier

SLO 23 To facilitate the continued development of the Harbour, ensuring at all times that the historic significance and natural beauty of this public amenity is protected, in accordance with any specific policies contained within the forthcoming Dún Laoghaire and Environs Local Area Plan.

SLO 39 In accordance with National Policy, the Council shall, within the relevant planning frameworks, formulate and implement, where appropriate and applicable, a plan for the future development of Dún Laoghaire Harbour and its curtilage.

SLO 40 To support and encourage the development of a National Watersports Centre Campus to facilitate training and participation in a varied range of water sports and activities, accessible for all ages and abilities and socio-economic status, to provide a focus for national and international watersports events, subject to the finding of the future feasibility study to be carried out using funding secured under the Large Scale Sports Infrastructure Fund (LSSIF). Site appraisal and analysis of the Harbour environs to identify the optimum location(s) for such a centre to be expedited as an integral part of the forthcoming Dún Laoghaire and Environs Local Area Plan.

SLO 116 To provide a cultural and heritage centre in the environs of the Dún Laoghaire Harbour that focusses on the unique history of emigration from the Carlisle Pier, the construction of the harbour, the role of the harbour in the development of amateur watersports, and the celebration of the first suburban rail line and mail boat service. Any proposals shall be subject to Appropriate Assessment Screening in accordance with the requirements of the EU Habitats Directive and shall ensure the protection and preservation of all designated SACs, SPAs, and pNHA(s) in Dublin Bay and the surrounding area.

Project Response

The proposed development will not hinder any development listed in the specific objectives within Dún Laoghaire Harbour. It is noted that under SLO 39 DLRCC are progressing with preparing a masterplan for Dún Laoghaire Harbour, with St. Michael's Wharf and Pier identified as a key area of opportunity for future development. This masterplan is still at issue identification stage and no draft masterplan was available at the time of writing. The proposed O&M Base will provide continued development of the harbour as is stated within SLO23, while also having regard to the Interim Urban Framework Plan for Dún Laoghaire, as addressed in Section 3.6.2.1 above. The design of the proposed O&M Base is inspired by the shipping and maritime heritage of the area, embracing the historical significance of the harbour whilst being in keeping with the existing infrastructure, aligning with SLO 23, as it will embrace the current and historic uses of the area. The development of the National Watersports Centre under SLO 40 is not relevant to the proposed development and is a project which will ultimately be pursued by Government. Similarly SLO 116 is not applicable as the proposed development relates to ORE; albeit that such development would not preclude the future provision of a cultural and heritage centre in the environs of the harbour. In conclusion, Dublin Array will not inhibit the fulfilment of either of the above-identified specific objectives for the harbour. The O&M Base is predominantly located at St. Michael's Pier, with access to the site utilising the outer westward edges of existing carpark area. It will also, therefore, not restrict areas of potential development to the south of the O&M Base which are identified under SLO 40 and 116.

4 National Marine Planning Framework – Statement of Consistency

4.1 Introduction

The National Marine Planning Framework (NMPF) was published on 30 June 2021, in line with the requirements of EU Directive 2014/89/EU [establishing a framework for maritime spatial planning]. The NMPF contains objectives and policies for all marine-based human activities within the maritime area (extending from the mean high water mark at the coast, extending seaward to in excess of 200 nautical miles, in parts), which are deemed necessary to support the effective management of marine activities and sustainable use of marine resources to 2040.

The NMPF notes the spatial extent of Ireland's marine territory and accordingly highlights that *"Our marine environment is a national asset that yields multiple commercial and non-commercial benefits from sectors such as seafood, tourism, recreation, renewable energy, cultural heritage, and biodiversity."* The sustainable development of Ireland's maritime area, through a forward planning framework as set out within the NMPF, is therefore vital to the social and economic well-being of the State.

As stated within the NMPF, *"all applications for activity or development in Ireland's maritime area, including those made within the new development management system being provided for under the Maritime Area Planning Bill 2021, will be considered in terms of their consistency with the objectives of the plan" (i.e. the NMPF).* The NMPF is thus a key statutory plan against which the proposed development will be scrutinised, and accordingly, it will be a key determinant in the granting of planning consent for the proposed development.

4.2 Consistency with NMPF Policies

The NMPF has 32 overarching marine planning policies (OMPPs) which are grouped according to environmental, economic and social objectives. OMPPs are applicable to *"all proposals capable of having impacts in the maritime area"* and are supplemented with sectoral marine planning policies (SMPPs). The SMPPs apply to specific classes of activities and the NMPF arranges these into 16 general sectors, including offshore renewable energy.

There are a total of 92 policies (both OMPPs and SMPPs) within the NMPF. All OMPPs and applicable SMPPs are required to be considered and addressed by the proposed development, which includes addressing other SMPPs outside of the subject development/project type, to ensure appropriate and co-ordinated management of interactions between different industries, activities and users. There are 16 SMPPs which are not applicable to the proposed development, as they do not relate to ORE development.

Within Chapter 13 *Energy - Offshore Renewable*, it is an objective of the NMPF to support the development of offshore renewable energy in the State. The main driver for this support, is to ensure that European and national targets to reduce greenhouse gas emissions, are met.

The objectives of the NMPF in relation to offshore energy are:

- Support the development of ORE in Ireland, as a driver to significantly reduce greenhouse gas emissions and accelerate the move to cleaner energy, in line with national and EU policy.

- Increase the sustainable ORE use of our extensive marine resource, in an efficient and co-ordinated manner, identifying, where possible, potential for synergies and opportunities for multi-use of our shared maritime area.
- Support Ireland's decarbonisation journey through increased use of ORE while delivering significant and sustained benefits, import substitution, fiscal return, national and local economic development and technology learning.
- Support the strategic growth of the ORE industry recognising the potential to derive benefits particularly for Ireland's coastal communities.
- Provide enhanced security of energy supply for Ireland in the short and medium term, in accordance with the Climate Action Plan.
- Develop a robust, effective transparent consenting process to ensure appropriate environmental protections are built-in, while enabling sustainable ORE developments to progress.
- Ensure good regulatory practices in ORE installation and generation, including decommissioning of existing facilities, at end of life, according to international best practice.

Support for the strategic growth of the ORE industry is recognised in relation to the opportunities presented in sustaining economy benefits, energy security, technological learning and supporting local coastal communities.

Similarly, within Chapter 13 there is acknowledgement of land-based coastal infrastructure and ports which support ORE development. It is thus an objective of the NMPF to prioritise such infrastructure within plans and policies.

The assessment and consideration of the policies applicable to the proposed development is contained in Appendix C of this report. The assessment demonstrates that the proposed development supports the objectives relating to offshore renewable energy, through its assistance and support in decarbonising the electricity sector and helping to achieve associated targets within the Climate Action Plan. The proposed development supports the growth of the ORE industry, and alongside existing ORE and proposed ORE projects, it will assist in establishing an indigenous supply chain, whilst local communities will benefit from the project community benefit fund during the operational lifetime of the Dublin Array wind farm.

Overall, there are no significant adverse impacts on the marine environment, marine economy, nor the enjoyment of the marine environment, with the exception of seascape and landscape impacts of the offshore works. Notwithstanding, as stated within the response to Seascape and Landscape Policy 1 (refer to Appendix C of this report), the proposed development could be accommodated within views experienced by visual receptor groups, residents and visitors to settlements and receptors of key transport routes. Overall, the perception of the surrounding environment by visual receptors would remain fundamentally unchanged. Ultimately, the proposed development is one of strategic and national importance which will have hugely beneficial impacts for the country. It will support a significant share of the offshore energy targets for 2030, as well as contribute substantially to a reduction of the carbon budget for the electricity sector for 2026-2030.

5 Planning History

5.1 Introduction

A planning history search of the proposed development and adjoining areas was undertaken through a search of Section 34 applications to Dún Laoghaire-Rathdown County Council, Part 8 applications by the local authority, and direct applications to An Bord Pleanála, including large-scale residential development, strategic infrastructure development and local authority own development. Additionally, any relevant foreshore applications and marine licensing/consenting as it relates to development on the seaward side of the high water mark is similarly provided.

5.2 Planning History of the Application Site

5.2.1 Landfall point at Shanganagh Cliffs

There are no extant or historical planning applications relating to the landfall site. The adjacent Shanganagh-Bray Wastewater Treatment Plant has been in place, in some form or another at its current location, since the 1830/40s as shown in six-inch historical ordnance survey map edition (annotated as sewage tanks). On 15 August 1979 a foreshore licence was obtained (by Dublin County Council from the Minister of Transport) for a long sea outfall, in advance of upgrades to the treatment plant in 1983, to cater for population growth in the agglomeration. The 1.6km long, sea outfall pipeline, partially follows the subject planning application boundary (as confirmed by LiDAR survey). Similarly, in advance of the 1983 upgrade works, a foreshore licence was obtained on 23 September 1982, for a new storm water outfall. This storm water outfall pipe traverses through the subject application boundary.

Project Response

The sea outfall and storm water outfall occur within the application boundary for the proposed development; however, the routing of the export cables will avoid any Uisce Éireann assets related to the Shanganagh-Bray Wastewater Treatment Plant.

5.2.2 Cable Route

The majority of the onshore export cable route is proposed largely within existing public road corridors. Those sections of the cable route which are off-road will occur within areas of amenity grassland in suburban areas, or within an area of agricultural land which occurs both to the west and east of the M50. The proposed cable route passes through areas which form part of Cherrywood Strategic Development Zone (SDZ), as such, the cable route traverses areas which have been subject to planning applications, and their amendment applications for development, in accordance with the Cherrywood SDZ Planning Scheme, as amended.

Those relevant planning applications include the following;

- **PC/CSDZ/013/2022** Cherrywood Natural Greenspace Green Route (common infrastructure project) extending approximately 5.0km from Brides Glen to Brennanstown comprising pedestrian and cycle connections to the N11, Wyattville Link Road, Cherrywood Avenue and Brides Glen/Cherrywood Road. Part 8 application approved June 2022.
- **DZ21A/1017** Provision of roads (Beckett Road) totalling a length of 1.6km and associated infrastructure within Cherrywood Strategic Development Zone (this application relates directly to Amendment 7 of the Cherrywood Planning Scheme – Realignment of Beckett Road). This permission was granted on 11 November 2022.

- **DZ17A/0172/E** Permission for the continued use of two existing 110 kV overhead lines for an additional five years beyond the ten years permitted under Register Reference D06A/1364. The two existing lines comprise the 0.79km Carrickmines-Cherrywood-Deansgrange 110 kV line, which extends from a lattice steel mast in the townland of Laughanstown to the Cherrywood substation also located in the townland of Laughanstown. Decision to grant dated 12 April 2022.
- **DZ19A/0874** - Permission for development on lands (c. 19.74ha). The proposed development will consist of Revised proposals for the previously permitted pavilion building within Ticknick Park (a public park under construction under Reg. Ref. DZ16A/0570). Spilt decision, date of final grant 14 January 2020.
- **DZ16A/0597** - Permission for the construction of gas infrastructure. The proposed development will consist of the construction of an above ground installation (AGI) facility, for the operation and maintenance of gas pipeline. Final grant dated 05 October 2016.
- **ABP-303945-19** Glenamuck District Roads Scheme which will connect the existing R117 Enniskerry Road with the Glenamuck Road and new link distributor road which will connect to the Ballycorus Road and the R117 Enniskerry Road (alternative north-south route). Approved with conditions 18 December 2019.
- **PC/15/06 (Part 8)** New storage /utility building with administration office and utility yards, on lands adjacent to the Ballyogan Business Park on the Ballyogan Road. This Part 8 was approved in 2006 and modified by PC/11/07 in 2007.

It is also noted that the onshore export cable route crosses the route of a foul rising main development by Uisce Éireann. The rising main works were completed under Irish Water Compulsory Purchase (Woodbrook Shanganagh Network Extension) Order, 2022. The subject underground onshore export cable route will cross beneath the route of the rising main where it occurs on approach to the entrance of Shanganagh-Bray Wastewater Treatment Plant. No objections were received to this Compulsory Purchase Order (CPO) and thus the CPO was confirmed on 09 August 2022. This development was carried out under Uisce Éireann's exempted development provisions.

Additionally, it is noted that the green amenity areas between Shanganagh Cliffs estate and the cliffs along the coastline are currently subject to masterplanning by DLRCC. This seeks to maximise recreational uses in accordance with its land use zoning (Objective F – which seeks “to preserve and provide for open space with ancillary active recreational amenities”) and includes for new sports pavilion/public toilets, new removal of existing paths, upgrading of existing paths and additional paths with additional tree planting in specific areas. This masterplan is currently at draft stage at the time of writing. The underground cable route will not impact any future design proposal under the masterplan or their subsequent execution.

Project Response

The proposed development is specifically proposed to be routed within and through existing road corridors within residential estates and neighbourhoods, as well as within regional and national roads (R118 and R842) and under the N11 and M50. A section of the cable route is also sited along the proposed Beckett Road within Cherrywood Strategic Development Zone. The routing of the onshore cables will ensure that existing 'utility type' land use provision is shared and land sterilisation will be limited. This leads to limited overlapping with development (including future development in private lands), except for other utility infrastructure which may be provided in the same public roads.

5.2.3 Onshore Substation

The site of the proposed onshore substation is within lands which form part of the Ballyogan landfill facility. Ballyogan landfill facility became operational circa 1975. Operations required the landfill to increase in size in 1980, and again in 1985 to an area of 50 hectares.

There is one historical planning application (lodged in 1994) relating to the Ballyogan landfill facility, namely, application reference D94A/0493, which was for the development of the “*gas generating compound with enclosed palisade fence containing 2 no. generators, control container, valve chamber and ESB substation*”. The final grant was dated 03 November 1994. This compound is still in active use.

In 2010, the capping of the landfill was completed in accordance with the restoration and closure plan under its existing waste licence (Reg No. W0015-001), which included nine hectares of the landfill site being developed into the Ballyogan Recycling Park. The former landfill site continues to be licensed by the Environmental Protection Agency, as gas and leachate collection and environmental monitoring are still required to be undertaken.

The former landfill site (adjacent to but not including the site of the proposed onshore substation) is intended to become a public park in the future— Jamestown Park, under ambitions and land use zoning made by Dún Laoghaire-Rathdown Council (Specific Local Objective 78, DLRCDP).

The existing landfill gas generation compound is located immediately abutting the application boundary, which wraps around the compound, however, the compound is not included within the application boundary.

Project Response

The proposed location of the onshore substation is situated adjacent to the existing public utility infrastructure of Ballyogan recycling centre and Carrickmines 220 kV substation (350m to the northwest). Facilitating the siting of the development of an onshore substation as close as possible to the confirmed grid connection point at Carrickmines 220 kV substation, has resulted in its siting within the Ballyogan landfill facility, and adjacent to utility infrastructure required for the management of the landfill site.

Notwithstanding, the proposed onshore substation will not interfere with the continued landfill restoration, landfill environmental monitoring activities or landfill gas management, as required by the extant waste licence.

In addition, its location within these lands is consistent with the existing and planned uses, as public utility infrastructure and will not be built on lands intended for the development of the future Jamestown Park.

5.2.4 O&M Base

In relation to ownership and related development, at and surrounding St. Michael's Pier, the location of the proposed O&M base, a review of available online resources was undertaken, and the following is noted:

Development History at St. Michael's Pier and Wharf

- 1968: St. Michael's Pier, associated ramps and the original ferry terminal constructed by the Commissioners of Public Works.
- 1990: Dún Laoghaire Harbour Act 1990, transfer of all property and rights from the Commissioners of Public Works to the Minister for the Marine.

- 1994: An application was made by the Minister for the Marine (ABP PL06D.093192²) for an extension and refurbishment of the existing Ferry Terminal building. This incorporated 'reclamation from the sea of approx. 1.5 hectares to the west of the existing pier; Renewal and extension of traffic marshalling areas to a total of 3.2 hectares; Refurbishment of the existing two storey St. Michaels terminal building...'. Permission was granted on 20 July 1994.
- 1996: the Minister for the Marine completed the enlargement and improvement of the 1968 ferry terminal and the Harbours Act, 1996 enable the Minister for the Marine to transfer certain harbours and property to local authorities, thus Dún Laoghaire Harbour Company a state commercial company was established under the Harbours Act 1996.
- 2012: Planning application granted to Dún Laoghaire Harbour Company for use of the existing hard standing/car park (18,100 sq.m in area) for use during non-ferry operational times for events at which the audience comprises less than 5,000 people including concerts, markets, fairs, open air cinema, roller skating rink, ice skating rink, cultural, sporting and recreational events and event car parking. Permission was granted 16 August 2012 (case ref: D12A/0192).
- 2015: Harbours Act 2015, gave statutory effect for the provision of the dissolution of certain harbour companies, including Dún Laoghaire Harbour Company, and their transfer by Ministerial Order to the relevant local authority.
- 2015: Planning application by Dún Laoghaire Harbour Company for eight-year permission for the construction of a cruise berth facility comprising a new quay, berth and access causeway, dredging of a navigation channel and associated works – Decision quashed (case ref: PA06D.PA0042).
- 2018: Permission for Change of Use of the existing building from passenger ferry terminal adjacent to St. Michael's Pier to Ground floor restaurant, Co-working and team-spaces, and audio and visual media studios and workshops. Granted on 06 September 2018 (case ref: D18A/0078).
- 2018: Dún Laoghaire Harbour Company was dissolved and transferred all rights, assets and liabilities on 03 October 2018 to Dún Laoghaire-Rathdown County Council in accordance with S.I. No. 391/2018 - Harbours Act 2015 (Dún Laoghaire Harbour Company Transfer and Dissolution Day) Order 2018.
- 2020: Removal/Deletion of condition number 2 of the Grant of Planning Permission Register Ref No. D18A/0078 and redesign of ground floor restaurant to be substituted by a food court. Granted permission following third party appeal on 14 December 2020 (ABP Order ref: ABP-306746-20):
- 2022: St. Michael's Pier was subject of a Foreshore Lease application (FS006786) (refer to Figure 2.3 for foreshore lease map), which was determined on 17 May 2022. This application was lodged by Dún Laoghaire Harbour Company (later Dún Laoghaire-Rathdown County Council).
- 2023: A MAC was obtained by Kish Offshore Wind Limited and Bray Offshore Wind Limited, for works required at and adjacent to St. Michael's Pier, including a 60 to 70m pontoon and partial removal of an existing fender structure (MAC20230012).
- 2024: A MAC was obtained by Dún Laoghaire-Rathdown County Council; Kish Offshore Wind Limited and Bray Offshore Wind Limited for works on the seaward side of the HWM, for a 1.77 hectare area relating to the former ferry terminal car park area and the removal of an existing Roll-on Roll off structure (MAC240020).

Project Response

There is a long-standing history of marine related development at St. Michael's Pier, Dún Laoghaire Harbour. At present there is under-utilisation of the Pier, and thus the proposed

development will assist in revitalising the pier's links to the local marine area. It will also provide a continued use of the Pier by Harbour Operations, with provision to accommodate the Harbour Authority's office/workshop requirements within the proposed O&M building, ensuring that the Pier remains central to the daily functioning of the harbour.

5.3 History of Surrounding Environs

The planning history of the immediate surrounding areas to the onshore grid infrastructure and O&M Base was reviewed and is listed in Table 5.1.

The planning application search has included those applications granted within a 500m radius of the landfall, onshore cable route and O&M Base, and within a period of the last ten years, to account for granted applications which have received a ten year permission duration (with the exception of Shanganagh-Bray Wastewater Treatment Plant, which required Ministerial Consent as it pre-dated the Planning and Development Act 2000).

There are no known developments within the nearshore or maritime area, except those already listed under Section 5.1.1 above, within a 500m radius of the application boundary in the maritime area.

The majority of planning applications identified within the search parameters related to single residential housing proposals due to the suburban character and context in which the proposed onshore grid infrastructure components are proposed to be located. Those planning applications which may overlap, interact or have the potential for cumulative impacts have been outlined in Table 5.1 below.

Table 5.1: Planning History of lands surrounding the proposed development

Application reference	Development Description	Date Granted
Landfall		
EC06D.EC2004	Local authority development requiring EIA - Shanganagh-Bray Main Drainage Scheme-Wastewater Treatment Works	Certified with modifications on 24.10.2001
Cable Route		
PC/CSDZ/013/2022	Cherrywood Natural Greenspace Green Route (common infrastructure project) extending approximately 5.0km from Brides Glen to Brennanstown comprising pedestrian and cycle connections to the N11, Wyattville Link Road, Cherrywood Avenue and Brides Glen/Cherrywood Road	13.06.2022
PC/CSDZ/005/2021	Proposed Regional Surface Water Attenuation Pond 2A, Cherrywood SDZ	05.07.2021
ABP-303945-19	Glenamuck District Roads Scheme which will connect the existing R117 Enniskerry Road with the Glenamuck Road and new link distributor road which will connect to the Ballycorus Road and the R117 Enniskerry Road (alternative north-south route)	18.12.2019
Onshore substation		
D21A/1115	Permission for retention and completion of modifications to the development permitted under Reg. Ref.:D18A/0257 and ABP Ref.: 304396-19. The proposed amendments to the permitted development comprise modifications to the Ballyogan Link Road (an extension of Northfields Road to Ballyogan Road to the north), consisting of the following: Alterations to the permitted realignment of the Ballyogan Stream.	13.01.2023
D18A/0257 / ABP-304396-19 (Third party appeal)	Retail/Commercial Development comprising a neighbourhood centre, retail warehouses, cinema and other leisure space, residential units, creche, office space, car showroom, medical centre, linear park and associated works.	Grant permission with conditions 26.09.2019
PC/IC/01/17 (Part 8 development)	Enniskerry Road/Glenamuck Road Junction Upgrade	2017

Application reference	Development Description	Date Granted
O&M Base		
ABP - 314309	Demolition of existing dwelling on site and the construction mixed use development of 88 no. Build to Rent residential apartments, commercial unit and cafe across 2 buildings and all associated site works.	08.05.2024
D24A/0140	Installation of a 1,200 sq.m (235kWp) Ground mounted solar photovoltaic (PV) array and all associated ancillary works.	30.04.2024
D18A/0460	Permission for development of a High-Performance Training Base within the site. The development will consist of: Provision of three (mobile) converted shipping containers to provide for meeting/training space, a gym, storage and boat maintenance; boat dock with associated floating pontoon area with access to water; access to shared toilet, changing facilities and canteen (within existing building) and three car parking bays and four trailer parking bays.	09 .10.2018
D13A/0682 (ABP - PL06D.244306)	Permission is sought for a new urban beach and floating pool facility. The proposed development will consist of an urban beach containing a cafe with outdoor seating area and a floating, heated, treated, out-door, saltwater swimming pool. The floating swimming pool will be constructed on a recycled Barge (circa 825m2) that will be moored beside Berth 1. Facilities such as changing rooms, toilet and showers will be provided on Berth 1 alongside the urban beach and cafe.	13.05.2015

5.4 Conclusion

The planning history search has sought to establish compatibility between established/existing development, consented development and the proposed development, in relation to establishing whether the proposed development is in accordance with the principles of proper planning and sustainable development.

In conclusion, neither the planning history of the proposed development itself, nor of the surrounding area, includes development or planning applications which would preclude the positive consideration of the subject lands for the proposed development.

6 Stakeholder Engagement

6.1 Introduction

Stakeholder engagement relating to the proposed development has been taking place since the initial foreshore licence applications in 2000. Since that time, extensive consultations have been conducted with local communities, statutory bodies, elected representatives and the wider public. This section provides an overview of these consultations. A comprehensive account of the consultations can be found within the Public Consultation and Engagement Report, which is included in Schedule 5 of the Planning Particulars. The accompanying EIAR also contains an overview of the responses to consultation, where appropriate.

6.2 Community Gain / Benefit

The proposed development will support local onshore and marine communities through a multi-million euro annual fund, which will be established for a period of up to 20 years. The community benefit fund will be managed and implemented in accordance with the Government's Offshore Renewable Energy Support Scheme. In accordance with the Support Scheme, an independent fund administrator must be appointed (scheduled to be appointed in 2025) to facilitate the local community in maximising the opportunities of the community benefit fund.

The value of the community benefit fund is dependent upon the final installed capacity of the project and will therefore be dependent upon the options chosen, subsequent to the grant of planning consent. The availability of the fund is an acknowledgement of the support of local communities who will host the proposed infrastructure and who are likely to be temporarily disrupted during construction and operational phases.

The community benefit fund will encourage a focus on providing funding to support education, energy efficiency, sustainable energy and climate action initiatives, to help transform communities and increase the environmental, economic, social and cultural well-being of each local community. The community benefit fund will be distributed for the benefit of the Target Local Community, in accordance with the requirements of the *ORESS1 Community Benefit Fund Rulebook for Generators and Fund Administrators (Government of Ireland, January 2023)*, as may be updated by the relevant Minister or nominated body. Due and careful consideration will be given to funding opportunities for all stakeholders in the CBF Target Local Community, including, but not limited to, local fishers, seafood culture, tourism, the wider blue economy, and maritime heritage communities.

6.3 Informal Stakeholder Consultation

Dublin Array has been in development since 1999 and has been the subject of a number of phases of statutory (foreshore licence applications) and non-statutory public consultations during its development history. Due to the time which had passed since these original consultation phases were completed, an updated consultation strategy commenced in 2020. Due to the reality of the COVID-19 pandemic, this updated consultation strategy was launched with a virtual consultation room which provided full details of the project and included facilities for an online public feedback form.

Whilst historically there has been a project website in place, it was significantly refreshed and updated in March 2018, and has been kept regularly updated since then. The dedicated project website contains a wide variety of project information, as well as contact details

(www.dublinarray.com). The project website contains all of the information issued to the public during the project public outreach campaigns.

There have been six distinct phases of consultation since the project's conception in 1999. The initial phase spans the period from 1999 to 2019, when RWE joined as the projects lead developer. Following this, consultation with statutory stakeholders in relation to the foreshore licence (FS007029) for marine surveys, comprised Phase 2.

Phase three of the consultation began in 2020, with the aforementioned virtual consultation facilities, which was the first non-statutory public consultation event and ran between 06 October and 23 November 2020. This phase included the onboarding of a dedicated Community Liaison Officer (CLO) and a Fisheries Liaison Officer (FLO), who have been available, as required, to address queries from interested parties. Both the CLO and FLO have attended a wide variety of meetings with various interested organisations and individuals throughout the development history of the project since their appointment, and remain as the primary points of contact for the public.

During this time, workshops were also held with marine users to better understand how the marine space is used commercially and recreationally. Information on the project was emailed to 43 stakeholders and they were asked to provide feedback on how they utilise the marine space to inform the navigation assessment, as well as being invited to participate in a workshop in November.

Of the 43 stakeholders invited, 13 attended an online workshop, where representatives from Dublin Array provided an overview of the project and their baseline assumptions about vessel traffic and outlined how they would be carrying out a navigational risk assessment. Attendees were then asked to provide information on their understanding of how the marine space is used by them and those they represent. An opportunity to raise questions was also provided.

This led to phase four (2021/2022), which included a statutory consultation in relation to the foreshore licence applications for additional marine surveys (FS007029 and FS007188), which took place between November 2021 and June 2022. A second public consultation was held in between January 26 and March 31, 2023 (Phase 5). This included 8 in-person consultation events at different locations. These consultations were walk-in events, and anyone was welcome to attend.

Phase 6 included a project information campaign, starting in 2024, comprising of a brochure outlining the Onshore Electrical System (OES) and Associated Engineering Works. This brochure was distributed to households and businesses along the proposed export cable corridor. A digital version was made available for viewing and downloading on the project website.

The aforementioned Fisheries Liaison Officer, in addition to attending various stakeholder engagement events, was appointed to enhance opportunities for meaningful engagement with fisheries stakeholders. The seafood sector is a vital part of Ireland's economy and heritage. Valuable meeting and engagement efforts with fisheries stakeholders active in and around the vicinity of Dublin Array, since the appointment of an FLO, have facilitated knowledge-sharing and information-gathering.

In addition, Dublin Array established a Commercial Fisheries Working Group (CFWG) in August 2022, to support consultation and regular engagement with local fisheries stakeholders and their representatives. The group includes local fishers from the harbours surrounding the proposed wind farm. It is envisaged that this CFWG will remain active throughout the lifetime of Dublin Array, to support ongoing relationships between the project and local fishermen. It will also enable advanced notification of upcoming activities and planned works and facilitate further discussions, as required. It is intended that a maximum of four meetings per year, during pre-

construction and construction phases, would be arranged, and a maximum of two meetings per year during the operational phase, or such frequency as agreed to be appropriate for the stage of the project. One-to-one discussions between Dublin Array and individual local fishers (and their representatives), will occur as needed, throughout all stages of the project lifecycle.

To date, engagement activities with the working group have included:

- Ongoing calls and meeting with the project FLO to support the understanding of fishing activities within the vicinity.
- Public and group meetings, starting in October 2019, have been held in Howth, Dun Laoghaire, Wicklow and Arklow.
- Calls and meetings with fishers' representative organisations including Regional Inshore Fisheries Forums (RIFFS), producer's organisations, the North Western, Waters Regional Advisory Council (NWWAC) and Bord Iascaigh Mhara (BIM).
- Opportunities for individual meetings with fishermen or their representatives to develop cooperation agreements for planned surveys.
- Observational surveys in response to concerns raised over the impact of strong tides on fishing activities within a wind farm.

6.4 Pre-application Consultation

Section 287 of the Planning and Development Act 2000, as amended, requires that prior to making an application for approval for an offshore wind development, an applicant should enter into pre-application consultation with An Bord Pleanála in relation to the proposed development. Accordingly, pre-application consultation meetings were held between representatives of the Board and the Applicant on six occasions, under case reference ABP-315800-23 between the 29 May 2023 and the 14 May 2024. The scope of this pre-application consultation process was the proposed offshore elements of the Dublin Array project, namely the wind farm its associated offshore electrical infrastructure and the Operations and Maintenance Base.

The onshore electrical transmission infrastructure elements of the Dublin Array project were previously the subject of separate pre-application consultations under section 182E (ABP-3018178-20). The Applicant decided to consolidate the offshore and onshore elements of the project into a single planning application and commenced a new pre-application consultation process (ABP-320756-24) on 04 September 2024. A meeting was held with An Bord Pleanála on 23 October 2024. A separate meeting under section 287A (ABP-320830-24) was also held on 23 October 2024 in respect of a design flexibility opinion.

The Board determined that given the nature of the proposed development, the application for the proposed development could be made and decided upon, prior to the confirmation of certain details. This opinion on design flexibility was issued by An Bord Pleanála on 03 December 2024.

The Section 287 pre-application consultation was confirmed to be closed on 03 December 2024.

7 Planning Appraisal

7.1 Introduction

The following sections provide a high-level planning assessment and outline of the likely 'substantive' topics of consideration arising from a proper planning and sustainable development perspective of the proposed development.

7.2 Need for the Proposed Development

Over the last decade there has been a commitment at both European and national level to provide legislative provision for the development of marine based economics. Simultaneously, the increasing prioritisation required to tackle climate action has been a catalyst to ensure that the maritime area can be utilised in reducing greenhouse gas (GHG) emissions, particularly in relation to the development of offshore renewable energy generation projects.

The ultimate driver for the project is the legally binding targets for the State to achieve a 51% reduction in GHG emissions by 2030, relative to its 2018 levels. Ireland's carbon budgets for the period 2021 to 2030, require Ireland to emit no more than 495 million tonnes of CO₂ equivalent and to reduce its annual emissions. To be able to meet these targets, the Climate Action Plan 2021 (CAP21) set out the actions to assist in the decarbonisation of the economy. Action 117 of CAP21 sets a target of deploying *at least 5 GW of offshore wind by 2030*, with this target and actions reiterated in CAP23 and CAP24.

The urgency to develop offshore renewable energy is further highlighted by Ireland's predicted failure to meet the 2030 carbon reduction targets, as stated by the Environmental Protection Agency (2024)⁴. It is therefore vital that offshore renewable energy generation is developed speedily, to ensure that electricity sectoral carbon targets set out in the Climate Action Plan, can be met. Dublin Array will help to decarbonise the State's electricity supply and meet our climate action plan goals of achieving at least 5 GW of offshore renewable energy by 2030. If planning approval is granted, Dublin Array will provide up to 824 MW of renewable energy to the national grid, and will also continue to help Ireland decarbonise for the lifetime of the project (approximately 35 years), by offsetting between 1,100,000 tonnes and 1,230,000 tonnes of carbon emissions annually,

7.3 Evaluation of the Proposed Development having regard to Policy

As outlined within the policy section (Chapter 3) of this Planning Report, through the separate policy 'Project Responses', the proposed development is supported by, aligned and in accordance with planning objectives and policies throughout the planning hierarchy.

Whilst responses to climate change are subject to increasing variation in order to deal with challenges; the urgency to decarbonise society is however prevalent throughout policy and the speed of the transition to carbon neutrality is also ever-increasing. The binding targets under the 'European Climate Law', cascade throughout the planning policy hierarchy, and an important component of the transition to carbon neutrality, is to decarbonise the electricity sector, which includes increasing the percentage of renewable energy as part of the energy mix. As such, the

⁴ <https://www.epa.ie/publications/monitoring--assessment/climate-change/air-emissions/EPA-GHG-Projections-Report-2022-2050-May24--v2.pdf>

proposed development is not only key to achieving national targets on climate change, but also to contributing towards binding European targets on greenhouse gas emissions.

In relation to national policy, both Project Ireland 2040 - the National Planning Framework and the National Development Plan, promote increases in renewable energy generation as part of climate action mitigation and acknowledge the role of transmission development. As such offshore renewable energy is identified as a key sector which can help to achieve the State's climate ambitions. The National Planning Framework thus supports *'the progressive development of Ireland's offshore renewable energy potential, including domestic and international grid connectivity enhancements'*. The National Planning Framework also recognises that ORE is *'critically dependent on the development of enabling infrastructure, including grid facilities to bring the energy ashore and connect to major sources of energy demand'*.

The importance of providing and maintaining security of electricity supply, is acknowledged in the Policy Statement on Security of Electricity Supply 2021 and Energy Security in Ireland to 2023. Within these policy documents there is clear and strong support for supporting indigenous renewable energy projects as part of the shift to a renewables-led energy system, which is a fundamental element of the transition to a low carbon society.

Policy relating to climate action and progressing towards a carbon neutral society is unequivocal in its support of increased electricity from renewable energy sources to achieve carbon emissions targets. The proposed development has potential to generate up to 824 MW which will contribute to the 5 GW offshore renewable energy target within the Climate Action Plan.

The proposed development has clearly demonstrated its consistency with the NMPF objectives for the ORE sector. The ORE objectives relate to decarbonising society, replacing fossil fuel imports with indigenous renewable energy, and providing fiscal return which will help to develop and strengthen the ORE sector in the State, which in turn will benefit local communities wherein which ORE projects are located. The proposed development is able to support each of these objectives through its implementation.

Regional policy, having taken account of policies in the National Planning Framework, continues to support and seek to facilitate ORE development, and any associated new transmission network infrastructure which facilitates linkages to ORE.

Local policy objectives within the Dún Laoghaire-Rathdown and Wicklow County Development Plans, support the development of offshore wind energy projects and their accompanying onshore grid connections, when these are undertaken in an environmentally acceptable manner. The proposed development has been subject to the preparation of an Environmental Impact Assessment Report, as well as Appropriate Assessment, Water Framework Directive assessments and Flood Risk Assessments, with mitigation measures proposed to avoid, prevent and/or reduce impacts of the proposed development.

The proposed development has been designed cognisant of the sustainable development principles that underpin the relevant County Development Plans, with the proposed development assisting to contribute to the Visions for climate resilient counties. The proposed development can assist in the fulfilment of these strategic county outcomes for a climate resilient county through its Community Benefit Fund. Local communities will benefit from projects funded by the CBF established in relation to the proposed development. The type of projects which are identified as being supported, include (inter alia) those which seek to support increased energy efficiency, sustainable energy and climate action initiatives.

The proposed development has been designed in consideration of existing and future development relevant to the land use zonings objectives applicable to the application boundary, with onshore electrical system infrastructure being located in areas of existing development i.e.

public roads/existing harbour pier, or on brownfield land i.e. onshore substation. Other lands which the proposed development will traverse, occur in road verges or amenity/public green areas. These will be reinstated to their original (pre-construction) condition and will therefore not impact on the overall achievement of any relevant zoning objectives.

This planning report has demonstrated that the proposed development is aligned across the hierarchy of policy/objectives with regards to the need and implementation of offshore wind development and its associated electricity transmission infrastructure which will support the wider transition to a renewable led generation system.

7.4 Environmental Impact Assessment

The EIAR accompanying the planning application has been prepared in accordance with the requirements of EU and Irish national law, policy and practice, including Annex IV of the EIA Directive, and Schedule 6 – *Information to be contained in EIAR* of the Planning and Development Regulations 2001, as amended.

7.5 Appropriate Assessment

A Stage 1 Screening and Stage 2 Appropriate Assessment Stage – Natura Impact Statement, has been included within the application (please refer Part 4 Habitats Directive Assessments of planning application).

7.6 Water Framework Directive Assessment

Two Water Framework Directive assessments have been included within the application, one in respect of the offshore elements of the proposed development and the other in relation of the onshore elements (please refer Volume 3 Chapter 2 Marine Water and Sediment Quality and Volume 5, Chapter 4 of the EIAR including their associated appendices).

7.7 Flood Risk Assessment

A Flood Risk Assessment (FRA) has been prepared for the onshore substation and cable route and a separate FRA has been prepared for the O&M Base. These assessments inform the EIAR and ensure proper and sustainable development principles have been considered as part of the proposed development. The respective FRAs were prepared in accordance with “The Planning System and Flood Risk Management – Guidelines for Planning Authorities (Government of Ireland / Office of Public Works, 2009)” (FRM Guidelines). The FRA for the onshore infrastructure (EIAR Volume 6, Appendix 6.5.4-2), identified that the proposed landfall site and onshore substation are located within Flood Zone C (low probability of fluvial flooding), and as an electricity substation is categorised as essential infrastructure and thus “highly-vulnerable” development. The proposed development is not at risk from other types of flooding (i.e. groundwater, pluvial or coastal). In accordance with the FRM Guideline’s “highly-vulnerable” development is “appropriate” within Flood Zone C, consequently a justification test is not required. No flood mitigation measures are required for the onshore substation or landfall site.

The underground cables are a type of development which can be categorised as “water compatible” based on their nature as a water resilient utility; as such, it is development which is appropriate in any flood zone.

The FRA prepared for the O&M Base (EIAR Volume 6, Appendix 6.5.4-3), identified that it is located within Flood Zone B (moderate probability of coastal flooding), and is categorised as a “less vulnerable” development type. The O&M Base is not at risk from other types of flooding i.e. fluvial, pluvial or groundwater. In accordance with the FRM Guidelines, the development of the

O&M Base is considered to be “appropriate” in Flood Zone B and does not require a Justification Test to be completed. Flood mitigation and resilience measures have already been embedded into the design of the O&M Base and are summarised below:

- O&M Building and ESB substation finished floor levels will be above the High End Future Scenario (including climate change allowance – an increase of 1,000mm in sea levels above the current scenario estimations)
- O&M building façade designed to be water resistant in the event of wave overtopping
- All door and other openings at low level will either be designed to be flood resistant when closed, or measures such as guide rails for portable flood barriers. will be incorporated in the building frame.
- External paving slopes to the pier edge with filter (ACO) drains to facilitate the capture of water and its direction through the drainage system, to gulley points through the pier deck.

7.8 Transboundary Considerations

Transboundary effects are considered in the EIAR. The EIAR has not identified any likely significant transboundary effects on the environment of the United Kingdom and Isle of Man, a state party to the United Nations Economic Commission for Europe (UNECE) Convention on Environmental Impact Assessment in a Transboundary Context.

7.9 Other Matters

Following the completion of construction works for the onshore electrical infrastructure, reinstatement works will be required along the majority of the 220 kV cable route. This will be with the exception of that section of cable which follows the proposed route of the approved Beckett Road. At this section, cables will be ‘pulled’ through ducting installed as part of the construction of Beckett Road. The reinstatement of public roads, within which the 220 kV cables will be laid, will be undertaken in accordance with planning drawing “220 kV Cable - Inroad Cross Sections” (drawing number 229100714-MMD-00-XX-DR-C-0051), while “off-road” areas, such as grassed road verges, grassed amenity areas or agricultural fields will be undertaken as per drawing “220 kV Cable - Offroad Cross Sections” (drawing number 229100714-MMD-00-XX-DR-C-0052).

Other off-road areas requiring reinstatement, such as temporary trenchless crossing compounds or temporary construction compounds, will be reinstated to their original ground covering; with specific areas, such as Shanganagh Cliffs and Loughlinstown Linear Park (circa chainage 950m to 1250m), being reinstated in agreement with Dun Laoghaire-Rathdown County Council (DLRCC).

Additionally, a landscape plan has been prepared for the onshore substation site. This has been guided by the siting of the proposed OSS adjacent to the future Jamestown public park, proposed at Ballyogan Landfill facility. The landscape plan is cognisant of the technical requirements of EirGrid (who will become owner and operator of the OSS) and operational health and safety requirements, whilst seeking to balance this against its future setting within Jamestown public park. Consequently, typical perimeter palisade fencing used for substation developments, is proposed to be replaced with a stone cut, round capped wall, which is more appropriate and sensitive to the public realm. Following consultation with DLRCC, native shrub planting is also proposed to be provided around the majority of the compound wall to further ‘soften’ the appearance of the OSS, and reflect its future setting. Tree planting around the compound wall is not possible due to the risk that tree roots pose to the integrity of the earth mat within the OSS. Instead native species shrubs will be planted. Notwithstanding, native tree planting has been provided to bolster existing trees to the north east of the OSS, with the

creation of a native wildflower meadow to the east and north eastern corner of the OSS compound.

7.9.1 Decommissioning

Decommissioning Offshore

A Decommissioning and Restoration Plan has been included in Volume 7 Appendix 7.2 of the Environmental Impact Assessment Report. It has been prepared in accordance Section 75 of the Maritime Area Planning Act 2021 (as amended), and Condition 5.1 of the following Maritime Area Consents

- Reference No. 2022-MAC-003 and 004
- Reference No. 20230012
- Reference No. 240020

(hereinafter referred to collectively as the “MACs”).

The Decommissioning and Restoration Plan includes three rehabilitation schedules, one for each MAC. The purpose of the Decommissioning and Restoration Plan is to describe how the Applicant proposes to rehabilitate that part of the maritime area, and any other part of the maritime area, adversely affected by the permitted maritime usages the subject of the MACs. It has been assessed within the Environmental Impact Assessment Report, Water Framework Directive Assessments, Supporting Information for Screening for Appropriate Assessment and Natura Impact Statement that accompany this application for development permission.

If development permission is granted by the competent authority for the permitted maritime usages the subject of the MACs, the three schedules will be provided to MARA for the purpose of being attached to the relevant MAC.

Given the passage of time between the submission of this application for development consent and the carrying out of decommissioning works, and the likely evolution of scientific and technological knowledge relating to decommissioning, this Decommissioning and Restoration Plan (which for the avoidance of doubt includes the rehabilitation schedules) will be kept under review by the Applicant as the project progresses. In particular, it will be reviewed having regard to the following:

- a. The baseline environment at the time rehabilitation works are proposed to be carried out,
- b. What, if any, adverse effects have occurred that require rehabilitation,
- c. Technological developments relating to the rehabilitation of marine environments,
- d. Changes in what is accepted as best practice relating to the rehabilitation of marine environments,
- e. Submissions or recommendations made to the Applicant by interested parties, organisations and other bodies concerned with the rehabilitation of marine environments, and/or
- f. Any new relevant regulatory requirements.

If the outcome of the Applicant's review is that a rehabilitation schedule requires alteration, the Applicant will apply to the relevant competent authority to alter the terms of its development permission, so as to alter the rehabilitation schedule, prior to the expiration of the development permission. Separately, if MARA forms the opinion that one or more of the schedules is no longer appropriate, MARA may serve a notice requiring the Applicant to make an alteration application to the competent authority in respect of the rehabilitation schedule. Any material alteration of the terms of the Applicant's development permission, based on the regulatory regime in place today, will involve further environmental assessment and public participation,

and any decision made by the competent authority will be judicially reviewable. The public will therefore have a full opportunity to participate in any such future process. The regulatory regime in place at the time of carrying out the decommissioning works is expected to be similar. Further, pursuant to Section 96(3) of the MAP Act, the Applicant acknowledges that the obligation to rehabilitate under Section 96(1) of the MAP Act, as amended, does not relieve the Applicant from having to apply for and obtain any other authorisations (whether the authorisation takes the form of the grant of a licence, consent, approval or any other authorisation) required under the MAP Act or any other enactment in order to enable the Applicant discharge this obligation.

In all circumstances, the Applicant's obligation to rehabilitate that part of the maritime area, and any other part of the maritime area, adversely affected by the permitted maritime usage the subject of the MACs, will be complied with.

Decommissioning Onshore

The construction, operation and maintenance works associated with the OES will be managed by the Applicant until the end of the proving period and handover of ownership to EirGrid. As the enduring asset owner, EirGrid will become responsible for decommissioning of the transferring assets at the end of their deemed lifetime.

Accordingly, this planning application does not seek permission for decommissioning of the OES. However, for the purpose of enabling a comprehensive environmental impact assessment, we have set out below our recommended approach to decommissioning, should EirGrid choose to decommission any aspect of the OES. This approach is informed by the Applicant's experience of decommissioning onshore substations and onshore export cables on other projects.

In addition, we have set out below the factors which should inform any decision by EirGrid to decommissioning:

- The baseline environment at the time decommissioning works are carried out;
- Technological developments relating to decommissioning of onshore transmission infrastructure;
- Changes in what is accepted as best practice relating to decommissioning of onshore transmission infrastructure;
- Submissions or recommendations made by interested parties, organisations and other bodies concerned with decommissioning of onshore transmission infrastructure; and
- Any new relevant regulatory requirements.

Further, any decommissioning works must:

- Comply with any decommissioning specific conditions in the Development Consent;
- Ensure that the environmental impacts are consistent or less in scale and magnitude to those predicted in the EIAR, SISAA, NIS and WFD associated with the Development Consent or any amendment of the Development Consent or any subsequent consent EirGrid might be granted in respect of decommissioning;
- Comply with the relevant health and safety regulations.

A decommissioning plan, along with an environmental management plan, should be prepared before any decommissioning works begin. If necessary, an application for consent should be made by EirGrid, and submitted to the relevant competent authority, in respect of any decommissioning works which require consent. We would expect any such application to involve further environmental assessment and public participation, and for any decision made by the competent authority to be judicially reviewable.

7.9.2 Precautionary Application for a Derogation Licence

The Applicant has decided to make an application to NPWS on a precautionary basis for a derogation licence in respect of marine mammals, pursuant to Regulation 54 of the Birds and Natural Habitats Regulations 2011 (transposing Article 16 of the Habitats Directive). The application has been submitted to NPWS and a copy is included in this planning application (Volume 4 of the EIAR, appendix 4.3.5-8).

This application has been submitted on a precautionary basis because it is the Applicant's view that this is not required in respect of the proposed development. As detailed within Volume 2, Chapter 2, of the EIAR (Consents, Policy and Legislation), the revised Renewable Energy Directive (EU) 2023/2413 (RED III) is materially relevant to any consideration of whether a derogation licence is required for the construction and operation of a renewable infrastructure project. This inserted Article 16b into the 2018 recast Renewable Energy Directive (Directive 2018/2001) which states that where a renewable energy project has adopted necessary mitigation measures, any killing or disturbance of the species protected under Article 12(1) of Directive 92/43/EEC and Article 5 of Directive 2009/147/EC shall not be considered to be 'deliberate'. The Applicant is satisfied that the proposed development incorporates the necessary mitigation measures and, therefore, any killing or disturbance of species protected by the Habitats Directive is not 'deliberate', within the meaning of those Directives, such that there is no requirement for a derogation licence.

Furthermore, Article 3 of the 2022 Temporary Renewable Energy Regulation (Regulation (EU) No.2022/2577) states that the planning, construction and operation of plants and installations for the production of energy from renewable sources, and their connection to the grid, the related grid itself and storage assets shall be presumed as being in the overriding public interest and serving public health and safety when balancing legal interests in the individual case and expressly refers to Article 16 of the Habitats Directive. This is amended by Council Regulation (EU) 2024/223. This is also relevant to any application for a derogation licence.

A copy of the submitted derogation licence application is included with this planning application (Appendix 4.3.5-8 of the EIAR) so that ABP can take it into account, to the extent considered necessary. The Applicant will write to ABP to confirm the outcome of the derogation licence process. If NPWS grants the derogation licence, the Applicant will provide a copy to ABP for consideration, and public consultation if required, so that ABP can reflect the granting of the licence in its reasoned conclusion on the EIA and AA and as part of its assessment of compliance with Biodiversity Policy 4 of the NMPF.

8 Conclusion

The proposed development will provide for an offshore wind farm off Ireland's east coast and associated onshore transmission infrastructure to support the generation and delivery of renewable energy to the national grid.

Recognised as a 'Relevant Project' by the Department of Housing, Planning and Local Government in 2020, the proposed development, once developed, will generate up to 824 MW of renewable energy. This represents approximately 16% of the 5GW target set in the Climate Action Plan. Additionally, it will offset Ireland's carbon emissions by between 1,100,000 and 1,230,000 tonnes per annum.

This Planning Report details the key planning issues that have been considered by the project team in respect of the proposed development. The assessment of the proposed development illustrates that it is in accordance with strategic planning and policy considerations, and principles of sustainable development. In summary, the proposed development:

- Complies with and supports the provisions of EU, national, regional, local and sectoral policy and objectives.
- Is consistent and in accordance with the extant land use zoning provisions as reflected within the extant Dun Laoghaire-Rathdown County Development Plan.
- Has been designed, where possible and applicable, to reflect the surrounding area and its history.
- Does not include any developments or planning applications that would preclude the positive consideration of the proposed development.
- Has been subject to environmental assessments to ensure that environmental impacts are minimised as far as practicable.

In conclusion, the proposed development will result in the provision of renewable energy generation infrastructure which is considered a priority across all policy sectors and levels. The proposed development will assist in supporting the State's transition to a low carbon economy and towards ensuring that installed renewable energy generation will comprise a larger percentage of the national energy supply in the years to 2030. Additionally, it will assist in achieving reductions in greenhouse gases for the electricity sector, and thus delivering on national and international carbon neutrality targets to secure a climate resilient and carbon neutral future.

Having regard to the above, it is concluded and submitted that the proposed development would therefore be in accordance with the proper planning and sustainable development of the area.

Appendices

- A. OREDP1 Mitigation Responses
- B. Land use zoning relative to proposed onshore electrical system
- C. National Marine Planning Framework Policy Responses

A. OREDP1 Mitigation Responses

Review of Project Level Mitigation Measures

Potential Effect	Suggested Project Level Mitigation Measures in OREDP	Timescale	Dublin Array Response	Application Reference (contained with Environmental Impact Assessment Report)
Geology, Geomorphology and Hydrography				
Changes in hydrodynamic / coastal processes and seabed morphology	Site specific geophysical and geotechnical surveys to establish a baseline and inform the impact assessment for individual developments	Site/cable route selection stage. Project design stage. EIA stage.	Site-specific surveys, including geophysical, metocean, and benthic ecology studies, have been carried out and used to inform the assessment provided in Volume 3, Chapter 1 Marine Geology, Oceanography and Physical Processes.	Volume 3, Chapter 1 Marine Geology, Oceanography and Physical Processes.
	Modelling of hydrodynamics and sediment transport	Site/cable route selection stage. Project design stage. EIA stage.	Hydrodynamic modelling has been carried out to accompany the Planning Application and is presented in the EIAR in Volume 3, Chapter 1 Marine Geology Oceanography and Physical Processes, Volume 4, Appendix 4.3.1-2 Physical Process Modelling for Dublin Array Offshore Wind Farm and Appendix 4.3.1-3 Hydrodynamic Calibration and Validation Report.	Volume 3, Chapter 1 Marine Geology, Oceanography. Volume 4, Appendix 4.3.1-2 Physical Process Modelling for Dublin Array Offshore Wind Farm. Volume 4, Appendix 4.3.1-3 Hydrodynamic Calibration and Validation Report.
	Avoidance of placement of devices in areas where sediment transport pathways are modelled as highly sensitive to change	Site/cable route selection stage. Project design stage. EIA stage.	The receptors in the physical processes study area affected by the changes to the hydrodynamic, wave, and sediment regimes include the broader seabed, its morphology and underlying geology, the prevailing hydrodynamic and wave regime, as well as the sediment transport regime and coastal processes. As part of the early design stages, alternative locations and designs for the proposed development were considered and these are presented in Volume 2, Chapter 5 Consideration of Alternatives. In addition, other avoidance and preventative measures were identified throughout the early development phase of the Dublin Array project, also to avoid and prevent likely significant effects to receptors, which go beyond design features. These measures were incorporated as constituent elements of the project, they are referenced in the project description chapter of this EIAR and they form part of the project for which planning permission is being sought. These measures are distinct from design features and are found within the suite of management plans included in Volume 7 Planning Stage Plans of the EIAR.	Volume 3, Chapter 1 Marine Geology, Oceanography and Physical Processes. Volume 2, Chapter 5 Consideration of Alternatives
	Modelling the effects on coastal processes should form part of pre-project activities to optimise location	Site/cable route selection stage. Project design stage. EIA stage.	Hydrodynamic modelling has been carried out to accompany the Planning Application and is presented in Volume 3, Chapter 1 Marine Geology Oceanography and Physical Processes, Volume 4, Appendix 4.3.1-2 Physical Process Modelling for Dublin Array Offshore Wind Farm and Appendix 4.3.1-3 Hydrodynamic Calibration and Validation Report. The findings from these assessments informed the site design process. As part of the early design stages, alternative locations and designs for the proposed development were considered and these are presented in Volume 2, Chapter 5 Consideration of Alternatives.	Volume 3, Chapter 1 Marine Geology, Oceanography. Volume 4, Appendix 4.3.1-2 Physical Process Modelling for Dublin Array Offshore Wind Farm. Volume 4, Appendix 4.3.1-3 Hydrodynamic Calibration and Validation Report. Volume 2, Chapter 5 Consideration of Alternatives
	Avoidance of placement of devices within zones where coastal processes are modelled as highly sensitive to change	Site/cable route selection stage. Project design stage. EIA stage.	The receptors in the physical processes study area affected by the changes to the hydrodynamic, wave, and sediment regimes include the broader seabed, its morphology and underlying geology, the prevailing hydrodynamic and wave regime, as well as the sediment transport regime and coastal processes. As part of the early design stages, alternative locations and designs for the proposed development were considered and these are presented in Volume 2, Chapter 5 Consideration of Alternatives. In addition, other avoidance and preventative measures were identified throughout the early development phase of the Dublin Array project, also to avoid and prevent likely significant effects to receptors, which go beyond design features. These measures were	Volume 3, Chapter 1 Marine Geology, Oceanography and Physical Processes.

Potential Effect	Suggested Project Level Mitigation Measures in OREDP	Timescale	Dublin Array Response	Application Reference (contained with Environmental Impact Assessment Report)
			incorporated as constituent elements of the project, they are referenced in the project description chapter of this EIAR and they form part of the project for which planning permission is being sought. These measures are distinct from design features and are found within the suite of management plans included in Volume 7 Planning Stage Plans of the EIAR.	
Seabed Contamination and Water Quality				
Accidental release of contaminants (hydraulic fluids/vessel fuel)	Carry out potentially hazardous operations under appropriate weather/tide conditions	Project design stage.	The potential impacts of the proposed development on water quality and sediments are assessed in Volume 3, Chapter 2 Marine Water and Sediment Quality.	Volume 7, Appendix 7.1 PEMP (Project Environmental Management Plan)
		EIA stage.	<p>Volume 7, Appendix 7.1 PEMP (Project Environmental Management Plan) is a plan developed to ensure that appropriate environmental management practices are followed throughout the lifetime of the proposed development. The PEMP provides the framework within which appropriate environmental management practices will be applied including but not limited to matters such as;</p> <ul style="list-style-type: none"> ▪ A marine pollution contingency plan to address the risks, methods and procedures to deal with any spills and collision incidents of the authorised proposed development in relation to all activities carried out below MHWS; ▪ A chemical risk review to include information regarding how and when chemicals (including vessel fuels) are to be used, stored and transported in accordance with recognised best practice guidance and national and international regulations and commitments; ▪ A marine biosecurity plan detailing how the risk of introduction and spread of invasive alien species will be minimised; ▪ Waste management and disposal arrangements; ▪ An environmental vessel management plan, to determine vessel routing to and from construction sites and ports, to include a code of conduct for vessel operators; and ▪ Dropped object plan for reporting and recovery of dropped objects where they pose a potential hazard to other marine users. 	Volume 3, Chapter 2 Marine Water and Sediment Quality
		Project installation. Project operation and maintenance.		
Use low toxicity and biodegradable materials		Project design stage.	Volume 8, Chapter 2 Schedule of Commitments confirms the commitment of the proposed development to use grouts that will adhere to the relevant maritime industry specifications, ensuring safety and suitability for use in the marine environment. Where required, drill fluids will comply with industry best practices and standards to minimise environmental risks.	Volume 8, Chapter 2 Schedule of Commitments
		EIA stage.		
		Project installation. Project operation and maintenance.		
Use minimum quantities		Project design stage.	The proposed development, including the offshore infrastructure has been designed using the most appropriate and best available design information, ensuring minimal contaminant quantity requirement for hydraulic fluids/vessel fuel (refer to Volume 2, Chapter 6 Project Description).	Volume 2, Chapter 6 Project Description
		EIA stage.		
		Project installation. Project operation and maintenance.	<p>Volume 7, Appendix 7.1 PEMP (Project Environmental Management Plan) is a plan developed to ensure that appropriate environmental management practices are followed throughout the lifetime of the proposed development. The PEMP provides the framework within which appropriate environmental management practices will be applied including but not limited to matters such as;</p> <ul style="list-style-type: none"> ▪ A marine pollution contingency plan to address the risks, methods and procedures to deal with any spills and collision incidents of the authorised proposed development in relation to all activities carried out below MHWS; ▪ A chemical risk review to include information regarding how and when chemicals (including vessel fuels) are to be used, stored and transported in accordance with recognised best practice guidance and national and international regulations and commitments; ▪ A marine biosecurity plan detailing how the risk of introduction and spread of invasive alien species will be minimised; ▪ Waste management and disposal arrangements; 	Volume 7, Appendix 7.1 PEMP (Project Environmental Management Plan)

Potential Effect	Suggested Project Level Mitigation Measures in OREDP	Timescale	Dublin Array Response	Application Reference (contained with Environmental Impact Assessment Report)
			<ul style="list-style-type: none"> An environmental vessel management plan, to determine vessel routing to and from construction sites and ports, to include a code of conduct for vessel operators; and Dropped object plan for reporting and recovery of dropped objects where they pose a potential hazard to other marine users. 	
	Design for minimum maintenance	Project design stage. EIA stage. Project installation. Project operation and maintenance.	The proposed development, including the offshore infrastructure has been designed using the most appropriate and best available design information, ensuring minimal maintenance requirements (refer to Volume 2, Chapter 6 Project Description). Nevertheless, operation and maintenance activities have been thoroughly assessed across all relevant chapters of the EIAR, with management measures secured within Volume 7 Planning Stage Plans which accompany the planning application.	Volume 2, Chapter 6 Project Description
	Risk assessment and contingency planning	Project design stage. EIA stage. Project installation. Project operation and maintenance.	Volume 7, Appendix 7.1 PEMP (Project Environmental Management Plan) is a plan developed to ensure that appropriate environmental management practices are followed throughout the lifetime of the proposed development. The PEMP provides the framework within which appropriate environmental management practices will be applied including but not limited to matters such as; <ul style="list-style-type: none"> A marine pollution contingency plan to address the risks, methods and procedures to deal with any spills and collision incidents of the authorised proposed development in relation to all activities carried out below MHWS; A chemical risk review to include information regarding how and when chemicals (including vessel fuels) are to be used, stored and transported in accordance with recognised best practice guidance and national and international regulations and commitments; A marine biosecurity plan detailing how the risk of introduction and spread of invasive alien species will be minimised; Waste management and disposal arrangements; An environmental vessel management plan, to determine vessel routing to and from construction sites and ports, to include a code of conduct for vessel operators; and Dropped object plan for reporting and recovery of dropped objects where they pose a potential hazard to other marine users. 	Volume 7, Appendix 7.1 PEMP (Project Environmental Management Plan)
	Implementation of SOPEP (Shipboard Oil Pollution Emergency Plan)	Project design stage. EIA stage. Project installation. Project operation and maintenance.	A PEMP has been developed to ensure that appropriate controls are implemented to manage environmental risks associated with the construction and operation of the offshore infrastructure. The plan sets out environmental procedures to be adhered to throughout the construction and operation phase, in line with legislative requirements and industry best practices. The PEMP includes a Marine Pollution Prevention and Contingency Plan, detailing the steps to be taken in the event of a marine pollution incident arising from the operations relating to the proposed development. It also contains a chemical risk review to include information regarding how and when chemicals (including vessel fuels) are to be used, stored and transported in accordance with recognised best practice guidance and national and international regulations and commitments.	Volume 7, Appendix 7.1 PEMP (Project Environmental Management Plan)
Disturbance of contaminated sediments	Avoid device/infrastructure placement within 500m of areas of known sediment contamination	Project design stage. EIA stage. Project installation. Project operation and maintenance.	<p>A benthic intertidal and subtidal ecological survey was conducted to encompass the benthic ecology study area and the offshore export cable corridor (offshore ECC). The results are presented in Volume 3, Chapter 3 Benthic Subtidal and Intertidal Ecology and Volume 4, Appendix 4.3.3-1 Technical Baseline Report – Benthic Subtidal and Intertidal Ecology.</p> <p>A subset of fifteen stations was sampled for contaminant analysis. Results indicated low levels of chemical contaminants at the stations sampled within the benthic and subtidal ecology study. Most contaminant levels at the sampled stations were below the Irish Lower Action Levels and Cefas Action Level 1. One station showed arsenic levels slightly above the Irish Lower Action Level, it still remained below the Upper Action Level.</p> <p>Furthermore, none of the samples collected exhibit PAH levels in exceedance of the Irish Sediment Quality Guidelines. Analysis of the Total Hydrocarbon (THC) and n-Alkanes was also undertaken, with no samples</p>	Volume 3, Chapter 3 Benthic Subtidal and Intertidal Ecology and Volume 4, Appendix 4.3.3-1 Technical Baseline Report – Benthic Subtidal and Intertidal Ecology Volume 4, Appendix 4.3.3-2 Marine Intertidal Ecological Survey, Shanganagh & Poolbeg, Co. Dublin Volume 4, 4.3.3-3 Subtidal Survey Report Main Array & ECR - Benthic Ecology Monitoring Report

Potential Effect	Suggested Project Level Mitigation Measures in OREDP	Timescale	Dublin Array Response	Application Reference (contained with Environmental Impact Assessment Report)
			reporting elevated levels (Fugro, 2021). All samples collected for the project reported levels of Dibutyl Tin (DBT) and Tributyl Tin (TBT) that were well below the Irish Sediment Quality Lower Level; the sample results within the array area were less than 5 µg/kg and 2 µg/kg for DBT and TBT, respectively.	
	Carry out pre-installation bottom surveys	Project design stage. EIA stage. Project installation. Project operation and maintenance.	A benthic intertidal and subtidal ecological survey was conducted to encompass the benthic ecology study area and the offshore export cable corridor (offshore ECC). A subset of fifteen stations was sampled for contaminant analysis. Results indicated low levels of chemical contaminants at the stations sampled within the benthic and subtidal ecology study. Most contaminant levels at the sampled stations were below the Irish Lower Action Levels and Cefas Action Level 1. One station showed arsenic levels slightly above the Irish Lower Action Level, it still remained below the Upper Action Level. Furthermore, none of the samples collected exhibit PAH levels in exceedance of the Irish Sediment Quality Guidelines. Analysis of the Total Hydrocarbon (THC) and n-Alkanes was also undertaken, with no samples reporting elevated levels (Fugro, 2021). All samples collected for the project reported levels of Dibutyl Tin (DBT) and Tributyl Tin (TBT) that were well below the Irish Sediment Quality Lower Level; the sample results within the array area were less than 5 µg/kg and 2 µg/kg for DBT and TBT, respectively.	Volume 3, Chapter 3 Benthic Subtidal and Intertidal Ecology and Volume 4, Appendix 4.3.3-1 Technical Baseline Report – Benthic Subtidal and Intertidal Ecology Volume 4, Appendix 4.3.3-2 Marine Intertidal Ecological Survey, Shanganagh & Poolbeg, Co. Dublin Volume 4, Appendix 4.3.3-3 Subtidal Survey Report Main Array & ECR - Benthic Ecology Monitoring Report
	Use installation methods that minimise disturbance of sediments	Project design stage. EIA stage. Project installation. Project operation and maintenance.	Volume 2, Chapter 6 Project Description and Volume 8, Part 3 Schedule of Measures confirm the proposed development's commitment to conducting bedform clearance operations only when necessary, thus minimising sediment disturbance and alterations to seabed morphology. During the installation of wind turbine generators (WTGs), equipment such as jack-up vessels are expected to remain in any one location for a limited period of time, ranging from hours to a few days. This approach will ensure that any impacts on the prevailing hydrodynamic, wave, and sediment regimes, as well as coastal processes, are minimised.	Volume 2, Chapter 6 Project Description Volume 8, Chapter 2 Schedule of Commitments
	Carry out work in appropriate tidal conditions to minimise effect	Project design stage. EIA stage. Project installation. Project operation and maintenance.	During the installation of WTGs, equipment such as jack-up vessels will be positioned at each location for a limited duration, typically from a few hours to several days. This will minimise any potential impacts on the prevailing hydrodynamic, wave, and sediment conditions, as well as on coastal processes.	Volume 8, Chapter 2 Schedule of Commitments
	Avoid sensitive time periods for local receptors	Project design stage. EIA stage. Project installation. Project operation and maintenance.	No sensitive seasons were identified for local receptors, however as part of the early design stages, alternative locations and designs for the proposed development were considered and these are presented in Volume 2, Chapter 5 Consideration of Alternatives. In addition, other avoidance and preventative measures were identified throughout the early development phase of the proposed development, also to avoid and prevent likely significant effects to receptors, which go beyond design features. These measures were incorporated as constituent elements of the proposed development, they are referenced in the project description chapter of this EIAR and they form part of the project for which planning permission is being sought. These measures are distinct from design features and are found within the suite of management plans included in Volume 7 Planning Stage Plans of the EIAR.	Volume 2, Chapter 5 Consideration of Alternatives Volume 2, Chapter 6 Project Description Volume 7 Planning Stage Plans Volume 3, Chapter 3 Benthic Subtidal and Intertidal Ecology
	Risk assessment and contingency planning	Project design stage. EIA stage.	Volume 7, Appendix 7.1 PEMP (Project Environmental Management Plan) is a plan developed to ensure that appropriate environmental management practices are followed throughout the lifetime of the proposed development. The PEMP provides the framework within which appropriate environmental management practices will be applied, and includes a marine pollution contingency plan to address the risks, methods and procedures to deal with any spills and collision incidents of the authorised proposed development in relation to all activities carried out below MHWS. It also includes details of a chemical risk review to include information regarding how	Volume 7, Appendix 7.1 PEMP (Project Environmental Management Plan)

Potential Effect	Suggested Project Level Mitigation Measures in OREDP	Timescale	Dublin Array Response	Application Reference (contained with Environmental Impact Assessment Report)
		Project installation. Project operation and maintenance.	and when chemicals (including vessel fuels) are to be used, stored and transported in accordance with recognised best practice guidance and national and international regulations and commitments.	
	If munitions are encountered advice such as that given in Department of the Marine and Natural Resources 2001 (Marine Notice No. 16 of 2001 (i.e. explosives picked up at sea in trawls or sighted; and ii. the removal of explosive items from wrecks)) should be followed.	Project design stage. EIA stage. Project installation. Project operation and maintenance.	As outlined within Volume 2, Chapter 6 Project Description, a risk assessment was undertaken to determine the likelihood of an encounter with a UXO during site investigation activities, cable installation and WTG installation. The risk assessment concluded that the UXO risk within the development boundary varies from low to moderate depending on the activity being undertaken. Pre-installation, a geophysical survey will be undertaken for the purposes of locating and identifying items that could potentially model as UXO across the site. Once the survey data has been collected, the data will be interrogated by a UXO Specialist Contractor and anomalies that appear to be UXO or potential UXO (pUXO) will be identified by their precise co-ordinates. A UXO assessment will be undertaken, and mitigation proposed to reduce the risk of detonating ordnance to As Low As Reasonably Practicable. UXO and pUXO will be avoided as the primary mitigation. Where possible a buffer area, which provides a suitable safe distance around the anomaly, will be established and avoided by all wind farm activities by micro-siting of all intrusive seabed works. If they cannot be avoided they will be subject to the identification and clearance campaign.	Volume 2, Chapter 6 Project Description Volume 7, Appendix 7.1 PEMP (Project Environmental Management Plan)
Protected Sites and Species				
Degradation of protected sites	Careful site selection avoiding sensitive sites for devices and export cables (i.e. existing and proposed protected sites).	Site/cable route selection stage. Project design stage. EIA stage.	Site selection has been carried out to avoid protected sites where possible (Volume 2, Chapter 6 Project Description), with appropriate project design features and avoidance and preventative measures introduced where avoidance is not practicable. Refer to Volume 2, Chapter 5 Consideration of Alternatives and Volume 8, Chapter 3 Schedule of Commitments for site and receptor-specific project design features and avoidance and preventative measures.	Volume 2, Chapter 6 Project Description Volume 2, Chapter 5 Consideration of Alternatives Volume 8, Chapter 2 Schedule of Commitments
	Modelling of sediment transport	Site/cable route selection stage. Project design stage. EIA stage.	Hydrodynamic modelling has been carried out to accompany the Planning Application and is presented in Volume 3, Chapter 1 Marine Geology Oceanography and Physical Processes, Volume 4, Appendix 4.3.1-2 Physical Process Modelling for Dublin Array Offshore Wind Farm and Appendix 4.3.1-3 Hydrodynamic Calibration and Validation Report.	Volume 3, Chapter 1 Marine Geology, Oceanography. Volume 4, Appendix 4.3.1-2 Physical Process Modelling for Dublin Array Offshore Wind Farm. Volume 4, Appendix 4.3.1-3 Hydrodynamic Calibration and Validation Report.
	Possible mitigation measures relevant to the specific interest features of the sites and their seasonal and other sensitivities are described elsewhere in this table for the relevant topic areas	Site/cable route selection stage. Project design stage. EIA stage.	Seasonal measures have been proposed, where applicable, to protect sensitive receptors.	Volume 8, Chapter 2 Schedule of Commitments Volume 3, Various EIAR chapters
	See sections below on benthic ecology, fish and shellfish, seabirds, turtles and marine mammals.	Site/cable route selection stage. Project design stage. EIA stage.	Sections below address the proposed developments compliance with Suggested OREDP Project Level Mitigation Measures as they relate to benthic ecology, fish and shellfish, seabirds, turtles and marine mammals.	Volume 3 Various EIAR chapters

Potential Effect	Suggested Project Level Mitigation Measures in OREDP	Timescale	Dublin Array Response	Application Reference (contained with Environmental Impact Assessment Report)
Benthic Ecology				
Damage/loss to habitats and non- mobile species (All technologies)	Careful site selection avoiding sensitive sites for devices and export cables (i.e. areas with known sensitive intertidal and subtidal benthic habitats).	Survey. Site/cable route selection stage. Project design stage. EIA stage.	The positions of WTGs and OSP has been determined using a variety of site-specific data, including metocean data (e.g., wind speed and direction), geophysical and geotechnical survey data (e.g., bathymetry), environmental data (e.g., benthic surveys and archaeological assessments), and input from stakeholder consultations. Site selection has been carried out to avoid protected sites where possible (Volume 2, Chapter 6 Project Description), with appropriate project design features and avoidance and preventative measures introduced where avoidance is not practicable. Refer to Volume 2, Chapter 5 Consideration of Alternatives and Volume 8, Chapter 2 Schedule of Commitments for site and receptor-specific project design features and avoidance and preventative measures. As such, offshore infrastructure locations have been chosen to avoid known sensitive ecological habitats.	Volume 2, Chapter 5 Consideration of Alternatives Volume 2, Chapter 6 Project Description Volume 4, Appendix 4.3.3-1 Technical Baseline Report – Benthic Subtidal and Intertidal Ecology Volume 3, Chapter 3 Benthic Subtidal and Intertidal Ecology
	Benthic survey to characterise seabed and identify sensitive sites and species.	Survey. Site/cable route selection stage. Project design stage. EIA stage.	A survey of benthic intertidal and subtidal ecology has been carried out to accompany the Planning Application and is presented in Volume 3, Chapter 3 Benthic Subtidal and Intertidal Ecology, and Volume 4, Appendix 4.3.3-1 Technical Baseline Report – Benthic Subtidal and Intertidal Ecology.	Volume 3, Chapter 3 Benthic Subtidal and Intertidal Ecology Volume 4, Appendix 4.3.3-1 Technical Baseline Report – Benthic Subtidal and Intertidal Ecology Volume 4, Appendix 4.3.3-2 Marine Intertidal Ecological Survey, Shanganagh & Poolbeg, Co. Dublin Volume 4, Appendix 4.3.3-3 Subtidal Survey Report Main Array & ECR - Benthic Ecology Monitoring Report Volume 4, Appendix 4.3.3-4 Array Area & ECR – Environmental Features Report (Habitat Analysis Only)
	Avoid installation during sensitive seasons.	Survey. Site/cable route selection stage. Project design stage. EIA stage.	No sensitive seasons were identified, however as part of the early design stages, alternative locations and designs for the proposed development were considered and these are presented in Volume 2, Chapter 5 Consideration of Alternatives. In addition, other avoidance and preventative measures were identified throughout the early development phase of the proposed development, also to avoid and prevent likely significant effects to receptors, which go beyond design features. These measures were incorporated as constituent elements of the proposed development, they are referenced in the project description chapter of this EIAR and they form part of the project for which planning permission is being sought. These measures are distinct from design features and are found within the suite of management plans included in Volume 7 Planning Stage Plans of the EIAR. A survey of benthic intertidal and subtidal ecology has been carried out to accompany the Planning Application and is presented in Volume 3, Chapter 3 Benthic Subtidal and Intertidal Ecology, and Volume 4, Appendix 4.3.3-1 Technical Baseline Report – Benthic Subtidal and Intertidal Ecology.	Volume 2, Chapter 5 Consideration of Alternatives Volume 2, Chapter 6 Project Description Volume 7 Planning Stage Plans Volume 3, Chapter 3 Benthic Subtidal and Intertidal Ecology Volume 4, Appendix 4.3.3-1 Technical Baseline Report – Benthic Subtidal and Intertidal Ecology
Suspended sediment and increased turbidity (All technologies)	Careful site selection avoiding sensitive sites for devices and export cables (i.e. areas with known sensitive intertidal and subtidal benthic habitats).	Survey. Site/cable route selection stage. Project design stage.	The positions of WTGs and OSP has been determined using a variety of site-specific data, including metocean data (e.g., wind speed and direction), geophysical and geotechnical survey data (e.g., bathymetry), environmental data (e.g., benthic surveys and archaeological assessments), and input from stakeholder consultations. Site selection has been carried out to avoid protected sites where possible (Volume 2, Chapter 6 Project Description), with appropriate project design features and avoidance and preventative measures introduced where avoidance is not practicable. Refer to Volume 2, Chapter 5 Consideration of Alternatives and Volume 8, Chapter 2 Schedule of Commitments for site and receptor-specific project design features and avoidance and preventative measures. As	Volume 2, Chapter 5 Consideration of Alternatives Volume 2, Chapter 6 Project Description Volume 4, Appendix 4.3.3-1 Technical Baseline Report – Benthic Subtidal and Intertidal Ecology

Potential Effect	Suggested Project Level Mitigation Measures in OREDP	Timescale	Dublin Array Response	Application Reference (contained with Environmental Impact Assessment Report)
		EIA stage.	such, offshore infrastructure locations have been chosen to avoid known sensitive ecological habitats. The planning application has sought permission to allow for a 350 metres limit of deviation from inter-array cable routes, turbine and OSP locations (in addition to two offshore export cable corridor alternatives) to facilitate avoidance of sensitive seabed conditions and minimising environmental impacts) if encountered during the detailed design and installation process.	Volume 3, Chapter 3 Benthic Subtidal and Intertidal Ecology Volume 8, Chapter 2 Schedule of Commitments
	Benthic survey to characterise seabed and identify sensitive sites and species.	Survey. Site/cable route selection stage. Project design stage. EIA stage.	A survey of benthic intertidal and subtidal ecology has been carried out to accompany the Planning Application and is presented in Volume 3, Chapter 3 Benthic Subtidal and Intertidal Ecology, and Volume 4, Appendix 4.3.3-1 Technical Baseline Report – Benthic Subtidal and Intertidal Ecology.	Volume 3, Chapter 3 Benthic Subtidal and Intertidal Ecology Volume 4, Appendix 4.3.3-1 Technical Baseline Report – Benthic Subtidal and Intertidal Ecology Volume 4, Appendix 4.3.3-2 Marine Intertidal Ecological Survey, Shanganagh & Poolbeg, Co. Dublin Volume 4, Appendix 4.3.3-3 Subtidal Survey Report Main Array & ECR - Benthic Ecology Monitoring Report Volume 4, Appendix 4.3.3-4 Array Area & ECR – Environmental Features Report (Habitat Analysis Only)
	Modelling of transport sediment.	Survey. Site/cable route selection stage. Project design stage. EIA stage.	Hydrodynamic modelling has been carried out to accompany the Planning Application and is presented in Volume 3, Chapter 1 Marine Geology Oceanography and Physical Processes, Volume 4, Appendix 4.3.1-2 Physical Process Modelling for Dublin Array Offshore Wind Farm and Appendix 4.3.1-3 Hydrodynamic Calibration and Validation Report. The findings from these assessments informed the site selection process.	Volume 3, Chapter 1 Marine Geology, Oceanography. Volume 4, Appendix 4.3.1-2 Physical Process Modelling for Dublin Array Offshore Wind Farm. Volume 4, Appendix 4.3.1-3 Hydrodynamic Calibration and Validation Report.
	Avoid installation during sensitive seasons.	Survey. Site/cable route selection stage. Project design stage. EIA stage.	No sensitive seasons were identified, however as part of the early design stages, alternative locations and designs for the proposed development were considered and these are presented in Volume 2, Chapter 5 Consideration of Alternatives. In addition, other avoidance and preventative measures were identified throughout the early development phase of the proposed development, also to avoid and prevent likely significant effects to receptors, which go beyond design features. These measures were incorporated as constituent elements of the proposed development, they are referenced in the project description chapter of this EIAR and they form part of the project for which planning permission is being sought. These measures are distinct from design features and are found within the suite of management plans included in Volume 7 Planning Stage Plans of the EIAR. A survey of benthic intertidal and subtidal ecology has been carried out to accompany the Planning Application and is presented in Volume 3, Chapter 3 Benthic Subtidal and Intertidal Ecology, and Volume 4, Appendix 4.3.3-1 Technical Baseline Report – Benthic Subtidal and Intertidal Ecology.	Volume 2, Chapter 5 Consideration of Alternatives Volume 2, Chapter 6 Project Description Volume 7 Planning Stage Plans Volume 3, Chapter 3 Benthic Subtidal and Intertidal Ecology Volume 4, Appendix 4.3.3-1 Technical Baseline Report – Benthic Subtidal and Intertidal Ecology
Smothering	Careful site selection avoiding sensitive sites for devices and export cables (i.e. areas with known sensitive intertidal and subtidal benthic habitats).	Survey. Site/cable route selection stage. Project design stage.	The positions of WTGs and OSP has been determined using a variety of site-specific data, including metocean data (e.g., wind speed and direction), geophysical and geotechnical survey data (e.g., bathymetry), environmental data (e.g., benthic surveys and archaeological assessments), and input from stakeholder consultations. Site selection has been carried out to avoid protected sites where possible (Volume 2, Chapter 6 Project Description), with appropriate project design features and avoidance and preventative measures introduced where avoidance is not practicable. Refer to Volume 2, Chapter 5 Consideration of Alternatives and Volume 8, Part 3 Schedule of Measures for site and receptor-specific project design features and avoidance and preventative measures. As such, offshore infrastructure locations have been chosen to avoid known sensitive ecological habitats.	Volume 2, Chapter 5 Consideration of Alternatives Volume 2, Chapter 6 Project Description Volume 4, Appendix 4.3.3-1 Technical Baseline Report – Benthic Subtidal and Intertidal Ecology

Potential Effect	Suggested Project Level Mitigation Measures in OREDP	Timescale	Dublin Array Response	Application Reference (contained with Environmental Impact Assessment Report)
		EIA stage.		Volume 3, Chapter 3 Benthic Subtidal and Intertidal Ecology
	Benthic survey to characterise seabed and identify sensitive sites and species.	Survey. Site/cable route selection stage. Project design stage. EIA stage.	A survey of benthic intertidal and subtidal ecology has been carried out to accompany the Planning Application and is presented in Volume 3, Chapter 3 Benthic Subtidal and Intertidal Ecology, and Volume 4, Appendix 4.3.3-1 Technical Baseline Report – Benthic Subtidal and Intertidal Ecology.	Volume 3, Chapter 3 Benthic Subtidal and Intertidal Ecology Volume 4, Appendix 4.3.3-1 Technical Baseline Report – Benthic Subtidal and Intertidal Ecology Volume 4, Appendix 4.3.3-2 Marine Intertidal Ecological Survey, Shanganagh & Poolbeg, Co. Dublin 4.3.3-3 Subtidal Survey Report Main Array & ECR - Benthic Ecology Monitoring Report Volume 4, Appendix 4.3.3-4 Array Area & ECR – Environmental Features Report (Habitat Analysis Only)
	Modelling of transport sediment.	Survey. Site/cable route selection stage. Project design stage. EIA stage.	Hydrodynamic modelling has been carried out to accompany the planning application (as part of the EIAR) and is presented in Volume 3, Chapter 1 Marine Geology Oceanography and Physical Processes, Volume 4, Appendix 4.3.1-2 Physical Process Modelling for Dublin Array Offshore Wind Farm and Appendix 4.3.1-3 Hydrodynamic Calibration and Validation Report. The findings from these assessments informed the site selection process.	Volume 3, Chapter 1 Marine Geology, Oceanography. Volume 4, Appendix 4.3.1-2 Physical Process Modelling for Dublin Array Offshore Wind Farm. Volume 4, Appendix 4.3.1-3 Hydrodynamic Calibration and Validation Report.
	Avoid installation during sensitive seasons	Survey. Site/cable route selection stage. Project design stage. EIA stage.	No sensitive seasons were identified, however as part of the early design stages, alternative locations and designs for the proposed development were considered and these are presented in Volume 2, Chapter 5 Consideration of Alternatives. In addition, other avoidance and preventative measures were identified throughout the early development phase of the proposed development, also to avoid and prevent likely significant effects to receptors, which go beyond design features. These measures were incorporated as constituent elements of the proposed development, they are referenced in the project description chapter of this EIAR and they form part of the project for which planning permission is being sought. These measures are distinct from design features and are found within the suite of management plans included in Volume 7 Planning Stage Plans of the EIAR. A survey of benthic intertidal and subtidal ecology has been carried out to accompany the Planning Application and is presented in Volume 3, Chapter 3 Benthic Subtidal and Intertidal Ecology, and Volume 4, Appendix 4.3.3-1 Technical Baseline Report – Benthic Subtidal and Intertidal Ecology.	Volume 2, Chapter 5 Consideration of Alternatives Volume 2, Chapter 6 Project Description Volume 7 Planning Stage Plans Volume 3, Chapter 3 Benthic Subtidal and Intertidal Ecology Volume 4, Appendix 4.3.3-1 Technical Baseline Report – Benthic Subtidal and Intertidal Ecology
Contamination – from sediment disturbance	Avoid device/infrastructure placement within 500m of areas of known sediment contamination	Survey. Site/cable route selection stage. Project design stage. EIA stage.	A benthic intertidal and subtidal ecological survey was conducted to encompass the benthic ecology study area and the offshore export cable corridor (offshore ECC). The results are presented in Volume 3, Chapter 3 Benthic Subtidal and Intertidal Ecology and Volume 4, Appendix 4.3.3-1 Technical Baseline Report – Benthic Subtidal and Intertidal Ecology. A subset of fifteen stations was sampled for contaminant analysis. Results indicated low levels of chemical contaminants at the stations sampled within the benthic and subtidal ecology study. Most contaminant levels at the sampled stations were below the Irish Lower Action Levels and Cefas Action Level 1. One station showed arsenic levels slightly above the Irish Lower Action Level, it still remained below the Upper Action Level. Furthermore, none of the samples collected exhibit PAH levels in exceedance of the Irish Sediment Quality Guidelines. Analysis of the Total Hydrocarbon (THC) and n-Alkanes was also undertaken, with no samples reporting elevated levels (Fugro, 2021). All samples collected for the project reported levels of Dibutyl Tin (DBT)	Volume 3, Chapter 3 Benthic Subtidal and Intertidal Ecology and Volume 4, Appendix 4.3.3-1 Technical Baseline Report – Benthic Subtidal and Intertidal Ecology Volume 4, Appendix 4.3.3-2 Marine Intertidal Ecological Survey, Shanganagh & Poolbeg, Co. Dublin

Potential Effect	Suggested Project Level Mitigation Measures in OREDP	Timescale	Dublin Array Response	Application Reference (contained with Environmental Impact Assessment Report)
			and Tributyl Tin (TBT) that were well below the Irish Sediment Quality Lower Level; the sample results within the array area were less than 5 µg/kg and 2 µg/kg for DBT and TBT, respectively.	Volume 4, Appendix 4.3.3-3 Subtidal Survey Report Main Array & ECR - Benthic Ecology Monitoring Report
	Survey to identify potential sources of seabed contamination	Survey. Site/cable route selection stage. Project design stage. EIA stage.	<p>A benthic intertidal and subtidal ecological survey was conducted to encompass the benthic ecology study area and the offshore export cable corridor (offshore ECC). The results are presented in Volume 3, Chapter 3 Benthic Subtidal and Intertidal Ecology and Volume 4, Appendix 4.3.3-1 Technical Baseline Report – Benthic Subtidal and Intertidal Ecology.</p> <p>A subset of fifteen stations was sampled for contaminant analysis. Results indicated low levels of chemical contaminants at the stations sampled within the benthic and subtidal ecology study. Most contaminant levels at the sampled stations were below the Irish Lower Action Levels and Cefas Action Level 1. One station showed arsenic levels slightly above the Irish Lower Action Level, it still remained below the Upper Action Level.</p> <p>Furthermore, none of the samples collected exhibit PAH levels in exceedance of the Irish Sediment Quality Guidelines. Analysis of the Total Hydrocarbon (THC) and n-Alkanes was also undertaken, with no samples reporting elevated levels (Fugro, 2021). All samples collected for the project reported levels of Dibutyl Tin (DBT) and Tributyl Tin (TBT) that were well below the Irish Sediment Quality Lower Level; the sample results within the array area were less than 5 µg/kg and 2 µg/kg for DBT and TBT, respectively.</p>	<p>Volume 3, Chapter 3 Benthic Subtidal and Intertidal Ecology and</p> <p>Volume 4, Appendix 4.3.3-1 Technical Baseline Report – Benthic Subtidal and Intertidal Ecology</p> <p>Volume 4, 4.3.3-2 Marine Intertidal Ecological Survey, Shanganagh & Poolbeg, Co. Dublin</p> <p>Volume 4, Appendix 4.3.3-3 Subtidal Survey Report Main Array & ECR - Benthic Ecology Monitoring Report</p>
	Benthic survey to characterise seabed and identify sensitive sites and species	Survey Site/cable route selection stage. Project design stage. EIA stage.	A benthic intertidal and subtidal ecological survey was conducted to encompass the benthic ecology study area and the offshore export cable corridor (offshore ECC). The results are presented in Volume 3, Chapter 3 Benthic Subtidal and Intertidal Ecology and Volume 4, Appendix 4.3.3-1 Technical Baseline Report – Benthic Subtidal and Intertidal Ecology.	<p>Volume 3, Chapter 3 Benthic Subtidal and Intertidal Ecology and</p> <p>Volume 4, Appendix 4.3.3-1 Technical Baseline Report – Benthic Subtidal and Intertidal Ecology</p> <p>Volume 4, Appendix 4.3.3-2 Marine Intertidal Ecological Survey, Shanganagh & Poolbeg, Co. Dublin</p> <p>Volume 4, Appendix 4.3.3-3 Subtidal Survey Report Main Array & ECR - Benthic Ecology Monitoring Report</p>
Scouring (Devices with fixed foundations/structures)	Benthic survey to characterise seabed and identify sensitive sites and species	Project design stage. EIA stage.	A survey of benthic intertidal and subtidal ecology has been carried out to accompany the Planning Application and is presented in Volume 3, Chapter 3 Benthic Subtidal and Intertidal Ecology, and Volume 4, Appendix 4.3.3-1 Technical Baseline Report – Benthic Subtidal and Intertidal Ecology.	<p>Volume 3, Chapter 3 Benthic Subtidal and Intertidal Ecology</p> <p>Volume 4, Appendix 4.3.3-1 Technical Baseline Report – Benthic Subtidal and Intertidal Ecology</p> <p>Volume 4, Appendix 4.3.3-2 Marine Intertidal Ecological Survey, Shanganagh & Poolbeg, Co. Dublin</p> <p>Volume 4, Appendix 4.3.3-3 Subtidal Survey Report Main Array & ECR - Benthic Ecology Monitoring Report</p> <p>Volume 4, Appendix 4.3.3-4 Array Area & ECR – Environmental Features Report (Habitat Analysis Only)</p>

Potential Effect	Suggested Project Level Mitigation Measures in OREDP	Timescale	Dublin Array Response	Application Reference (contained with Environmental Impact Assessment Report)
	Modelling of transport sediment	Project design stage. EIA stage	Hydrodynamic modelling has been carried out to accompany the Planning Application and is presented in Volume 3, Chapter 1 Marine Geology Oceanography and Physical Processes, Volume 4, Appendix 4.3.1-2 Physical Process Modelling for Dublin Array Offshore Wind Farm and Appendix 4.3.1-3 Hydrodynamic Calibration and Validation Report. The findings from these assessments informed the project design and environmental impact assessment process.	Volume 3, Chapter 1 Marine Geology, Oceanography. Volume 4, Appendix 4.3.1-2 Physical Process Modelling for Dublin Array Offshore Wind Farm. Volume 4, Appendix 4.3.1-3 Hydrodynamic Calibration and Validation Report.
	Use of scour protection around fixed structure foundations to reduce effects of scour on habitats /non mobile species	Project design stage. EIA stage.	The inclusion of scour protection has been addressed in the design in Volume 2, Chapter 6 Project Description. The impact assessment of long-term habitat loss and habitat creation due to scour and scour protection has been carried out and is presented in Volume 3, Chapter 3 Benthic Subtidal and Intertidal Ecology.	Volume 2, Chapter6 Project Description Volume 3, Chapter 3 Benthic Subtidal and Intertidal Ecology
Accidental contamination (hydraulic fluids or vessel cargo/fuel)	Design devices to minimise risk of leakage of pollutants	Project design stage. EIA stage. Project installation. Project operation and maintenance.	Volume 7, Appendix 7.1 PEMP (Project Environmental Management Plan) is a plan developed to ensure that appropriate environmental management practices are followed throughout the lifetime of the proposed development. The PEMP provides the framework within which appropriate environmental management practices will be applied including but not limited to matters such as; <ul style="list-style-type: none"> ▪ A marine pollution contingency plan to address the risks, methods and procedures to deal with any spills and collision incidents of the authorised proposed development in relation to all activities carried out below MHWS; ▪ A chemical risk review to include information regarding how and when chemicals (including vessel fuels) are to be used, stored and transported in accordance with recognised best practice guidance and national and international regulations and commitments; ▪ A marine biosecurity plan detailing how the risk of introduction and spread of invasive alien species will be minimised; ▪ Waste management and disposal arrangements; ▪ An environmental vessel management plan, to determine vessel routing to and from construction sites and ports, to include a code of conduct for vessel operators; and ▪ Dropped object plan for reporting and recovery of dropped objects where they pose a potential hazard to other marine users. 	Volume 7, Appendix 7.1 PEMP (Project Environmental Management Plan)
	Risk assessment and contingency planning	Project design stage. EIA stage. Project installation. Project operation and maintenance.	Volume 7, Appendix 7.1 PEMP (Project Environmental Management Plan) is a plan developed to ensure that appropriate environmental management practices are followed throughout the lifetime of the proposed development. The PEMP provides the framework within which appropriate environmental management practices will be applied, and includes a marine pollution contingency plan to address the risks, methods and procedures to deal with any spills and collision incidents of the authorised proposed development in relation to all activities carried out below MHWS. It also includes details of a chemical risk review to include information regarding how and when chemicals (including vessel fuels) are to be used, stored and transported in accordance with recognised best practice guidance and national and international regulations and commitments.	Volume 7, Appendix 7.1 PEMP (Project Environmental Management Plan)
	Implementation of SOPEP (Shipboard Oil Pollution Emergency Plan)	Project design stage. EIA stage. Project installation. Project operation and maintenance.	A PEMP has been developed to ensure that appropriate controls are implemented to manage environmental risks associated with the construction and operation of the offshore infrastructure. The plan sets out environmental procedures to be adhered to throughout the construction and operation phase, in line with legislative requirements and industry best practices. The PEMP includes a Marine Pollution Prevention and Contingency Plan, detailing the steps to be taken in the event of a marine pollution incident arising from the operations relating to the proposed development. It also contains a chemical risk review to include information regarding how and when chemicals (including vessel fuels) are to be used, stored and transported in accordance with recognised best practice guidance and national and international regulations and commitments.	Volume 7, Appendix 7.1 PEMP (Project Environmental Management Plan)

Potential Effect	Suggested Project Level Mitigation Measures in OREDP	Timescale	Dublin Array Response	Application Reference (contained with Environmental Impact Assessment Report)
	Benthic survey to characterise seabed and identify sensitive sites and species	Project design stage. EIA stage. Project installation. Project operation and maintenance.	A survey of benthic intertidal and subtidal ecology has been carried out to accompany the Planning Application and is presented in Volume 3, Chapter 3 Benthic Subtidal and Intertidal Ecology, and Volume 4, Appendix 4.3.3-1 Technical Baseline Report – Benthic Subtidal and Intertidal Ecology.	Volume 3, Chapter 3 Benthic Subtidal and Intertidal Ecology Volume 4, Appendix, 4.3.3-1 Technical Baseline Report – Benthic Subtidal and Intertidal Ecology Volume 4, Appendix 4.3.3-2 Marine Intertidal Ecological Survey, Shanganagh & Poolbeg, Co. Dublin Volume 4, Appendix 4.3.3-3 Subtidal Survey Report Main Array & ECR - Benthic Ecology Monitoring Report Volume 4, Appendix 4.3.3-4 Array Area & ECR – Environmental Features Report (Habitat Analysis Only)
Changes in wave regime and tidal flow	Benthic survey to characterise seabed and identify habitats and species sensitive to changes in wave or tidal regimes	Project design stage. EIA stage.	A survey of benthic intertidal and subtidal ecology has been carried out to accompany the Planning Application and is presented in Volume 3, Chapter 3 Benthic Subtidal and Intertidal Ecology, and Volume 4, Appendix 4.3.3-1 Technical Baseline Report – Benthic Subtidal and Intertidal Ecology.	Volume 3, Chapter 3 Benthic Subtidal and Intertidal Ecology Volume 4, Appendix 4.3.3-1 Technical Baseline Report – Benthic Subtidal and Intertidal Ecology Volume 4, Appendix 4.3.3-2 Marine Intertidal Ecological Survey, Shanganagh & Poolbeg, Co. Dublin Volume 4, Appendix 4.3.3-3 Subtidal Survey Report Main Array & ECR - Benthic Ecology Monitoring Report Volume 4, Appendix 4.3.3-4 Array Area & ECR – Environmental Features Report (Habitat Analysis Only)
	Hydrodynamic modelling to determine potential for energy extraction in certain locations	Project design stage. EIA stage	Hydrodynamic modelling has been carried out to accompany the Planning Application and is presented in Volume 3, Chapter 1 Marine Geology Oceanography and Physical Processes, Volume 4, Appendix 4.3.1-2 Physical Process Modelling for Dublin Array Offshore Wind Farm and Appendix 4.3.1-3 Hydrodynamic Calibration and Validation Report. The findings from these assessments informed the site selection process.	Volume 3, Chapter 1 Marine Geology, Oceanography. Volume 4, Appendix 4.3.1-2 Physical Process Modelling for Dublin Array Offshore Wind Farm. Volume 4, Appendix 4.3.1-3 Hydrodynamic Calibration and Validation Report.
	Avoidance of important habitats though careful site selection	Project design stage. EIA stage	The positions of WTGs and OSP has been determined using a variety of site-specific data, including metocean data (e.g., wind speed and direction), geophysical and geotechnical survey data (e.g., bathymetry), environmental data (e.g., benthic surveys and archaeological assessments), and input from stakeholder consultations. Site selection has been carried out to avoid protected sites where possible (Volume 2, Chapter 6 Project Description), with appropriate project design features and avoidance and preventative measures introduced where avoidance is not practicable. Refer to Volume 2, Chapter 5 Consideration of Alternatives and Volume 8, Part 3 Schedule of Commitments for site and receptor-specific project design features and avoidance and preventative measures. As such, offshore infrastructure locations have been chosen to avoid known sensitive ecological habitats wherever practicable.	Volume 2, Chapter 6 Project Description Volume 2, Chapter 5 Consideration of Alternatives Volume 8, Chapter 2 Schedule of Commitments

Potential Effect	Suggested Project Level Mitigation Measures in OREDP	Timescale	Dublin Array Response	Application Reference (contained with Environmental Impact Assessment Report)
	Ensure adequate spacing between wave and tidal developments to reduce potential for energy extraction	Project design stage. EIA stage	Not applicable, as the proposed development is not a wave or tidal development.	Not applicable
Substratum change	Careful site selection avoiding sensitive sites for devices and export cables (i.e. areas with known sensitive intertidal and subtidal benthic habitats)	Site/cable route selection stage. Project design stage. EIA stage.	The positions of WTGs and OSP has been determined using a variety of site-specific data, including metocean data (e.g., wind speed and direction), geophysical and geotechnical survey data (e.g., bathymetry), environmental data (e.g., benthic surveys and archaeological assessments), and input from stakeholder consultations. Site selection has been carried out to avoid protected sites where possible (Volume 2, Chapter 6 Project Description), with appropriate project design features and avoidance and preventative measures introduced where avoidance is not practicable. Refer to Volume 2, Chapter 5 Consideration of Alternatives and Volume 8, Part 3 Schedule of Commitments for site and receptor-specific project design features and avoidance and preventative measures. As such, offshore infrastructure locations have been chosen to avoid known sensitive ecological habitats wherever practicable.	Volume 2, Chapter 5 Consideration of Alternatives Volume 2, Chapter 6 Project Description Volume 4, Appendix 4.3.3-1 Technical Baseline Report – Benthic Subtidal and Intertidal Ecology Volume 3, Chapter 3 Benthic Subtidal and Intertidal Ecology
	Benthic survey to characterise seabed and identify sensitive sites and species	Site/cable route selection stage. Project design stage. EIA stage	A survey of benthic intertidal and subtidal ecology has been carried out to accompany the Planning Application and is presented in Volume 3, Chapter 3 Benthic Subtidal and Intertidal Ecology, and Volume 4, Appendix 4.3.3-1 Technical Baseline Report – Benthic Subtidal and Intertidal Ecology.	Volume 3, Chapter 3 Benthic Subtidal and Intertidal Ecology Volume 4, Appendix 4.3.3-1 Technical Baseline Report – Benthic Subtidal and Intertidal Ecology Volume 4, Appendix 4.3.3-2 Marine Intertidal Ecological Survey, Shanganagh & Poolbeg, Co. Dublin Volume 4, Appendix 4.3.3-3 Subtidal Survey Report Main Array & ECR - Benthic Ecology Monitoring Report Volume 4, 4.3.3-4 Array Area & ECR – Environmental Features Report (Habitat Analysis Only).
Fish and Shellfish				
Disturbance	Surveys to identify key breeding and migration routes	Site/cable route selection stage. Project design stage. EIA stage. Project installation. Operation.	Site-specific characterisation surveys were conducted across the Dublin Array fish and shellfish ecology study area in 2002 (results summarised in Ecoserve, 2008) and 2019 (Aquafact, 2019). These were designed to provide an understanding of the function of the Kish and Bray Banks in relation to the local fisheries resource. The fish and shellfish ecology assessment is also informed by data collected during site-specific grab, Drop-Down Video (DDV) and dredge surveys (Aquafact, 2018; Ecoserve, 2008 and Fugro, 2021 (Volume 4, Appendix 3.3-4), which were used to complement the description of fish and shellfish resources in the study area and to identify potential suitable spawning grounds for sandeels (<i>Ammodytes</i> spp.) and Atlantic herring (<i>Clupea harengus</i>). In addition, a detailed desktop review has been carried out to inform the baseline characterisation of fish and shellfish resources within the study area. Information was obtained on fish and shellfish ecology in general, on spawning and nursery behaviour and habitats of key species. The results of the surveys and desktop review are provided in Volume 3, Chapter 4 Fish and Shellfish Ecology.	Volume 3, Chapter 4 Fish and Shellfish Ecology

Potential Effect	Suggested Project Level Mitigation Measures in OREDP	Timescale	Dublin Array Response	Application Reference (contained with Environmental Impact Assessment Report)
	Avoid sensitive sites/areas where possible	Site/cable route selection stage. Project design stage. EIA stage. Project installation. Operation.	As part of the early design stages, alternative locations and designs for the proposed development were considered and these are presented in Volume 2, Chapter 5 Consideration of Alternatives. In addition, other avoidance and preventative measures were identified throughout the early development phase of the proposed development, also to avoid and prevent likely significant effects to receptors, which go beyond design features. These measures were incorporated as constituent elements of the proposed development, they are referenced in the project description chapter of the EIAR (Volume 2, Chapter 6) and they form part of the project for which planning permission is being sought. These measures are distinct from design features and are found within the suite of management plans included in Volume 7 Planning Stage Plans of the EIAR.	Volume 2, Chapter 5 Consideration of Alternatives Volume 7 Planning Stage Plans
	Where development occurs near to sensitive sites/areas avoid installation during sensitive seasons	Site/cable route selection stage. Project design stage. EIA stage. Project installation. Operation.	<p>The proposed development, including the offshore infrastructure has been designed using the most appropriate and best available design information (refer to Volume 2, Chapter 6 Project Description). As part of the early design stages, alternative locations and designs for the proposed development were considered and these are presented in Volume 2, Chapter 5 Consideration of Alternatives. In addition, other avoidance and preventative measures were identified throughout the early development phase of the proposed development, also to avoid and prevent likely significant effects to receptors, which go beyond design features. These measures were incorporated as constituent elements of the proposed development, they are referenced in the project description chapter of this EIAR and they form part of the project for which planning permission is being sought. These measures are distinct from design features and are found within the suite of management plans included in Volume 7 Planning Stage Plans of the EIAR.</p> <p>Volume 7, Appendix 7.4 Marine Megafauna Mitigation Plan (MMMP) is the primary mitigation tool for marine mammals and supports the planning application for the proposed development. The MMMP should be read alongside the Vessel Management Plan (within Volume 7, Part 1 PEMP), which includes avoidance and preventative measures against certain impacts relating to vessels.</p> <p>Volume 7, Appendix 7.1 PEMP (Project Environmental Management Plan) is a plan developed to ensure that appropriate environmental management practices are followed throughout the lifetime of the proposed development. The PEMP provides the framework within which appropriate environmental management practices will be applied, and includes;</p> <ul style="list-style-type: none"> ▪ A marine biosecurity plan detailing how the risk of introduction and spread of invasive alien species will be minimised; and ▪ A code of conduct will be implemented by all vessel operators when encountering marine species. In addition, vessel movements to and from construction sites and ports will, where feasible, follow existing routes. While these measures are primarily targeted towards marine mammals and birds at sea, they would equally reduce the risk of injury and disturbance to marine turtles and other larger mobile receptors, such as basking sharks. 	<p>Volume 7, Appendix 7.1 PEMP (Project Environment Management Plan)</p> <p>Volume 7, Appendix 7.4 MMMP (Marine Megafauna Mitigation Plan)</p> <p>Volume 7, Appendix 7.6 Vessel Management Plan</p>
	Programme survey and installation works associated with a species project to reduce potential for noisy or other disturbing activities to occur at the same time	Site/cable route selection stage. Project design stage. EIA stage. Project installation. Operation.	<p>Survey and installation works will be scheduled to avoid overlap with other noisy activities.</p> <p>The proposed development, including the offshore infrastructure has been designed using the most appropriate and best available design information (refer to Volume 2, Chapter 6 Project Description). As outlined therein, the Applicant commits to the implementation of at-source noise mitigation methods (e.g. bubble curtains, casings, resonators) to reduce the source level of the underwater noise from pile driving by at least 10 decibels (dB). The Applicant also commits to no simultaneous (concurrent) piling of foundations to avoid and minimise impacts.</p> <p>Avoidance and preventative measures were identified throughout the early development phase of the proposed development, also to avoid and prevent likely significant effects to receptors, which go beyond design features. These measures were incorporated as constituent elements of the proposed development, they are referenced in the project description chapter of this EIAR and they form part of the project for which planning permission is being sought. These measures are distinct from design features and are found within the suite of management plans included in Volume 7 Planning Stage Plans of the EIAR.</p>	<p>Volume 3, Chapter 4 Fish and Shellfish Ecology</p> <p>Volume 7, Appendix 7.1 PEMP (Project Environment Management Plan)</p> <p>Volume 7, Appendix 7.4 MMMP (Marine Megafauna Mitigation Plan)</p>

Potential Effect	Suggested Project Level Mitigation Measures in OREDP	Timescale	Dublin Array Response	Application Reference (contained with Environmental Impact Assessment Report)
			<p>Volume 7, Appendix 7.4 Marine Megafauna Mitigation Plan (MMMP) is the primary mitigation tool for marine mammals and supports the consent application for the proposed development. The MMMP should be read alongside the Environmental Vessel Management Plan (EVMP)(within Volume 7, Appendix 7.1 PEMP), which includes avoidance and preventative measures against certain impacts relating to vessels.</p> <p>Volume 7, Appendix 7.1 PEMP (Project Environmental Management Plan) provides the framework within which appropriate environmental management practices will be applied, and includes a code of conduct will be implemented by all vessel operators when encountering marine species. In addition, vessel movements to and from construction sites and ports will, where feasible, follow existing routes. While these measures are primarily targeted towards marine mammals and birds at sea, they would equally reduce the risk of injury and disturbance to marine turtles and other larger mobile receptors, such as basking sharks.</p>	
	Programme survey and development installation works for a number of projects to reduce potential for installation periods to coincide with other developments to reduce potential for cumulative effects from developments	Site/cable route selection stage. Project design stage. EIA stage. Project installation. Operation.	<p>As outlined in Volume 3, Chapter 4 Fish and Shellfish Ecology, no significant effects have been identified as a result of the construction of the proposed development alone, or cumulatively with other developments.</p> <p>Additionally, construction phase impacts are addressed through the implementation of a Marine Megafauna Mitigation Plan (MMMP), which also extends mitigations to fish.</p>	Volume 3, Chapter 4 Fish and Shellfish Ecology Volume 7, Appendix 7.4 Marine Megafauna Mitigation Plan (MMMP)
	Programme maintenance works to avoid sensitive seasons e.g. breeding and migration	Site/cable route selection stage. Project design stage. EIA stage. Project installation. Operation.	<p>As outlined in Volume 3, Chapter 4 Fish and Shellfish Ecology, no significant effects have been identified as a result of the operation and maintenance of the proposed development alone, or cumulatively with other developments. As such, there is no need for programming of multiple surveys or other developments.</p>	Volume 3, Chapter 4 Fish and Shellfish Ecology Volume 7, Appendix 7.4 Marine Megafauna Mitigation Plan (MMMP)
Displacement	Surveys to identify key breeding and migration routes	Site/cable route selection stage. Project design stage. EIA stage. Project installation. Operation.	<p>Site-specific characterisation surveys were conducted across the Dublin Array fish and shellfish ecology study area in 2002 (results summarised in Ecoserve, 2008) and 2019 (Aquafact, 2019). These were designed to provide an understanding of the function of the Kish and Bray Banks in relation to the local fisheries resource. The fish and shellfish ecology assessment is also informed by data collected during site-specific grab, Drop-Down Video (DDV) and dredge surveys (Aquafact, 2018; Ecoserve, 2008 and Fugro, 2021 (Volume 4, Appendix 3.3-4), which were used to complement the description of fish and shellfish resources in the study area and to identify potential suitable spawning grounds for sandeels (<i>Ammodytes</i> spp.) and Atlantic herring (<i>Clupea harengus</i>). In addition, a detailed desktop review has been carried out to inform the baseline characterisation of fish and shellfish resources within the study area. Information was obtained on fish and shellfish ecology in general, on spawning and nursery behaviour and habitats of key species. The results of the surveys and desktop review are provided in Volume 3, Chapter 4 Fish and Shellfish Ecology.</p>	Volume 3, Chapter 4 Fish and Shellfish Ecology
	Avoid locating developments on key migration routes or in key breeding areas	Site/cable route selection stage. Project design stage.	<p>As part of the early design stages, alternative locations and designs for the proposed development were considered and these are presented in Volume 2, Chapter 5 Consideration of Alternatives. In addition, other avoidance and preventative measures were identified throughout the early development phase of the proposed development, also to avoid and prevent likely significant effects to receptors, which go beyond design features. These measures were incorporated as constituent elements of the proposed development, they are referenced in</p>	Volume 2, Chapter 5 Consideration of Alternatives Volume 7 Planning Stage Plans

Potential Effect	Suggested Project Level Mitigation Measures in OREDP	Timescale	Dublin Array Response	Application Reference (contained with Environmental Impact Assessment Report)
		EIA stage. Operation.	the project description chapter of this EIAR and they form part of the project for which planning permission is being sought. These measures are distinct from design features and are found within the suite of management plans included in Volume 7 Planning Stage Plans of the EIAR.	
	Where development occurs near to sensitive sites/areas avoid installation during sensitive seasons	Site/cable route selection stage. Project design stage. EIA stage. Operation.	<p>The proposed development, including the offshore infrastructure has been designed using the most appropriate and best available design information (refer to Volume 2, Chapter 6 Project Description). As part of the early design stages, alternative locations and designs for the proposed development were considered and these are presented in Volume 2, Chapter 5 Consideration of Alternatives. In addition, other avoidance and preventative measures were identified throughout the early development phase of the proposed development, also to avoid and prevent likely significant effects to receptors, which go beyond design features. These measures were incorporated as constituent elements of the proposed development, they are referenced in the project description chapter of this EIAR and they form part of the project for which planning permission is being sought. These measures are distinct from design features and are found within the suite of management plans included in Volume 7 Planning Stage Plans of the EIAR.</p> <p>Volume 7, Appendix 7.4 Marine Megafauna Mitigation Plan (MMMP) is the primary mitigation tool for marine mammals and supports the consent application for the proposed development. The MMMP should be read alongside the Environmental Vessel Management Plan (EVMP)(within Volume 7, Part 1 PEMP), which includes avoidance and preventative measures against certain impacts relating to vessels. A number of those measures within the MMMP are also applicable to fish and shellfish</p> <p>Volume 7, Appendix 7.1 PEMP (Project Environmental Management Plan) is a plan developed to ensure that appropriate environmental management practices are followed throughout the lifetime of the proposed development. The PEMP provides the framework within which appropriate environmental management practices will be applied, and includes;</p> <ul style="list-style-type: none"> ▪ A marine biosecurity plan detailing how the risk of introduction and spread of invasive alien species will be minimised; and ▪ A code of conduct will be implemented by all vessel operators when encountering marine species. In addition, vessel movements to and from construction sites and ports will, where feasible, follow existing routes. While these measures are primarily targeted towards marine mammals and birds at sea, they would equally reduce the risk of injury and disturbance to marine turtles and other larger mobile receptors, such as basking sharks. 	<p>Volume 7, Appendix 7.1 PEMP (Project Environmental Management Plan)</p> <p>Volume 7, Appendix 7.4 MMMP (Marine Megafauna Mitigation Plan)</p>
	Programme survey and installation works associated with a species project to reduce potential for noisy or other disturbing activities to occur at the same time	Site/cable route selection stage. Project design stage. EIA stage.	<p>Survey and installation works will be scheduled to ensure that all relevant environmental standards are adhered to as set out in the EIAR.</p> <p>The proposed development, including the offshore infrastructure has been designed using the most appropriate and best available design information (refer to Volume 2, Chapter 6 Project Description). As outlined therein, the Applicant commits to the implementation of at-source noise mitigation methods (e.g. bubble curtains, casings, resonators) to reduce the source level of the underwater noise from pile driving by at least 10 decibels (dB). The Applicant also commits to no simultaneous (concurrent) piling of foundations to avoid and minimise impacts.</p> <p>Avoidance and preventative measures were identified throughout the early development phase of the proposed development, also to avoid and prevent likely significant effects to receptors, which go beyond design features. These measures were incorporated as constituent elements of the proposed development, they are referenced in the project description chapter of this EIAR and they form part of the project for which planning permission is being sought. These measures are distinct from design features and are found within the suite of management plans included in Volume 7 Planning Stage Plans of the EIAR.</p> <p>Volume 7, Appendix 7.4 Marine Megafauna Mitigation Plan (MMMP) is the primary mitigation tool for marine mammals and supports the consent application for the proposed development. The MMMP should be read alongside the Environmental Vessel Management Plan (EVMP)(within Volume 7, Appendix 7.1 PEMP), which includes avoidance and preventative measures against certain impacts relating to vessels.</p> <p>Volume 7, Appendix 7.1 PEMP (Project Environmental Management Plan) provides the framework within which appropriate environmental management practices will be applied. A code of conduct will be implemented by all</p>	<p>Volume 3, Chapter 4 Fish and Shellfish Ecology</p> <p>Volume 7, Appendix 7.1 PEMP (Project Environment Management Plan)</p> <p>Volume 7, Appendix 7.4 MMMP (Marine Megafauna Mitigation Plan)</p>

Potential Effect	Suggested Project Level Mitigation Measures in OREDP	Timescale	Dublin Array Response	Application Reference (contained with Environmental Impact Assessment Report)
			vessel operators when encountering marine species. In addition, vessel movements to and from construction sites and ports will, where feasible, follow existing routes. While these measures are primarily targeted towards marine mammals and birds at sea, they would equally reduce the risk of injury and disturbance to marine turtles and other larger mobile receptors, such as basking sharks.	
	Programme survey and development installation works for a number of projects to reduce potential for installation periods to coincide with other developments to reduce potential for cumulative effects from developments	Site/cable route selection stage. Project design stage. EIA stage.	As outlined in Volume 3, Chapter 4 Fish and Shellfish Ecology, no significant effects have been identified as a result of the construction of the proposed development alone, or cumulatively with other developments. Additionally, construction phase impacts are addressed through the implementation of a Marine Megafauna Mitigation Plan (MMMP), which also contains mitigations of benefit to fish and shellfish.	Volume 3, Chapter 4 Fish and Shellfish Ecology Volume 7, Appendix 7.4 Marine Megafauna Mitigation Plan (MMMP)
	Programme maintenance works to avoid sensitive seasons e.g. breeding and migration	Site/cable route selection stage. Project design stage. EIA stage.	As outlined in Volume 3, Chapter 4 Fish and Shellfish Ecology, no significant effects have been identified as a result of the operation and maintenance of the proposed development alone, or cumulatively with other developments.	Volume 3, Chapter 4 Fish and Shellfish Ecology Volume 7, Appendix 7.4 Marine Megafauna Mitigation Plan (MMMP)
Smothering	Avoid sensitive sites / species / periods	Project design stage. EIA stage. Project installation.	Bedform clearance operations will only be carried out only when necessary, thereby reducing sediment disturbance and minimising changes to seabed morphology. The potential overlap with spawning or nursery areas within the fish and shellfish study area is considered negligible, particularly since the highest Suspended Sediment Concentration (SSC) will occur within 1 km of the activities. Beyond this distance, SSC levels will decrease rapidly as the plume disperses. Given the mobile nature of most fish species (except sandeel) and the small size of the spawning areas relative to the area affected by increased SSC, it is expected that individuals will be able to avoid the impacted area if needed. The impact will remain well within the tolerance limits of all species, with no effect on overall spawning efficacy. Additionally, there will be ample alternative suitable habitats available to ensure that any effects are negligible.	Volume 3, Chapter 4 Fish and Shellfish Ecology
Noise	Implementation of the NPWS Code of Practice for the Protection of Marine Mammals during Acoustic Seafloor Surveys in Irish Waters. This applies to all activities licensed under the Foreshore Consent and other activities such as geophysical surveys which also require consent under the Wildlife Act and Habitats Directive	Survey Project design stage. EIA stage. Project installation. Project Operation and Maintenance.	A Marine Megafauna Mitigation Plan (MMMP) has been developed to outline the necessary project design features and avoidance and preventative measures to minimise impacts on marine mammals during the construction and operation of the offshore infrastructure. The MMMP will be implemented by the Applicant and its appointed contractor(s), and it will be secured through conditions of the proposed development's consent. The MMMP will remain a live document, updated as required, and will be submitted to the relevant authority prior to the commencement of construction.	Volume 7, Appendix 7.4 Marine Megafauna Mitigation Plan (MMMP)

Potential Effect	Suggested Project Level Mitigation Measures in OREDP	Timescale	Dublin Array Response	Application Reference (contained with Environmental Impact Assessment Report)
	Adherence to IWDG recommendations to minimise impacts on marine mammals (Irish Whale and Dolphin Group 2005)	Survey Project design stage. EIA stage. Project installation. Project Operation and Maintenance.	<p>The proposed development, including the offshore infrastructure has been designed using the most appropriate and best available design information (refer to Volume 2, Chapter 6 Project Description). As outlined therein, the Applicant commits to the implementation of at-source noise mitigation methods (e.g. bubble curtains, casings, resonators) to reduce the source level of the underwater noise from pile driving by at least 10 decibels (dB). The Applicant also commits to no simultaneous (concurrent) piling of foundations to avoid and minimise impacts.</p> <p>Avoidance and preventative measures were identified throughout the early development phase of the proposed development, also to avoid and prevent likely significant effects to receptors, which go beyond design features. These measures were incorporated as constituent elements of the proposed development, they are referenced in the project description chapter of this EIAR and they form part of the project for which planning permission is being sought. These measures are distinct from design features and are found within the suite of management plans included in Volume 7 Planning Stage Plans of the EIAR.</p>	<p>Volume 7, Appendix 7.4 Marine Megafauna Mitigation Plan (MMMP)</p> <p>Volume 2, Chapter 6 Project Description</p>
	Undertaking studies to determine site specific noise effects	Survey Project design stage. EIA stage. Project installation. Project Operation and Maintenance.	<p>An Underwater Noise Assessment was conducted, with the findings presented in Volume 3, Chapter 4 Fish and Shellfish Ecology and Volume 4, Appendix 4.3.5-7 Dublin Array: Underwater noise assessment.</p> <p>Two representative modelling locations were selected locations at opposite corners of the array area (north-west and south-east). At each location, two monopile foundation modelling scenarios were considered. In addition to piling, other noise sources were assessed using a straightforward, high-level modelling approach. These included noise from cable laying, dredging, drilling, rock placement, vessel movements, and operational WTG noise.</p>	<p>Volume 3, Chapter 4 Fish and Shellfish Ecology and</p> <p>Volume 4, Appendix 4.3.5-7 Dublin Array: Underwater noise assessment</p>
	Minimise use of high noise emission activities such as impact piling	Survey Project design stage. EIA stage Project installation. Project Operation and Maintenance.	<p>The proposed development has shown that the offshore infrastructure can be constructed using traditional percussive piling techniques whilst avoiding significant adverse effects on marine mammals (Volume 3, Chapter 5 Marine Mammals). However, as part of its commitment to best practices, the Applicant will continue to explore emerging technologies. If new piling hammer technology that demonstrates a reduction in noise at source becomes available, the proposed development will evaluate and, where feasible, implement the technology.</p> <p>Furthermore, the proposed development, including the offshore infrastructure has been designed using the most appropriate and best available design information (refer to Volume 2, Chapter 6 Project Description). As outlined therein, the Applicant commits to the implementation of at-source noise mitigation methods (e.g. bubble curtains, casings, resonators) to reduce the source level of the underwater noise from pile driving by at least 10 decibels (dB). The Applicant also commits to no simultaneous (concurrent) piling of foundations to avoid and minimise impacts.</p>	<p>Volume 3, Chapter 5 Marine Mammals</p> <p>Volume 7, Appendix 7.4 Marine Megafauna Mitigation Plan (MMMP)</p> <p>Volume 2, Chapter 6 Project Description</p>
	Avoid installation during sensitive periods (breeding and migration)	Survey Project design stage. EIA stage. Project installation. Project Operation and Maintenance.	<p>As part of the early design stages, alternative locations and designs for the proposed development were considered and these are presented in Volume 2, Chapter 5 Consideration of Alternatives. In addition, other avoidance and preventative measures were identified throughout the early development phase of the proposed development, also to avoid and prevent likely significant effects to receptors, which go beyond design features. These measures were incorporated as constituent elements of the proposed development, they are referenced in the project description chapter of this EIAR and they form part of the project for which planning permission is being sought. These measures are distinct from design features and are found within the suite of management plans included in Volume 7 Planning Stage Plans of the EIAR.</p>	<p>Volume 2, Chapter 5 Consideration of Alternatives</p> <p>Volume 7 Planning Stage Plans</p>
	Consider using alternatives (i.e. clump weights, gravity bases, routing cables through soft sandy sediment or use cable protection rather than burial)	Survey Project design stage. EIA stage. Project installation.	<p>Cables have been routed through sediments that are suitable for burial where feasible. Where burial is not possible, cable protection measures will be implemented.</p>	<p>Volume 2, Chapter 6 Project Description</p>

Potential Effect	Suggested Project Level Mitigation Measures in OREDP	Timescale	Dublin Array Response	Application Reference (contained with Environmental Impact Assessment Report)
		Project Operation and Maintenance.		
	“Soft starting” piling activities/passive acoustic deterrents – gradually increasing noise produced to allow fish to move away from activities	Survey Project design stage. EIA stage. Project installation. Project Operation and Maintenance.	The MMMP incorporates the use of a soft-start procedure for pile driving. This involves gradually increasing the piling power over a set time period to reach full capacity. By beginning at a lower power, nearby marine species, including fish, will have the opportunity to move away from the area, thereby reducing the risk of mortality and injury (JNCC, 2010). The MMMP has been developed to comply with all relevant guidance, specifically DAHG (2014); IDWG (2020).	Volume 7, Appendix 7.4 Marine Megafauna Mitigation Plan (MMMP)
	Underwater noise during operation may be beneficial in alerting species to the presence of the device, reducing the risk of collisions. This requires further research.	Survey Project design stage. EIA stage. Project installation. Project Operation and Maintenance.	An Underwater Noise Assessment was conducted, with the findings presented in Volume 3, Chapter 4 Fish and Shellfish Ecology and Volume 4, Appendix 4.3.5-7 Dublin Array Underwater noise assessment. Two representative modelling locations were selected locations at opposite corners of the array area (north-west and south-east). At each location, two monopile foundation modelling scenarios were considered. In addition to piling, other noise sources were assessed using a straightforward, high-level modelling approach. These included noise from cable laying, dredging, drilling, rock placement, vessel movements, and operational WTG noise.	Volume 3, Chapter 4 Fish and Shellfish Ecology and Volume 4, Appendix 4.3.5-7 Dublin Array: Underwater noise assessment
	Noise from operating turbines can be reduced by using isolators. However, this has not been tested over long term and to account for cumulative effects	Survey Project design stage. EIA stage. Project installation. Project Operation and Maintenance	The assessment concludes that there will be no significant noise effects from operational turbines, and therefore no additional project design features and avoidance and preventative measures are proposed.	Volume 3, Chapter 5 Marine Mammals Volume 3 Chapter 4 Fish and Shellfish Ecology
	Use sound insulation on equipment	Survey Project design stage. EIA stage. Project installation. Project Operation and Maintenance.	The assessment concludes that there will be no significant effects from operational turbines, and therefore no additional project design features and avoidance and preventative measures are proposed.	Volume 3, Chapter 5 Marine Mammals
	Use of bubble curtains or other methods to discourage species from entering areas (this is expensive and may only be effective in shallow water)	Survey Project design stage. EIA stage. Project installation. Project Operation and Maintenance.	The proposed development has shown that the offshore infrastructure can be constructed using traditional percussive piling techniques whilst avoiding significant adverse effects on marine mammals (Volume 3, Chapter 5 Marine Mammals). However, as part of its commitment to best practices, the Applicant will continue to explore emerging technologies. If new piling hammer technology that demonstrates a reduction in noise at source becomes available, the proposed development will evaluate and, where feasible, implement the technology. Furthermore, the proposed development, including the offshore infrastructure has been designed using the most appropriate and best available design information (refer to Volume 2, Chapter 6 Project Description). As outlined therein, the Applicant commits to the implementation of at-source noise mitigation methods (e.g. bubble curtains, casings, resonators) to reduce the source level of the underwater noise from pile driving by at least 10 decibels	Volume 3, Chapter 5 Marine Mammals Volume 7, Appendix 7.4 Marine Megafauna Mitigation Plan (MMMP) Volume 2, Chapter 6 Project Description

Potential Effect	Suggested Project Level Mitigation Measures in OREDP	Timescale	Dublin Array Response	Application Reference (contained with Environmental Impact Assessment Report)
			(dB). The Applicant also commits to no simultaneous (concurrent) piling of foundations to avoid and minimise impacts.	
	Investigate options for the use of acoustic deterrents (where suitable) or other disturbance devices to scare sensitive species away	Survey Project design stage. EIA stage. Project installation. Project Operation and Maintenance.	The proposed development outlines the use of acoustic deterrent devices (ADDs) in the MMMP (Volume 7, Part 4). It is essential that where ADDs are used, the duration of their use is balanced against the increased disturbance impact to marine mammals caused by their use. Consequently, when ADDs are employed for mitigation, the activation duration will be limited to a 15 minute period immediately prior to the commencement of piling. This will allow any undetected animals to leave the area before the start of piling activities.	Volume 7, Appendix 7.4 Marine Megafauna Mitigation Plan (MMMP)
	Use of passive acoustic monitoring, if calibrated and available, to facilitate implementation of exclusion area during noisy activities	Survey Project design stage. EIA stage. Project installation. Project Operation and Maintenance.	The MMMP (Volume 7, Part 4) includes the commitment to implement pre-piling PAM, as the proposed development will require piling during periods of limited visibility and at night. Specifically, PAM will be used to monitor the extent of the Mitigation Zone prior to piling start up during poor periods of visibility, or during night time operations. This will be necessary if there is a break greater than 10 minutes during darkness or if piling activities commence during darkness. If the PAM is unavailable during this period, the operations would need to wait until daylight. The PAM would be used in the same way as visual observations prior to the start of piling activity.	Volume 7, Appendix 7.4 Marine Megafauna Mitigation Plan (MMMP)
	Time noisy activities for individual developments to avoid cumulative effect	Survey Project design stage. EIA stage. Project installation. Project Operation and Maintenance.	Significant effects, both individually and cumulatively, on marine mammals have not been identified following the implementation of appropriate mitigations measures outlined in the MMMP (Volume 7, Appendix 7.4). The conclusion is that no significant effects are anticipated, and therefore, there is no need for programming of activities between proposed developments.	Volume 3, Chapter 5 Marine Mammals Volume 7, Appendix 7.4 Marine Megafauna Mitigation Plan (MMMP)
Collision	Design device to minimise risk of collision	Site/cable route selection stage. Project design stage. EIA stage. Project Installation. Project operation and maintenance.	Vessels will adhere to predefined routes and travel at reduced speeds to minimise the risk of accidental vessel collisions wherever possible. A Vessel Management Plan (within Volume 7, Appendix 7.6) has been included to establish vessel routing to and from construction sites and ports, as well as to include a code of conduct for vessel operators. The Vessel Management Plan will be used to determine vessel routing to and from construction sites and ports, to include a code of conduct for vessel operators, and the types and specifications of vessels to be used for the construction and operation of the offshore infrastructure.	Volume 7, Appendix 7.6 Dublin Array Offshore Wind Farm Vessel Management Plan
	Do not site devices in particularly sensitive areas – e.g. migration routes, feeding, breeding areas or near to main haul routes	Site/cable route selection stage. Project design stage. EIA stage.	Project design has been informed by an environmental impact assessment and equally commits to a comprehensive range of mitigation measures as set out in Volume 8, Chapter 2 Schedule of Commitments.	Volume 8, Chapter 2 Schedule of Commitments

Potential Effect	Suggested Project Level Mitigation Measures in OREDP	Timescale	Dublin Array Response	Application Reference (contained with Environmental Impact Assessment Report)
		Project Installation. Project operation and maintenance.		
	Increase device visibility, or use of acoustic deterrent devices	Site/cable route selection stage. Project design stage. EIA stage. Project Installation. Project operation and maintenance.	<p>The MMMP (Volume 7, Appendix 7.4) outlines measures to mitigate the cumulative auditory injury (PTS) risk from pile driving activities, aiming to reduce it to negligible levels. These measures include:</p> <ul style="list-style-type: none"> ▪ The use of acoustic deterrent devices (ADDs) in specific circumstances to move marine mammals away from the immediate vicinity of the pile. ▪ The implementation of noise abatement methods at the source. ▪ The consideration of alternative piling methods. <p>The final version of the piling MMMP, incorporating the relevant project design features and avoidance and preventative measures, will be provided after consent, once a piling contractor is appointed and detailed installation methods are confirmed.</p>	Volume 7, Appendix 7.4 Marine Megafauna Mitigation Plan (MMMP)
	Seasonal restrictions could be placed on operation to avoid impacting on marine mammals at vulnerable times such as breeding season	Site/cable route selection stage. Project design stage. EIA stage. Project Installation. Project operation and maintenance.	Following the implementation of appropriate mitigations measures outlined in the MMMP (Volume 7, Appendix 7.4), no significant effects have been identified regarding disturbance during the operational phase of the proposed development. Therefore, there are no specific seasons that require avoidance due to sensitivity concerns.	Volume 7, Appendix 7.4 Marine Megafauna Mitigation Plan (MMMP)
	Soften collision by adding smooth edges or padding	Site/cable route selection stage. Project design stage. EIA stage. Project Installation. Project operation and maintenance.	In the context of Offshore Renewable Energy (ORE), this suggested mitigation is only applicable to tidal turbines, thus not applicable with regard to the proposed development.	Not Applicable
	Use of protective screens to prevent marine organisms (fish) from entering the device (i.e. shrouded turbines)	Site/cable route selection stage. Project design stage. EIA stage.	In the context of Offshore Renewable Energy (ORE), this suggested mitigation is only applicable to tidal turbines, thus not applicable with regard to the proposed development.	Not Applicable

Potential Effect	Suggested Project Level Mitigation Measures in OREDP	Timescale	Dublin Array Response	Application Reference (contained with Environmental Impact Assessment Report)
		Project Installation. Project operation and maintenance.		
	Use of protective netting or grids	Site/cable route selection stage. Project design stage. EIA stage. Project Installation Project operation and maintenance.	In the context of Offshore Renewable Energy (ORE), this suggested mitigation is only applicable to tidal turbines, thus not applicable with regard to the proposed development.	Not Applicable
Hydraulic injury	Use of protective screens to prevent marine organisms from entering the device (i.e. shrouded turbines)	Site/cable route selection stage. Project design stage. EIA stage. Project operation.	In the context of Offshore Renewable Energy (ORE), this suggested mitigation is only applicable to tidal turbines, thus not applicable with regard to the proposed development.	Not Applicable
	Do not site devices in particularly sensitive areas – e.g. migration routes, feeding, breeding areas	Site/cable route selection stage. Project design stage. EIA stage. Project operation.	WTG layouts have been designed in a manner which maximises the potential for coexistence with a minimum turbine separation distance of 944 metres subject to any micrositeing necessary based on local seabed conditions.	Volume 2, Chapter 6 Project Description
Accidental contamination (hydraulic fluids or vessel fuel/cargo)	Design devices to minimise risk of leakage of pollutants	Project design stage. EIA stage. Project installation. Project operation and maintenance.	Volume 7, Appendix 7.1 PEMP (Project Environmental Management Plan) is a plan developed to ensure that appropriate environmental management practices are followed throughout the lifetime of the proposed development. The PEMP provides the framework within which appropriate environmental management practices will be applied including but not limited to matters such as; <ul style="list-style-type: none"> ▪ A marine pollution contingency plan to address the risks, methods and procedures to deal with any spills and collision incidents of the authorised proposed development in relation to all activities carried out below MHWS; ▪ A chemical risk review to include information regarding how and when chemicals (including vessel fuels) are to be used, stored and transported in accordance with recognised best practice guidance and national and international regulations and commitments; ▪ A marine biosecurity plan detailing how the risk of introduction and spread of invasive alien species will be minimised; ▪ Waste management and disposal arrangements; ▪ An environmental vessel management plan, to determine vessel routing to and from construction sites and ports, to include a code of conduct for vessel operators; and ▪ Dropped object plan for reporting and recovery of dropped objects where they pose a potential hazard to other marine users. 	Volume 7, Appendix 7.1 PEMP (Project Environmental Management Plan)

Potential Effect	Suggested Project Level Mitigation Measures in OREDP	Timescale	Dublin Array Response	Application Reference (contained with Environmental Impact Assessment Report)
	Risk assessment and contingency planning	Project design stage. EIA stage. Project installation. Project operation and maintenance.	Volume 7, Appendix 7.1 PEMP (Project Environmental Management Plan) is a plan developed to ensure that appropriate environmental management practices are followed throughout the lifetime of the proposed development. The PEMP provides the framework within which appropriate environmental management practices will be applied, and includes a marine pollution contingency plan to address the risks, methods and procedures to deal with any spills and collision incidents of the authorised proposed development in relation to all activities carried out below MHWS. It also includes details of a chemical risk review to include information regarding how and when chemicals (including vessel fuels) are to be used, stored and transported in accordance with recognised best practice guidance and national and international regulations and commitments.	Volume 7, Appendix 7.1 PEMP (Project Environmental Management Plan)
	Design to reduce risk	Project design stage. EIA stage. Project installation. Project operation and maintenance.	All materials used in the operation and maintenance of the offshore infrastructure will be certified as safe for use in the marine environment. Given that antifouling paints, along with other potential contaminants, are commonly used by existing infrastructure and vessels in the area, detectable increases in potential contaminants from the construction phase are considered unlikely. Volume 7, Appendix 7.1 PEMP (Project Environmental Management Plan) is a plan developed to ensure that appropriate environmental management practices are followed throughout the lifetime of the proposed development. The PEMP provides the framework within which appropriate environmental management practices will be applied, and includes a marine pollution contingency plan to address the risks, methods and procedures to deal with any spills and collision incidents of the authorised proposed development in relation to all activities carried out below MHWS. It also includes details of a chemical risk review to include information regarding how and when chemicals (including vessel fuels) are to be used, stored and transported in accordance with recognised best practice guidance and national and international regulations and commitments.	Volume 7, Appendix 7.1 PEMP (Project Environmental Management Plan)
	Avoid shipping routes where collision risk is high	Project design stage. EIA stage. Project installation. Project operation and maintenance.	Vessels will adhere to predefined routes and travel at reduced speeds to minimise the risk of accidental vessel collisions wherever possible. A Project Environmental Management Plan (PEMP) incorporating an Environmental Vessel Management Plan (within Volume 7, Appendix 1 Project Environmental Management Plan). In addition a Vessel Management Plan (VMP)(within Volume 7, Appendix 7.6 Dublin Array Wind Farm Vessel Management Plan has been included to establish vessel routing to and from construction sites and ports, as well as to include a code of conduct for vessel operators. The EVMP within the PEMP will be used to determine vessel routing to and from construction sites and ports, to include a code of conduct for vessel operators, and the types and specifications of vessels to be used for the construction and operation of the offshore infrastructure. The Vessel Management Plan (VMP) accompanies the Planning Application (Volume 7, Appendix 7.6) and outlines measures being implemented to avoid collision risk, including outlining designated routes to/from array area for vessels associated with the proposed development which avoid crossing main routes at the south west corner of the site.	Volume 7, Appendix 7.1 Project Environmental Management Plan Volume 7, Appendix 7.6 Dublin Array Wind Farm Vessel Management Plan
	Implementation of SOPEP (Shipboard Oil Pollution Emergency Plan)	Project design stage. EIA stage. Project installation. Project operation and maintenance	A PEMP has been developed to ensure that appropriate controls are implemented to manage environmental risks associated with the construction and operation of the offshore infrastructure. The plan sets out environmental procedures to be adhered to throughout the construction and operation phase, in line with legislative requirements and industry best practices. The PEMP includes a Marine Pollution Prevention and Contingency Plan, detailing the steps to be taken in the event of a marine pollution incident arising from the operations relating to the proposed development. It also contains a chemical risk review to include information regarding how and when chemicals (including vessel fuels) are to be used, stored and transported in accordance with recognised best practice guidance and national and international regulations and commitments.	Volume 7,Appendix 7.1 PEMP (Project Environmental Management Plan)
Habitat exclusion	No specific mitigation identified	Site/cable route selection stage.	Noted – no specific project design features and avoidance and preventative measures have been identified.	Not applicable

Potential Effect	Suggested Project Level Mitigation Measures in OREDP	Timescale	Dublin Array Response	Application Reference (contained with Environmental Impact Assessment Report)
		Project design stage. EIA stage		
Substratum loss	Avoid sensitive sites/species	Site/cable route selection stage. Project design stage. EIA stage	<p>As part of the early design stages, alternative locations and designs for the proposed development were considered and these are presented in Volume 2, Chapter 5 Consideration of Alternatives. In addition, other avoidance and preventative measures were identified throughout the early development phase of the proposed development, also to avoid and prevent likely significant effects to receptors, which go beyond design features. These measures were incorporated as constituent elements of the proposed development, they are referenced in the project description chapter of this EIAR and they form part of the project for which planning permission is being sought. These measures are distinct from design features and are found within the suite of management plans included in Volume 7 Planning Stage Plans of the EIAR.</p> <p>Bedform clearance operations will only be carried out only when necessary, thereby reducing sediment disturbance and minimising changes to seabed morphology. The potential overlap with spawning or nursery areas within the fish and shellfish study area is considered negligible, particularly since the highest Suspended Sediment Concentration (SSC) will occur within 1 km of the activities. Beyond this distance, SSC levels will decrease rapidly as the plume disperses.</p> <p>Given the mobile nature of most fish species (except sandeel) and the small size of the spawning areas relative to the area affected by increased SSC, it is expected that individuals will be able to avoid the impacted area if needed. The impact will remain well within the tolerance limits of all species, with no effect on overall spawning efficacy. Additionally, there will be ample alternative suitable habitats available to ensure that any effects are negligible.</p>	<p>Volume 3, Chapter 4 Fish and Shellfish Ecology</p> <p>Volume 2, Chapter 5 Consideration of Alternatives</p> <p>Volume 7 Planning Stage Plans</p>
	Site specific surveys to establish a baseline and inform the impact assessment for individual developments	Site/cable route selection stage. Project design stage. EIA stage.	Site-specific characterisation surveys were conducted across the Dublin Array fish and shellfish ecology study area in 2002 (results summarised in Ecoserve, 2008) and 2019 (Aquafact, 2019). These were designed to provide an understanding of the function of the Kish and Bray Banks in relation to the local fisheries resource. The fish and shellfish ecology assessment is also informed by data collected during site-specific grab, Drop-Down Video (DDV) and dredge surveys (Aquafact, 2018; Ecoserve, 2008 and Fugro, 2021 (Volume 4, Appendix 3.3-4), which were used to complement the description of fish and shellfish resources in the study area and to identify potential suitable spawning grounds for sandeels (<i>Ammodytes</i> spp.) and Atlantic herring (<i>Clupea harengus</i>). In addition, a detailed desktop review has been carried out to inform the baseline characterisation of fish and shellfish resources within the study area. Information was obtained on fish and shellfish ecology in general, on spawning and nursery behaviour and habitats of key species. The results of the surveys and desktop review are provided in Volume 3, Chapter 4 Fish and Shellfish Ecology.	Volume 3, Chapter 4 Fish and Shellfish Ecology
	Workshops with expert representatives from the Marine Institute, BIM, NPWS, industry and other appropriate bodies	Site/cable route selection stage. Project design stage. EIA stage.	Consultation was carried out with the Marine Institute, Bord Iascaigh Mhara (BIM), the Department of Housing, Local Government and Heritage (DHLGH), the Sea Fisheries Protection Authority (SFPA), and Inland Fisheries Ireland (IFI). Details can be found in Volume 3, Chapter 4 Fish and Shellfish Ecology.	Volume 3, Chapter 4 Fish and Shellfish Ecology
Changes in wave and tidal regime	Avoid sensitive sites/species/ periods	Site/cable route selection stage. Project design stage. EIA stage.	As part of the early design stages, alternative locations and designs for the proposed development were considered and these are presented in Volume 2, Chapter 5 Consideration of Alternatives. In addition, other avoidance and preventative measures were identified throughout the early development phase of the proposed development, also to avoid and prevent likely significant effects to receptors, which go beyond design features. These measures were incorporated as constituent elements of the proposed development, they are referenced in the project description chapter of this EIAR and they form part of the project for which planning permission is being sought. These measures are distinct from design features and are found within the suite of management plans included in Volume 7 Planning Stage Plans of the EIAR.	<p>Volume 3, Chapter 4 Fish and Shellfish Ecology</p> <p>Volume 2, Chapter 5 Consideration of Alternatives</p> <p>Volume 7 Planning Stage Plans</p>

Potential Effect	Suggested Project Level Mitigation Measures in OREDP	Timescale	Dublin Array Response	Application Reference (contained with Environmental Impact Assessment Report)
			<p>Bedform clearance operations will only be carried out only when necessary, thereby reducing sediment disturbance and minimising changes to seabed morphology. The potential overlap with spawning or nursery areas within the fish and shellfish study area is considered negligible, particularly since the highest Suspended Sediment Concentration (SSC) will occur within 1 km of the activities. Beyond this distance, SSC levels will decrease rapidly as the plume disperses.</p> <p>Given the mobile nature of most fish species (except sandeel) and the small size of the spawning areas relative to the area affected by increased SSC, it is expected that individuals will be able to avoid the impacted area if needed. The impact will remain well within the tolerance limits of all species, with no effect on overall spawning efficacy. Additionally, there will be ample alternative suitable habitats available to ensure that any effects are negligible.</p>	
Barrier to movement	Detailed studies to identify location of key migration corridors and sensitive habitats	Site/cable route selection stage. Project design stage EIA stage.	Through consultation with both statutory and non-statutory organisations, various data sources have been considered sufficient to establish a baseline for fish and shellfish ecology, enabling a robust impact assessment. A thorough desk-based review was conducted to inform the baseline for fish and shellfish ecology, which can be found in Volume 3, Chapter 4 Fish and Shellfish Ecology and Volume 4, Appendix 4.3.4-1 Technical Baseline Report - Fish and Shellfish Ecology.	Volume 3, Chapter 4 Fish and Shellfish Ecology Volume 4, Appendix 4.3.4-1 Technical Baseline Report - Fish and Shellfish Ecology
	Avoid large installations in migratory corridors	Site/cable route selection stage. Project design stage. EIA stage.	As part of the early design stages, alternative locations and designs for the proposed development were considered and these are presented in Volume 2, Chapter 5 Consideration of Alternatives. In addition, other avoidance and preventative measures were identified throughout the early development phase of the proposed development, also to avoid and prevent likely significant effects to receptors, which go beyond design features. These measures were incorporated as constituent elements of the proposed development, they are referenced in the project description chapter of this EIAR and they form part of the project for which planning permission is being sought. These measures are distinct from design features and are found within the suite of management plans included in Volume 7 Planning Stage Plans of the EIAR.	Volume 3, Chapter 4 Fish and Shellfish Ecology Volume 2, Chapter 5 Consideration of Alternatives Volume 7 Planning Stage Plans
	Avoid installation of a number of developments on migratory corridors	Site/cable route selection stage. Project design stage EIA stage	<p>Migratory movements occur across broad geographic areas, and the WTG array occupies only a very small portion of these areas.</p> <p>As part of the early design stages, alternative locations and designs for the proposed development were considered and these are presented in Volume 2, Chapter 5 Consideration of Alternatives. In addition, other avoidance and preventative measures were identified throughout the early development phase of the proposed development, also to avoid and prevent likely significant effects to receptors, which go beyond design features. These measures were incorporated as constituent elements of the proposed development, they are referenced in the project description chapter of this EIAR and they form part of the project for which planning permission is being sought. These measures are distinct from design features and are found within the suite of management plans included in Volume 7 Planning Stage Plans of the EIAR.</p> <p>The proposed development, including the offshore infrastructure has been designed using the most appropriate and best available design information (refer to Volume 2, Chapter 6 Project Description). As outlined therein, the Applicant commits to no simultaneous (concurrent) piling of foundations to avoid and minimise impacts.</p>	Volume 3, Chapter 4 Fish and Shellfish Ecology and Volume 8, Chapter 3 Schedule of Commitments Volume 7 Planning Stage Plans Volume 2, Chapter 5 Consideration of Alternatives
	Avoid sensitive areas (breeding, feeding and nursery areas)	Site/cable route selection stage. Project design stage. EIA stage	<p>Migratory movements occur across broad geographic areas, with the WTG array occupying only a very small proportion of these areas.</p> <p>The locations of offshore infrastructure have been carefully selected to avoid known sensitive ecological habitats. The WTG layout options have been designed to avoid or minimise interaction with areas of high fishing density, where possible. Where avoidance is not feasible, the layouts have been developed to promote coexistence and minimise potential conflicts.</p> <p>As part of the early design stages, alternative locations and designs for the proposed development were considered and these are presented in Volume 2, Chapter 5 Consideration of Alternatives. In addition, other avoidance and preventative measures were identified throughout the early development phase of the proposed</p>	Volume 8, Chapter 3 Schedule of Commitments Volume 7 Planning Stage Plans Volume 2, Chapter 5 Consideration of Alternatives

Potential Effect	Suggested Project Level Mitigation Measures in OREDP	Timescale	Dublin Array Response	Application Reference (contained with Environmental Impact Assessment Report)
			development, also to avoid and prevent likely significant effects to receptors, which go beyond design features. These measures were incorporated as constituent elements of the proposed development, they are referenced in the project description chapter of this EIAR and they form part of the project for which planning permission is being sought. These measures are distinct from design features and are found within the suite of management plans included in Volume 7 Planning Stage Plans of the EIAR.	
	Avoid placement of devices within constrained areas where array could completely block or cause a significant perceptual barrier to fish	Site/cable route selection stage. Project design stage. EIA stage.	Dublin Array is proposed on and around the Kish and Bray Banks which are located approximately 10 kilometers (km) from shore, immediately southeast of the city of Dublin, off the coast of counties Dublin and Wicklow, in an area that is not considered constrained.	Volume 2, Chapter 6 Project Description
EMF	Cable configuration and orientation can reduce field strength	Project design stage. EIA stage.	As outlined within Volume 2, Chapter 6 Project Description, offshore cables will, where possible, be buried in the seabed to the optimal performance burial depth for the specific ground conditions. Where optimum burial depth cannot be achieved secondary protection measure will be deployed e.g. concrete mattress, rock berm, grout bags or an equivalent in key areas. Burial of cables will provide shielding for any E fields generated.	Volume 2, Chapter 6 Project Description
	Cable burial, where possible to minimise field effect at the seabed	Project design stage. EIA stage.	As outlined within Volume 2, Chapter 6 Project Description, offshore cables will, where possible, be buried in the seabed to the optimal performance burial depth for the specific ground conditions. Where optimum burial depth cannot be achieved secondary protection measure will be deployed e.g. concrete mattress, rock berm, grout bags or an equivalent in key areas. Burial of cables will provide shielding for any E fields generated.	Volume 2, Chapter 6 Project Description
Marine Birds				
Physical disturbance	Surveys to identify key breeding and foraging sites, moulting and migration	Site/cable route selection stage Project design stage. EIA stage. Project Installation Operation.	<p>Several site-specific surveys have been conducted, with details available in Volume 3, Chapter 6 Offshore and Intertidal Ornithology and Volume 4, Appendix 4.3.6-1 Technical Baseline Report – Ornithology.</p> <p>Site-specific boat-based surveys were undertaken in the offshore study area on a monthly basis between June 2019 and April 2021, with the exception of February and March 2020 (unsuitable weather conditions) and April 2020 (Covid-19 restrictions). Additional surveys were undertaken in May 2020, March 2021 and April 2021. Data were collected along 13 transects spaced 2 km apart and aligned east-west across the study area. Two surveys were conducted in both August and September 2019 to provide additional coverage of post breeding seabird activity and distribution. In addition, two surveys were conducted in May 2020, and also in March and April 2021.</p> <p>As recommended in the DCCAE 2018 Guidance Part B, the methods used to conduct the baseline seabird surveys followed standard COWRIE approved survey methodology (Camphuysen et al., 2004). The suitability of boat-based surveys in comparison to aerial surveys to inform assessments for OWFs was assessed in the COWRIE method review, where it was concluded that the methods provide similar data as far as seabird counts are concerned. Census techniques are similar, but the level of detail for individual bird behaviour is less during aerial surveys.</p>	<p>Volume 3, Chapter 6 Offshore and Intertidal Ornithology</p> <p>Volume 4, Appendix 4.3.6-1 Technical Baseline Report – Ornithology</p>
	Where development occurs near to sensitive sites/areas avoid installation during sensitive		As part of the early design stages, avoidance and preventative measures were identified throughout the early development phase of the proposed development, also to avoid and prevent likely significant effects to receptors, which go beyond design features. These measures were incorporated as constituent elements of the proposed development, they are referenced in the project description chapter of this EIAR and they form part of the project for which planning permission is being sought. These measures are distinct from design features and are found within the suite of management plans included in Volume 7 Planning Stage Plans of the EIAR. Additional project	<p>Volume 3, Chapter 6 Offshore and Intertidal Ornithology</p> <p>Volume 8, Chapter 3 Schedule of Commitments</p> <p>Volume 7 Planning Stage Plans</p>

Potential Effect	Suggested Project Level Mitigation Measures in OREDP	Timescale	Dublin Array Response	Application Reference (contained with Environmental Impact Assessment Report)
	seasons (i.e. breeding and moulting)		design features and avoidance and preventative measures related to the installation of export cables and onshore infrastructure within the nearshore, intertidal, and landfall areas are detailed in Volume 8, Part 3 Schedule of Commitments.	
	Programme survey and installation works associated with a species project to reduce potential for noisy or other disturbing activities to occur at the same time	Site/cable route selection stage. Project design stage. EIA stage. Project Installation Operation.	Survey activities will be scheduled to avoid overlap with other noisy operations, as concurrent noise-generating activities could compromise data quality. The proposed development, including the offshore infrastructure has been designed using the most appropriate and best available design information (refer to Volume 2, Chapter 6 Project Description). As outlined therein, the Applicant commits to the implementation of at-source noise mitigation methods (e.g. bubble curtains, casings, resonators) to reduce the source level of the underwater noise from pile driving by at least 10 decibels (dB). The Applicant also commits to no simultaneous (concurrent) piling of foundations to avoid and minimise impacts.	Volume 3, Chapter 6 Offshore and Intertidal Ornithology Volume 2, Chapter 6 Project Description
	Programme survey and development installation works for a number of projects to reduce potential for installation periods to coincide with other developments to reduce potential for cumulative effects from developments	Site/cable route selection stage. Project design stage. EIA stage. Project Installation Operation.	A Cumulative Effects Assessment has been completed and is detailed in Volume 3, Chapter 6 Offshore and Intertidal Ornithology. The assessment concludes that no significant effects are anticipated, eliminating the need for programming of activities across proposed developments.	Volume 3, Chapter 6 Offshore and Intertidal Ornithology
	Programme maintenance works to avoid sensitive seasons e.g. breeding	Site/cable route selection stage Project design stage. EIA stage. Project Installation Operation.	As part of the early design stages, alternative locations and designs for the proposed development were considered and these are presented in Volume 2, Chapter 5 Consideration of Alternatives. In addition, other avoidance and preventative measures were identified throughout the early development phase of the proposed development, also to avoid and prevent likely significant effects to receptors, which go beyond design features. These measures were incorporated as constituent elements of the proposed development, they are referenced in the project description chapter of this EIAR and they form part of the project for which planning permission is being sought. These measures are distinct from design features and are found within the suite of management plans included in Volume 7 Planning Stage Plans of the EIAR.	Volume 3, Chapter 6 Offshore and Intertidal Ornithology Volume 8, Part 2 Schedule of Commitments Volume 7 Planning Stage Plans Volume 2, Chapter 5 Consideration of Alternatives.
	Avoid sensitive sites/areas where possible (i.e. SPAs)	Site/cable route selection stage. Project design stage. EIA stage. Project Installation Operation.	As part of the early design stages, alternative locations and designs for the proposed development were considered and these are presented in Volume 2, Chapter 5 Consideration of Alternatives. As a result, no SPAs overlap with the planning application boundary.	Part 4 Habitats Directive Assessments Volume 2, Chapter 5 Consideration of Alternatives
	Site-specific surveys at project level to identify the presence of key foraging hotspots and/or resting areas and to aid site selection	Site/cable route selection stage. Project design stage. EIA stage.	Several site-specific surveys have been conducted, with details available in Volume 3, Chapter 6 Offshore and Intertidal Ornithology and Volume 4, Appendix 4.3.6-1 Technical Baseline Report – Ornithology. Site-specific boat-based surveys were undertaken in the offshore study area on a monthly basis between June 2019 and April 2021, with the exception of February and March 2020 (unsuitable weather conditions) and April 2020 (Covid-19 restrictions). Additional surveys were undertaken in May 2020, March 2021 and April 2021.	Volume 3, Chapter 6 Offshore and Intertidal Ornithology Volume 4, Appendix 4.3.6-1 Technical Baseline Report – Ornithology

Potential Effect	Suggested Project Level Mitigation Measures in OREDP	Timescale	Dublin Array Response	Application Reference (contained with Environmental Impact Assessment Report)
		Project Installation Operation.	<p>Data were collected along 13 transects spaced 2 km apart and aligned east-west across the study area. Two surveys were conducted in both August and September 2019 to provide additional coverage of post breeding seabird activity and distribution. In addition, two surveys were conducted in May 2020, and also in March and April 2021.</p> <p>As recommended in the DCCAE 2018 Guidance Part B, the methods used to conduct the baseline seabird surveys followed standard COWRIE approved survey methodology (Camphuysen et al., 2004). The suitability of boat-based surveys in comparison to aerial surveys to inform assessments for OWFs was assessed in the COWRIE method review, where it was concluded that the methods provide similar data as far as seabird counts are concerned. Census techniques are similar, but the level of detail for individual bird behaviour is less during aerial surveys.</p>	
Displacement	Surveys to identify key breeding and foraging sites and migration routes	Site/cable route selection stage Project design stage. EIA stage. Operation.	<p>Several site-specific surveys have been conducted, with details available in Volume 3, Chapter 6 Offshore and Intertidal Ornithology and Volume 4, Appendix 4.3.6-1 Technical Baseline Report – Ornithology.</p> <p>Site-specific boat-based surveys were undertaken in the offshore study area on a monthly basis between June 2019 and April 2021, with the exception of February and March 2020 (unsuitable weather conditions) and April 2020 (Covid-19 restrictions). Additional surveys were undertaken in May 2020, March 2021 and April 2021.</p> <p>Data were collected along 13 transects spaced 2 km apart and aligned east-west across the study area. Two surveys were conducted in both August and September 2019 to provide additional coverage of post breeding seabird activity and distribution. In addition, two surveys were conducted in May 2020, and also in March and April 2021.</p> <p>As recommended in the DCCAE 2018 Guidance Part B, the methods used to conduct the baseline seabird surveys followed standard COWRIE approved survey methodology (Camphuysen et al., 2004). The suitability of boat-based surveys in comparison to aerial surveys to inform assessments for OWFs was assessed in the COWRIE method review, where it was concluded that the methods provide similar data as far as seabird counts are concerned. Census techniques are similar, but the level of detail for individual bird behaviour is less during aerial surveys.</p>	<p>Volume 3, Chapter 6 Offshore and Intertidal Ornithology</p> <p>Volume 4, Appendix 4.3.6-1 Technical Baseline Report – Ornithology</p>
	Avoid locating developments on key migration routes or in key breeding and foraging areas	Site/cable route selection stage. Project design stage. EIA stage. Operation.	<p>WTG layouts have been designed to avoid or minimise interactions with known areas of high breeding and foraging activity, where feasible. In cases where avoidance is not entirely possible, the layouts have been developed with a focus on maximising the potential for coexistence.</p>	<p>Volume 2, Chapter 5 Consideration of Alternatives</p> <p>Volume 3, Chapter 6 Offshore and Intertidal Ornithology</p> <p>Volume 4, Appendix 4.3.6-1 Technical Baseline Report – Ornithology</p>
	Where development occurs near to sensitive sites/areas avoid installation during sensitive seasons	Site/cable route selection stage. Project design stage. EIA stage. Operation.	<p>As part of the early design stages, avoidance and preventative measures were identified throughout the early development phase of the proposed development, also to avoid and prevent likely significant effects to receptors, which go beyond design features. These measures were incorporated as constituent elements of the proposed development, they are referenced in the project description chapter of this EIAR and they form part of the project for which planning permission is being sought. These measures are distinct from design features and are found within the suite of management plans included in Volume 7 Planning Stage Plans of the EIAR. Additional project design features and avoidance and preventative measures related to the installation of export cables and onshore infrastructure within the nearshore, intertidal, and landfall areas are detailed in Volume 8, Chapter 2 Schedule of Commitments.</p>	<p>Volume 3, Chapter 6 Offshore and Intertidal Ornithology</p> <p>Volume 8, Part 3 Schedule of Measures</p> <p>Volume 7 Planning Stage Plans</p>

Potential Effect	Suggested Project Level Mitigation Measures in OREDP	Timescale	Dublin Array Response	Application Reference (contained with Environmental Impact Assessment Report)
	Programme survey and installation works associated with a species project to reduce potential for noisy or other disturbing activities to occur at the same time	Site/cable route selection stage. Project design stage. EIA stage. Operation.	Survey activities will be scheduled to avoid overlap with other noisy operations, as concurrent noise-generating activities could compromise data quality. The proposed development, including the offshore infrastructure has been designed using the most appropriate and best available design information (refer to Volume 2, Chapter 6 Project Description). As outlined therein, the Applicant commits to the implementation of at-source noise mitigation methods (e.g. bubble curtains, casings, resonators) to reduce the source level of the underwater noise from pile driving by at least 10 decibels (dB). The Applicant also commits to no simultaneous (concurrent) piling of foundations to avoid and minimise impacts.	Volume 3, Chapter 6 Offshore and Intertidal Ornithology Volume 2, Chapter 6 Project Description
	Programme survey and development installation works for a number of projects to reduce potential for installation periods to coincide with other developments to reduce potential for cumulative effects from developments	Site/cable route selection stage. Project design stage. EIA stage. Operation.	A Cumulative Effects Assessment has been carried out and is presented in Volume 3, Chapter 6 Offshore and Intertidal Ornithology. The assessment concludes that no significant effects are anticipated from the proposed development, either individually or in combination with other plans and developments. As a result, there is no need for strategic programme management or avoidance of overlapping survey and offshore infrastructure installation works.	Volume 3, Chapter 6 Offshore and Intertidal Ornithology Volume 7 Planning Stage Plans
	Programme maintenance works to avoid sensitive seasons e.g. breeding	Operation	As part of the early design stages, alternative locations and designs for the proposed development were considered and these are presented in Volume 2, Chapter 5 Consideration of Alternatives. In addition, other avoidance and preventative measures were identified throughout the early development phase of the proposed development, also to avoid and prevent likely significant effects to receptors, which go beyond design features. These measures were incorporated as constituent elements of the proposed development, they are referenced in the project description chapter of this EIAR and they form part of the project for which planning permission is being sought. These measures are distinct from design features and are found within the suite of management plans included in Volume 7 Planning Stage Plans of the EIAR.	Volume 3, Chapter 6 Offshore and Intertidal Ornithology Volume 8, Part 3 Schedule of Measures Volume 7 Planning Stage Plans Volume 2, Chapter 5 Consideration of Alternatives.
Noise	Implementation of the Code of Practice for the Protection of Marine Mammals during Acoustic Seafloor Surveys in Irish Waters. This applies to all activities licensed under the Foreshore Consent and other activities such as geophysical surveys which also require consent under the Wildlife Act and Habitats Directive	Site/cable route selection stage. Project design stage. EIA stage. Operation.	A Marine Megafauna Mitigation Plan (MMMP) has been developed to outline the necessary project design features and avoidance and preventative measures to minimise impacts on marine mammals during the construction and operation of the offshore infrastructure. The MMMP will be implemented by the Applicant and its appointed contractor(s), and it will be secured through conditions of the proposed development's consent. The MMMP will remain a live document, updated as required, and will be submitted to the relevant authority prior to the commencement of construction.	Volume 7, Appendix 7.4 Marine Megafauna Mitigation Plan (MMMP)

Potential Effect	Suggested Project Level Mitigation Measures in OREDP	Timescale	Dublin Array Response	Application Reference (contained with Environmental Impact Assessment Report)
	Minimise use of high noise emission activities such as impact piling or blasting	Site/cable route selection stage. Project design stage. EIA stage. Operation.	<p>The proposed development has shown that the offshore infrastructure can be constructed using traditional percussive piling techniques whilst avoiding significant adverse effects on ornithological receptors (Volume 3, Chapter 6 Offshore and Intertidal Ornithology). However, as part of its commitment to best practices, the Applicant will continue to explore emerging technologies. If new piling hammer technology that demonstrates a reduction in noise at source becomes available, the proposed development will evaluate and, where feasible, implement the technology.</p> <p>Furthermore, the proposed development, including the offshore infrastructure has been designed using the most appropriate and best available design information (refer to Volume 2, Chapter 6 Project Description). As outlined therein, the Applicant commits to the implementation of at-source noise mitigation methods (e.g. bubble curtains, casings, resonators) to reduce the source level of the underwater noise from pile driving by at least 10 decibels (dB). The Applicant also commits to no simultaneous (concurrent) piling of foundations to avoid and minimise impacts.</p>	<p>Volume 3, Chapter 6 Offshore and Intertidal Ornithology</p> <p>Volume 7, Appendix 7.4 Marine Megafauna Mitigation Plan (MMMP)</p> <p>Volume 2, Chapter 6 Project Description</p>
	Avoid installation during sensitive periods (breeding, foraging and migration)	Site/cable route selection stage. Project design stage. EIA stage. Operation.	<p>As part of the early design stages, alternative locations and designs for the proposed development were considered and these are presented in Volume 2, Chapter 5 Consideration of Alternatives. In addition, other avoidance and preventative measures were identified throughout the early development phase of the proposed development, also to avoid and prevent likely significant effects to receptors, which go beyond design features. These measures were incorporated as constituent elements of the proposed development, they are referenced in the project description chapter of this EIAR and they form part of the project for which planning permission is being sought. These measures are distinct from design features and are found within the suite of management plans included in Volume 7 Planning Stage Plans of the EIAR.</p>	<p>Volume 2, Chapter 5 Consideration of Alternatives</p> <p>Volume 7 Planning Stage Plans</p>
	Use full sound insulation on plant equipment device design	Site/cable route selection stage. Project design stage. EIA stage. Operation.	<p>The assessment concludes that there will be no significant effects from operational turbines, and therefore no additional project design features and avoidance and preventative measures are proposed.</p>	<p>Volume 3, Chapter 5 Marine Mammals</p>
	“Soft starting” piling activities/passive acoustic deterrents – gradually increasing noise produced to allow birds to move away from activities	Site/cable route selection stage. Project design stage. EIA stage Operation.	<p>The MMMP incorporates the use of a soft-start procedure for pile driving. This involves gradually increasing the piling power over a set time period to reach full capacity. By beginning at a lower power, nearby marine species, including birds, will have the opportunity to move away from the area, thereby reducing the risk of mortality and injury (JNCC, 2010).</p> <p>As outlined within the MMMP (Volume 7, Appendix 7.4), the following measures will be applied;</p> <ul style="list-style-type: none"> ▪ Procedures for impact piling, which will include: <ul style="list-style-type: none"> – Implementation of a 1000m mitigation zone – pre-piling Marine Mammal Observer (MMO) watches; – pre-piling Passive Acoustic Monitoring (PAM); – Soft start procedure; and – Breaks in piling procedure ▪ Procedures for UXO detonation, which will include: <ul style="list-style-type: none"> – Implementation of a mitigation zone of 1km; – Pre-detonation MMO and PAM; – Soft start charges; – Use of bubble curtains; and – Post detonation searches <p>The MMMP has been developed to comply with all relevant guidance, specifically DAHG (2014); IDWG (2020).</p>	<p>Volume 7, Appendix 7.4 Marine Megafauna Mitigation Plan (MMMP)</p>

Potential Effect	Suggested Project Level Mitigation Measures in OREDP	Timescale	Dublin Array Response	Application Reference (contained with Environmental Impact Assessment Report)
	Consider using alternatives (i.e. clump weights, gravity bases, routing cables through soft sandy sediment or use cable protection rather than burial)	Site/cable route selection stage. Project design stage. EIA stage. Operation.	Cables have been routed through sediments that are suitable for burial where feasible. Where burial is not possible, cable protection measures will be implemented.	Volume 2, Chapter 6 Project Description
	Underwater noise during operation may be beneficial in alerting species to the presence of the device, reducing the risk of collisions. This requires further research	Site/cable route selection stage. Project design stage. EIA stage. Operation.	An Underwater Noise Assessment was conducted, with the findings presented in Volume 3, Chapter 6 Offshore and Intertidal Ornithology and Volume 4, Appendix 4.3.5-7 Dublin Array: Underwater Noise Assessment. Two representative modelling locations were selected locations at opposite corners of the array area (north-west and south-east). At each location, two monopile foundation modelling scenarios were considered. In addition to piling, other noise sources were assessed using a straightforward, high-level modelling approach. These included noise from cable laying, dredging, drilling, rock placement, vessel movements, and operational WTG noise.	Volume 3, Chapter 6 Offshore and Intertidal Ornithology Volume 4, Appendix 4.3.5-7 Dublin Array: Underwater Noise Assessment
	Noise from operating turbines can be reduced by using isolators. However this has not been tested over long term and to account for cumulative effects	Site/cable route selection stage. Project design stage. EIA stage. Operation.	The assessment concludes that there will be no significant noise effects from operational turbines, and therefore no additional project design features and avoidance and preventative measures are proposed.	Volume 3, Chapter 5 Marine Mammals
	Use sound insulation on equipment	Site/cable route selection stage. Project design stage. EIA stage. Operation.	The assessment concludes that there will be no significant effects from operational turbines, and therefore no additional project design features and avoidance and preventative measures are proposed.	Volume 3, Chapter 5 Marine Mammals
	Use of bubble curtains around the piles or other methods to discourage species from entering areas (this is expensive and may only be effective in shallow water)	Site/cable route selection stage. Project design stage. EIA stage. Operation	The proposed development has shown that the offshore infrastructure can be constructed using traditional percussive piling techniques whilst avoiding significant adverse effects on marine mammals (Volume 3, Chapter 5 Marine Mammals). However, as part of its commitment to best practices, the Applicant will continue to explore emerging technologies. If new piling hammer technology that demonstrates a reduction in noise at source becomes available, the proposed development will evaluate and, where feasible, implement the technology. Furthermore, the proposed development, including the offshore infrastructure has been designed using the most appropriate and best available design information (refer to Volume 2, Chapter 6 Project Description). As outlined therein, the Applicant commits to the implementation of at-source noise mitigation methods (e.g. bubble curtains, casings, resonators) to reduce the source level of the underwater noise from pile driving by at least 10 decibels (dB). The Applicant also commits to no simultaneous (concurrent) piling of foundations to avoid and minimise impacts.	Volume 3, Chapter 5 Marine Mammals Volume 7, Appendix 7.4 Marine Megafauna Mitigation Plan (MMMP) Volume 2, Chapter 6 Project Description
	Investigate options for the use of acoustic deterrents (where	Site/cable route selection stage.	The proposed development outlines the use of acoustic deterrent devices (ADDs) in the MMMP (Volume 7, Appendix 7.4). It is essential that where ADDs are used, the duration of their use is balanced against the increased disturbance impact to marine mammals caused by their use. Consequently, when ADDs are employed	Volume 7, Appendix 7.4 Marine Megafauna Mitigation Plan (MMMP)

Potential Effect	Suggested Project Level Mitigation Measures in OREDP	Timescale	Dublin Array Response	Application Reference (contained with Environmental Impact Assessment Report)
	suitable) or other disturbance devices to scare sensitive species away	Project design stage. EIA stage. Operation	for mitigation, the activation duration will be limited to a 15 minute period immediately prior to the commencement of piling. This will allow any undetected animals to leave the area before the start of piling activities.	
	Use of passive acoustic monitoring to facilitate implementation of exclusion area during noisy activities	Site/cable route selection stage. Project design stage. EIA stage. Operation	The MMMP (Volume 7, Appendix 7.4) includes the commitment to implement pre-piling PAM, as the proposed development will require piling during periods of limited visibility and at night. Specifically, PAM will be used to monitor the extent of the Mitigation Zone prior to piling start up during poor periods of visibility, or during nighttime operations. This will be necessary if there is a break greater than 10 minutes during darkness or if piling activities commence during darkness. If the PAM is unavailable during this period, the operations would need to wait until daylight. The PAM would be used in the same way as visual observations prior to the start of piling activity.	Volume 7, Appendix 7.4 Marine Megafauna Mitigation Plan (MMMP)
	Programme developments to reduce potential for adverse cumulative/ in- combination effects e.g. noise from piling or other activities (surveying) from a number of developments to occur at the same time.	Site/cable route selection stage. Project design stage. EIA stage. Operation	<p>Survey and installation works will be scheduled to avoid overlap with other noisy activities.</p> <p>The proposed development, including the offshore infrastructure has been designed using the most appropriate and best available design information (refer to Volume 2, Chapter 6 Project Description). As outlined therein, the Applicant commits to the implementation of at-source noise mitigation methods (e.g. bubble curtains, casings, resonators) to reduce the source level of the underwater noise from pile driving by at least 10 decibels (dB). The Applicant also commits to no simultaneous (concurrent) piling of foundations to avoid and minimise impacts.</p> <p>Avoidance and preventative measures were identified throughout the early development phase of the proposed development, also to avoid and prevent likely significant effects to receptors, which go beyond design features. These measures were incorporated as constituent elements of the proposed development, they are referenced in the project description chapter of this EIAR and they form part of the project for which planning permission is being sought. These measures are distinct from design features and are found within the suite of management plans included in Volume 7 Planning Stage Plans of the EIAR.</p> <p>Volume 7, Appendix 7.4 Marine Megafauna Mitigation Plan (MMMP) is the primary mitigation tool for marine mammals and supports the consent application for the proposed development. The MMMP should be read alongside the Environmental Vessel Management Plan (EVMP)(within Volume 7, Appendix 7.1 PEMP), which includes avoidance and preventative measures against certain impacts relating to vessels. A number of those measures within the MMMP are also applicable to fish and shellfish, including;</p> <ul style="list-style-type: none"> ▪ Procedures for impact piling, which will include: <ul style="list-style-type: none"> – Implementation of a 1000m mitigation zone – pre-piling Marine Mammal Observer (MMO) watches; – pre-piling Passive Acoustic Monitoring (PAM); – Soft start procedure; and – Breaks in piling procedure ▪ Procedures for UXO detonation, which will include: <ul style="list-style-type: none"> – Implementation of a mitigation zone of 1km; – Pre-detonation MMO and PAM; – Soft start charges; – Use of bubble curtains; and – Post detonation searches <p>Volume 7, Appendix 7.1 PEMP (Project Environmental Management Plan) provides the framework within which appropriate environmental management practices will be applied, and includes a code of conduct will be</p>	<p>Volume 3, Chapter 4 Fish and Shellfish Ecology</p> <p>Volume 7, Appendix 7.1 PEMP (Project Environmental Management Plan)</p> <p>Volume 7, Appendix 7.4 MMMP (Marine Megafauna Mitigation Plan)</p>

Potential Effect	Suggested Project Level Mitigation Measures in OREDP	Timescale	Dublin Array Response	Application Reference (contained with Environmental Impact Assessment Report)
			implemented by all vessel operators when encountering marine species. In addition, vessel movements to and from construction sites and ports will, where feasible, follow existing routes. While these measures are primarily targeted towards marine mammals and birds at sea, they would equally reduce the risk of injury and disturbance to marine turtles and other larger mobile receptors, such as basking sharks.	
	Time noisy activities for individual developments to avoid cumulative effects	Site/cable route selection stage. Project design stage. EIA stage. Operation	A Cumulative Effects Assessment has been completed and is detailed in Volume 3, Chapter 6 Offshore and Intertidal Ornithology. The assessment concludes that no significant effects are anticipated, eliminating the need for programming of activities across proposed developments.	Volume 3, Chapter 6 Offshore and Intertidal Ornithology
Accidental contamination (hydraulic fluids or vessel fuel/cargo)	Design devices to minimise risk of leakage of pollutants	Project design stage. EIA stage. Project installation. Project operation and maintenance.	Volume 7, Appendix 7.1 PEMP (Project Environmental Management Plan) is a plan developed to ensure that appropriate environmental management practices are followed throughout the lifetime of the proposed development. The PEMP provides the framework within which appropriate environmental management practices will be applied including but not limited to matters such as; <ul style="list-style-type: none"> ▪ A marine pollution contingency plan to address the risks, methods and procedures to deal with any spills and collision incidents of the authorised proposed development in relation to all activities carried out below MHWS; ▪ A chemical risk review to include information regarding how and when chemicals (including vessel fuels) are to be used, stored and transported in accordance with recognised best practice guidance and national and international regulations and commitments; ▪ A marine biosecurity plan detailing how the risk of introduction and spread of invasive alien species will be minimised; ▪ Waste management and disposal arrangements; ▪ An environmental vessel management plan, to determine vessel routing to and from construction sites and ports, to include a code of conduct for vessel operators; and ▪ Dropped object plan for reporting and recovery of dropped objects where they pose a potential hazard to other marine users. 	Volume 7, Appendix 7.1 PEMP (Project Environmental Management Plan)
	Risk assessment and contingency planning	Project design stage. EIA stage. Project installation. Project operation and maintenance.	Volume 7, Appendix 7.1 PEMP (Project Environmental Management Plan) is a plan developed to ensure that appropriate environmental management practices are followed throughout the lifetime of the proposed development. The PEMP provides the framework within which appropriate environmental management practices will be applied including but not limited to matters such as; <ul style="list-style-type: none"> ▪ A marine pollution contingency plan to address the risks, methods and procedures to deal with any spills and collision incidents of the authorised proposed development in relation to all activities carried out below MHWS; ▪ A chemical risk review to include information regarding how and when chemicals (including vessel fuels) are to be used, stored and transported in accordance with recognised best practice guidance and national and international regulations and commitments; ▪ A marine biosecurity plan detailing how the risk of introduction and spread of invasive alien species will be minimised; ▪ Waste management and disposal arrangements; ▪ An environmental vessel management plan, to determine vessel routing to and from construction sites and ports, to include a code of conduct for vessel operators; and ▪ Dropped object plan for reporting and recovery of dropped objects where they pose a potential hazard to other marine users. 	Volume 7, Appendix 7.1 PEMP (Project Environmental Management Plan)

Potential Effect	Suggested Project Level Mitigation Measures in OREDP	Timescale	Dublin Array Response	Application Reference (contained with Environmental Impact Assessment Report)
	Design to reduce risk	Project design stage. EIA stage. Project installation. Project operation and maintenance.	<p>All materials used in the operation and maintenance of the offshore infrastructure will be certified as safe for use in the marine environment. Given that antifouling paints, along with other potential contaminants, are commonly used by existing infrastructure and vessels in the area, detectable increases in potential contaminants from the construction phase are considered unlikely.</p> <p>Volume 7, Appendix 7.1 PEMP (Project Environmental Management Plan) is a plan developed to ensure that appropriate environmental management practices are followed throughout the lifetime of the proposed development. The PEMP provides the framework within which appropriate environmental management practices will be applied, and includes a marine pollution contingency plan to address the risks, methods and procedures to deal with any spills and collision incidents of the authorised proposed development in relation to all activities carried out below MHWS. It also includes details of a chemical risk review to include information regarding how and when chemicals (including vessel fuels) are to be used, stored and transported in accordance with recognised best practice guidance and national and international regulations and commitments.</p>	Volume 7, Appendix 7.1 PEMP (Project Environmental Management Plan)
	Avoid shipping routes where collision risk is high	Project design stage. EIA stage. Project installation. Project operation and maintenance.	<p>Vessels will adhere to predefined routes and travel at reduced speeds to minimise the risk of accidental vessel collisions wherever possible. A Project Environmental Management Plan (PEMP) has been developed which contains details of an Environmental Vessel Management Plan (EVMP)(within Volume 7, Appendix 7.1 PEMP) to establish vessel routing to and from construction sites and ports, as well as to include a code of conduct for vessel operators.</p> <p>The EVMP within the PEMP will be used to determine vessel routing to and from construction sites and ports, to include a code of conduct for vessel operators, and the types and specifications of vessels to be used for the construction and operation of the offshore infrastructure.</p> <p>In addition, a Vessel Management Plan (VMP) accompanies the Planning Application (Volume 7, Appendix 7.6) and outlines measures being implemented to avoid collision risk, including outlining designated routes to/from array area for vessels associated with the proposed development which avoid crossing main routes at the south west corner of the site.</p>	<p>Volume 7, Appendix 7.1 Project Environmental Management Plan</p> <p>Volume 7, Appendix 7.6 Vessel Management Plan</p>
	Implementation of SOPEP (Shipboard Oil Pollution Emergency Plan)	Project design stage. EIA stage. Project installation. Project operation and maintenance.	A PEMP has been developed to ensure that appropriate controls are implemented to manage environmental risks associated with the construction and operation of the offshore infrastructure. The plan sets out environmental procedures to be adhered to throughout the construction and operation phase, in line with legislative requirements and industry best practices. The PEMP includes a Marine Pollution Prevention and Contingency Plan, detailing the steps to be taken in the event of a marine pollution incident arising from the operations relating to the proposed development. It also contains a chemical risk review to include information regarding how and when chemicals (including vessel fuels) are to be used, stored and transported in accordance with recognised best practice guidance and national and international regulations and commitments.	Volume 7, Appendix 7.1 PEMP (Project Environment Management Plan)
Collision Risk	Appropriate siting of developments e.g. away from seabird breeding colonies, important feeding/roosting areas, near shore areas and “migration corridors”	Site/cable route selection stage. Project design stage. EIA stage. Project installation.	<p>Two Collision Risk Modelling (CRM) reports have been provided - Volume 4, Appendix 4.3. 6-4 Seabird Collision Risk Modelling and Volume 4, Appendix 4.3.6-5 Migratory CRM. These reports are summarised Volume 3, Chapter 6 Offshore and Intertidal Ornithology, and which details the methods and results of avian collision risk modelling (CRM) undertaken for the offshore infrastructure. The Seabird CRM has been undertaken on 11 seabird species based on their abundance within the array area on baseline surveys. The Migratory CRM has been undertaken on 34 migratory non-seabird species using species-specific biometric input parameters, together with turbine parameters, as well as flight speeds and avoidance rates from published sources. For all assessed species, the predicted number of annual collisions was found to be negligible (less than one bird per year).</p> <p>As part of the early design stages, alternative locations and designs for the proposed development were considered and these are presented in Volume 2, Chapter 5 Consideration of Alternatives. In addition, other avoidance and preventative measures were identified throughout the early development phase of the proposed development, also to avoid and prevent likely significant effects to receptors, which go beyond design features. These measures were incorporated as constituent elements of the proposed development, they are referenced in the project description chapter of this EIAR and they form part of the project for which planning permission is</p>	<p>Volume 3, Chapter 6 Offshore and Intertidal Ornithology and</p> <p>Volume 4, Appendix 4.3. 6-4 Seabird Collision Risk Modelling</p> <p>Volume 4, Appendix 4.3.6-5 Migratory CRM</p> <p>Volume 7 Planning Stage</p> <p>Volume 2, Chapter 5 Consideration of Alternatives.</p>

Potential Effect	Suggested Project Level Mitigation Measures in OREDP	Timescale	Dublin Array Response	Application Reference (contained with Environmental Impact Assessment Report)
			being sought. These measures are distinct from design features and are found within the suite of management plans included in Volume 7 Planning Stage Plans of the EIAR.	
	Alignment of turbines in rows parallel to the main migratory direction	Site/cable route selection stage. Project design stage. EIA stage. Project installation.	Migratory movements occur across broad geographic fronts, with the offshore infrastructure turbine array occupying only a very small proportion of these routes. Consequently, the vast majority of migrating species will avoid any impacts entirely. Individuals that might otherwise traverse the array site can generally alter their flight trajectories or altitudes, if necessary. Any such changes to migratory flight paths would result in, at most, negligible increases in migratory energetic costs, with no discernible impact on survival rates or future reproductive success (Masden et al., 2009).	Volume 3, Chapter 6 Offshore and Intertidal Ornithology
	Adequate spacing between developments to allow migration between wind farms	Project design stage. EIA stage. Project installation. Project operation and maintenance.	As part of the early design stages, alternative locations and designs for the proposed development were considered and these are presented in Volume 2, Chapter 5 Consideration of Alternatives. Migratory movements occur across broad geographic fronts, with the offshore infrastructure turbine array occupying only a very small proportion of these routes. Consequently, the vast majority of migrating species will avoid any impacts entirely. Individuals that might otherwise traverse the array site can generally alter their flight trajectories or altitudes, if necessary. Any such changes to migratory flight paths would result in, at most, negligible increases in migratory energetic costs, with no discernible impact on survival rates or future reproductive success (Masden et al., 2009).	Volume 3, Chapter 6 Offshore and Intertidal Ornithology
	Avoid siting offshore windfarms in key offshore resting, roosting and foraging areas or near coastal breeding/roosting areas	Project design stage. EIA stage. Project installation. Project operation and maintenance.	Two Collision Risk Modelling (CRM) reports have been provided - Volume 4, Appendix 4.3. 6-4 Seabird Collision Risk Modelling and Volume 4, Appendix 4.3.6-5 Migratory CRM. These reports are summarised Volume 3, Chapter 6 Offshore and Intertidal Ornithology, and which details the methods and results of avian collision risk modelling (CRM) undertaken for the offshore infrastructure. The Seabird CRM has been undertaken on 11 seabird species based on their abundance within the array area on baseline surveys. The Migratory CRM has been undertaken on 34 migratory non-seabird species using species-specific biometric input parameters, together with turbine parameters, as well as flight speeds and avoidance rates from published sources. For all assessed species, the predicted number of annual collisions was found to be negligible (less than one bird per year). As part of the early design stages, alternative locations and designs for the proposed development were considered and these are presented in Volume 2, Chapter 5 Consideration of Alternatives. In addition, other avoidance and preventative measures were identified throughout the early development phase of the proposed development, also to avoid and prevent likely significant effects to receptors, which go beyond design features. These measures were incorporated as constituent elements of the proposed development, they are referenced in the project description chapter of this EIAR and they form part of the project for which planning permission is being sought. These measures are distinct from design features and are found within the suite of management plans included in Volume 7 Planning Stage Plans of the EIAR.	Volume 3, Chapter 6 Offshore and Intertidal Ornithology and Volume 4, Appendix 4.3. 6-4 Seabird Collision Risk Modelling Volume 4, Appendix 4.3.6-5 Migratory CRM Volume 7 Planning Stage Plans Volume 2, Chapter 5 Consideration of Alternatives.
	Shut-down of turbines at night with bad weather/visibility and high migration intensity	Project design stage. EIA stage. Project installation. Project operation and maintenance.	Two Collision Risk Modelling (CRM) reports have been provided - Volume 4, Appendix 4.3. 6-4 Seabird Collision Risk Modelling and Volume 4, Appendix 4.3.6-5 Migratory CRM. These reports are summarised Volume 3, Chapter 6 Offshore and Intertidal Ornithology, and which details the methods and results of avian collision risk modelling (CRM) undertaken for the offshore infrastructure. The Seabird CRM has been undertaken on 11 seabird species based on their abundance within the array area on baseline surveys. The Migratory CRM has been undertaken on 34 migratory non-seabird species using species-specific biometric input parameters, together with turbine parameters, as well as flight speeds and avoidance rates from published sources. For all assessed species, the predicted number of annual collisions was found to be negligible (less than one bird per year). As such, the assessment concludes that there are no significant adverse effects on either migratory or non-migratory species; therefore, turbine shutdown measures are not required. However, if and when required, WTGs can be shut down automatically and remotely.	Volume 3, Chapter 6 Offshore and Intertidal Ornithology Volume 4, Appendix 4.3. 6-4 Seabird Collision Risk Modelling Volume 4, Appendix 4.3.6-5 Migratory CRM

Potential Effect	Suggested Project Level Mitigation Measures in OREDP	Timescale	Dublin Array Response	Application Reference (contained with Environmental Impact Assessment Report)
	Avoiding large-scale continuous illumination	Project design stage. EIA stage. Project installation. Project operation and maintenance.	A Lighting and Marking Plan (LMP) accompanies this Planning Application and outlines the strategies being proposed to minimise impacts arising from lighting associated with the proposed development, whilst ensuring adherence to health and safety requirements. The impact of lighting from offshore construction works will be minimised through strategic placement of light sources and the use of highly directional lighting. Lighting will be adjusted to achieve only the minimum required levels, using focused task-based lighting instead of general area illumination.	Volume 8, Chapter 3 Schedule of Commitments Volume 7, Appendix 7.5 Lighting and Marking Plan
	Measures to make wind turbines more recognisable to birds	Project design stage. EIA stage. Project installation. Project operation and maintenance.	All WTGs for both layout options will have a minimum blade tip clearance of 28 m above Mean High Water Springs (MHWS), 31.6 metres above Lowest Astronomical Tide (LAT). This exceeds the minimum 22 m clearance required for safe navigation and has been implemented by the Applicant to mitigate potential collision risks for offshore ornithological receptors. The conclusions of the EIAR indicate that no significant effects are anticipated, and therefore, no further project design features and avoidance and preventative measures are necessary.	Volume 8, Part 2 Schedule of Commitments
Habitat exclusion	Appropriate siting of developments e.g. away from important feeding/roosting areas	Site/cable route selection stage. Project design stage. EIA stage.	<p>As part of the early design stages, alternative locations and designs for the proposed development were considered and these are presented in Volume 2, Chapter 5 Consideration of Alternatives. In addition, other avoidance and preventative measures were identified throughout the early development phase of the proposed development, also to avoid and prevent likely significant effects to receptors, which go beyond design features. These measures were incorporated as constituent elements of the proposed development, they are referenced in the project description chapter of this EIAR and they form part of the project for which planning permission is being sought. These measures are distinct from design features and are found within the suite of management plans included in Volume 7 Planning Stage Plans of the EIAR.</p> <p>Several site-specific surveys have been conducted, with details available in Volume 3, Chapter 6 Offshore and Intertidal Ornithology and Volume 4, Appendix 4.3.6-1 Technical Baseline Report – Ornithology.</p> <p>Site-specific boat-based surveys were undertaken in the offshore study area on a monthly basis between June 2019 and April 2021, with the exception of February and March 2020 (unsuitable weather conditions) and April 2020 (Covid-19 restrictions). Additional surveys were undertaken in May 2020, March 2021 and April 2021.</p> <p>Data were collected along 13 transects spaced 2 km apart and aligned east-west across the study area. Two surveys were conducted in both August and September 2019 to provide additional coverage of post breeding seabird activity and distribution. In addition, two surveys were conducted in May 2020, and also in March and April 2021.</p> <p>As recommended in the DCCAE 2018 Guidance Part B, the methods used to conduct the baseline seabird surveys followed standard COWRIE approved survey methodology (Camphuysen et al., 2004). The suitability of boat-based surveys in comparison to aerial surveys to inform assessments for OWFs was assessed in the COWRIE method review, where it was concluded that the methods provide similar data as far as seabird counts</p>	<p>Volume 3, Chapter 6 Offshore and Intertidal Ornithology and</p> <p>Volume 4, Appendix 4.3. 6-4 Seabird Collision Risk Modelling</p> <p>Volume 4, Appendix 4.3.6-1 Technical Baseline Report – Ornithology</p> <p>Volume 7 Planning Stage Plans</p> <p>Volume 2, Chapter 5 Consideration of Alternatives.</p>

Potential Effect	Suggested Project Level Mitigation Measures in OREDP	Timescale	Dublin Array Response	Application Reference (contained with Environmental Impact Assessment Report)
			are concerned. Census techniques are similar, but the level of detail for individual bird behaviour is less during aerial surveys.	
Barrier to movement	Appropriate siting of developments e.g. away from seabird breeding colonies, important feeding/roosting areas, near shore areas and “migration corridors”	Site/cable route selection stage. Project design stage. EIA stage.	Migratory movements are assumed to occur across broad geographic fronts, with the offshore infrastructure turbine array occupying only a small proportion of this area, which is unlikely to overlap with regions of high importance for migratory species. As a result, the majority of migrating individuals within flyway populations will avoid impacts entirely. Those individuals that would otherwise pass through the array site may choose to avoid it, potentially making subtle alterations to their flight trajectories or altitudes. Notwithstanding, as outlined in Volume 2, Chapter 6 Project Description there is a minimum WTG blade clearance of 28m above MHWS (exceeds minimum requirement of 22m). Further details are provided in Volume 3, Chapter 6 Offshore and Intertidal Ornithology.	Volume 3, Chapter 6 Offshore and Intertidal Ornithology
	Detailed studies to identify location of key migration corridors and sensitive habitats	Site/cable route selection stage. Project design stage. EIA stage.	Several site-specific surveys have been conducted, with details available in Volume 3, Chapter 6 Offshore and Intertidal Ornithology and Volume 4, Appendix 4.3.6-1 Technical Baseline Report – Ornithology. Site-specific boat-based surveys were undertaken in the offshore study area on a monthly basis between June 2019 and April 2021, with the exception of February and March 2020 (unsuitable weather conditions) and April 2020 (Covid-19 restrictions). Additional surveys were undertaken in May 2020, March 2021 and April 2021. Data were collected along 13 transects spaced 2 km apart and aligned east-west across the study area. Two surveys were conducted in both August and September 2019 to provide additional coverage of post breeding seabird activity and distribution. In addition, two surveys were conducted in May 2020, and also in March and April 2021.	Volume 3, Chapter 6 Offshore and Intertidal Ornithology Volume 4, Appendix 4.3.6-1 Technical Baseline Report – Ornithology
	Avoid large installations in migratory corridors	Site/cable route selection stage. Project design stage. EIA stage.	Migratory movements are assumed to occur across broad geographic fronts, with the offshore infrastructure turbine array occupying only a small proportion of this area, which is unlikely to overlap with regions of high importance for migratory species. As a result, the majority of migrating individuals within flyway populations will avoid impacts entirely. Those individuals that would otherwise pass through the array site may choose to avoid it, potentially making subtle alterations to their flight trajectories or altitudes. Notwithstanding, as outlined in Volume 2, Chapter 6 Project Description there is a minimum WTG blade clearance of 28m above MHWS (exceeds minimum requirement of 22m). Further details are provided in Volume 3, Chapter 6 Offshore and Intertidal Ornithology.	Volume 3, Chapter 6 Offshore and Intertidal Ornithology
	Avoid installation of a number of developments on migratory corridors	Site/cable route selection stage. Project design stage. EIA stage.	Migratory movements are assumed to occur across broad geographic fronts, with the offshore infrastructure turbine array occupying only a small proportion of this area, which is unlikely to overlap with regions of high importance for migratory species. As a result, the majority of migrating individuals within flyway populations will avoid impacts entirely. Those individuals that would otherwise pass through the array site may choose to avoid it, potentially making subtle alterations to their flight trajectories or altitudes. Notwithstanding, as outlined in Volume 2, Chapter 6 Project Description there is a minimum WTG blade clearance of 28m above MHWS (exceeds minimum requirement of 22m). Further details are provided in Volume 3, Chapter 6 Offshore and Intertidal Ornithology.	Volume 3, Chapter 6 Offshore and Intertidal Ornithology
EMF	Cable configuration and orientation can reduce field strength	Project design stage. EIA stage.	As outlined within Volume 2, Chapter 6 Project Description, offshore cables will, where possible, be buried in the seabed to the optimal performance burial depth for the specific ground conditions. Where optimum burial depth cannot be achieved secondary protection measure will be deployed e.g. concrete mattress, rock berm, grout bags or an equivalent in key areas. Burial of cables will provide shielding for any E fields generated.	Volume 2, Chapter 6 Project Description
	Cable burial, where possible to minimise field effect at the seabed	Project design stage. EIA stage.	As outlined within Volume 2, Chapter 6 Project Description, offshore cables will, where possible, be buried in the seabed to the optimal performance burial depth for the specific ground conditions. Where optimum burial depth cannot be achieved secondary protection measure will be deployed e.g. concrete mattress, rock berm, grout bags or an equivalent in key areas. Burial of cables will provide shielding for any E fields generated.	Volume 2, Chapter 6 Project Description

Potential Effect	Suggested Project Level Mitigation Measures in OREDP	Timescale	Dublin Array Response	Application Reference (contained with Environmental Impact Assessment Report)
Marine Mammals				
Physical disturbance	Surveys to identify key breeding and foraging sites, nursery areas (cetaceans) haul out (seals), moulting and migration routes	Site/cable route selection stage. Project design stage. EIA stage. Project installation.	To provide site-specific and up-to-date information for the impact assessment, several site-specific surveys were conducted. In total 19 monthly surveys were conducted during 17 months between June 2019 and January 2020, between May and September 2020, and between December 2020 and April 2021. Line transect distance sampling methods were used; where the vessel travelled along pre-determined transects and a minimum of three marine mammal trained observers were onboard. Two searched for animals, with one recording relevant information when an animal, or group of animals, was detected. Observers searched for marine mammals primarily with the naked eye, using binoculars to confirm detection, species identification and group size. Transects were covered either in a single survey day, or on two consecutive days. In total five species of marine mammal were sighted: harbour porpoise, minke whales, bottlenose dolphins, common dolphins and grey seals, as well as unidentified dolphins. Further details are provided in Volume 3, Chapter 5 Marine Mammals and Volume 4, Appendix 4.3.5-1 Technical Baseline Report – Marine Mammals.	Volume 3, Chapter 5 Marine Mammals Volume 4, Appendix 4.3.5-1 Technical Baseline Report – Marine Mammals
	Detailed study would be required to examine marine mammal distribution around the coast in order to fully understand and mitigate for this risk	Site/cable route selection stage. Project design stage. EIA stage. Project installation.	A comprehensive desk-based review was conducted to inform the baseline for marine mammals, including a review of the site-specific surveys that were conducted to inform the project. More details can be found in Volume 3, Chapter 5 Marine Mammals and Volume 4, Appendix 4.3.5-1 Technical Baseline Report – Marine Mammals.	Volume 3, Chapter 5 Marine Mammals Volume 4, Appendix 4.3.5-1 Technical Baseline Report – Marine Mammals
	Avoid sensitive sites/areas where possible	Site/cable route selection stage. Project design stage. EIA stage. Project installation.	As part of the early design stages, alternative locations and designs for the proposed development were considered and these are presented in Volume 2, Chapter 5 Consideration of Alternatives. In addition, other avoidance and preventative measures were identified throughout the early development phase of the proposed development, also to avoid and prevent likely significant effects to receptors, which go beyond design features. These measures were incorporated as constituent elements of the proposed development, they are referenced in the project description chapter of this EIAR and they form part of the project for which planning permission is being sought. These measures are distinct from design features and are found within the suite of management plans included in Volume 7 Planning Stage Plans of the EIAR.	Volume 2, Chapter 5 Consideration of Alternatives Volume 7 Planning Stage Plans
	Where development occurs near to sensitive sites/areas avoid installation during sensitive seasons	Site/cable route selection stage. Project design stage. EIA stage. Project installation.	The proposed development, including the offshore infrastructure has been designed using the most appropriate and best available design information (refer to Volume 2, Chapter 6 Project Description). As part of the early design stages, alternative locations and designs for the proposed development were considered and these are presented in Volume 2, Chapter 5 Consideration of Alternatives. In addition, other avoidance and preventative measures were identified throughout the early development phase of the proposed development, also to avoid and prevent likely significant effects to receptors, which go beyond design features. These measures were incorporated as constituent elements of the proposed development, they are referenced in the project description chapter of this EIAR and they form part of the project for which planning permission is being sought. These measures are distinct from design features and are found within the suite of management plans included in Volume 7 Planning Stage Plans of the EIAR. Volume 7, Appendix 7.4 Marine Megafauna Mitigation Plan (MMMP) is the primary mitigation tool for marine mammals and supports the consent application for the proposed development. The MMMP should be read alongside the Environmental Vessel Management Plan (EVMP)(within Volume 7,Appendix 7.1 PEMP), which	Volume 2, Chapter 5 Consideration of Alternatives. Volume 2, Chapter 6 Project Description Volume 7, Appendix 7.1 PEMP (Project Environment Management Plan) Volume 7, Appendix 7.4 MMMP (Marine Megafauna Mitigation Plan)

Potential Effect	Suggested Project Level Mitigation Measures in OREDP	Timescale	Dublin Array Response	Application Reference (contained with Environmental Impact Assessment Report)
			<p>includes avoidance and preventative measures against certain impacts relating to vessels. A number of those measures within the MMMP are also applicable to fish and shellfish, including;</p> <ul style="list-style-type: none"> Procedures for impact piling, which will include: <ul style="list-style-type: none"> Implementation of a 1000m mitigation zone pre-piling Marine Mammal Observer (MMO) watches; pre-piling Passive Acoustic Monitoring (PAM); Soft start procedure; and Breaks in piling procedure Procedures for UXO detonation, which will include: <ul style="list-style-type: none"> Implementation of a mitigation zone of 1km; Pre-detonation MMO and PAM; Soft start charges; Use of bubble curtains; and Post detonation searches <p>Volume 7, Appendix 7.1 PEMP (Project Environmental Management Plan) is a plan developed to ensure that appropriate environmental management practices are followed throughout the lifetime of the proposed development. The PEMP provides the framework within which appropriate environmental management practices will be applied, and includes;</p> <ul style="list-style-type: none"> A marine biosecurity plan detailing how the risk of introduction and spread of invasive alien species will be minimised; and A code of conduct will be implemented by all vessel operators when encountering marine species. In addition, vessel movements to and from construction sites and ports will, where feasible, follow existing routes. While these measures are primarily targeted towards marine mammals and birds at sea, they would equally reduce the risk of injury and disturbance to marine turtles and other larger mobile receptors, such as basking sharks. 	
	Programme survey and installation works associated with a species project to reduce potential for noisy or other disturbing activities to occur at the same time	Site/cable route selection stage. Project design stage. EIA stage. Project installation.	<p>Survey and installation works will be scheduled to avoid overlap with other noisy activities.</p> <p>The proposed development, including the offshore infrastructure has been designed using the most appropriate and best available design information (refer to Volume 2, Chapter 6 Project Description). As outlined therein, the Applicant commits to the implementation of at-source noise mitigation methods (e.g. bubble curtains, casings, resonators) to reduce the source level of the underwater noise from pile driving by at least 10 decibels (dB). The Applicant also commits to no simultaneous (concurrent) piling of foundations to avoid and minimise impacts.</p> <p>Avoidance and preventative measures were identified throughout the early development phase of the proposed development, also to avoid and prevent likely significant effects to receptors, which go beyond design features. These measures were incorporated as constituent elements of the proposed development, they are referenced in the project description chapter of this EIAR and they form part of the project for which planning permission is being sought. These measures are distinct from design features and are found within the suite of management plans included in Volume 7 Planning Stage Plans of the EIAR.</p> <p>Volume 7, Appendix 7.4 Marine Megafauna Mitigation Plan (MMMP) is the primary mitigation tool for marine mammals and supports the consent application for the proposed development. The MMMP should be read alongside the Environmental Vessel Management Plan (EVMP)(within Volume 7, Appendix 7.1 PEMP), which includes avoidance and preventative measures against certain impacts relating to vessels. A number of those measures within the MMMP are also applicable to fish and shellfish, including;</p> <ul style="list-style-type: none"> Procedures for impact piling, which will include: <ul style="list-style-type: none"> Implementation of a 1000m mitigation zone pre-piling Marine Mammal Observer (MMO) watches; pre-piling Passive Acoustic Monitoring (PAM); Soft start procedure; and Breaks in piling procedure Procedures for UXO detonation, which will include: <ul style="list-style-type: none"> Implementation of a mitigation zone of 1km; 	<p>Volume 2, Chapter 6 Project Description</p> <p>Volume 3, Chapter 5 Marine Mammals</p> <p>Volume 7, Appendix 7.1 PEMP (Project Environment Management Plan)</p> <p>Volume 7, Appendix 7.4 MMMP (Marine Megafauna Mitigation Plan)</p>

Potential Effect	Suggested Project Level Mitigation Measures in OREDP	Timescale	Dublin Array Response	Application Reference (contained with Environmental Impact Assessment Report)
			<ul style="list-style-type: none"> – Pre-detonation MMO and PAM; – Soft start charges; – Use of bubble curtains; and – Post detonation searches <p>Volume 7, Appendix 7.1 PEMP (Project Environmental Management Plan) provides the framework within which appropriate environmental management practices will be applied, and includes a code of conduct will be implemented by all vessel operators when encountering marine species. In addition, vessel movements to and from construction sites and ports will, where feasible, follow existing routes. While these measures are primarily targeted towards marine mammals and birds at sea, they would equally reduce the risk of injury and disturbance to marine turtles and other larger mobile receptors, such as basking sharks.</p>	
	Programme survey and development installation works for a number of projects to reduce potential for installation periods to coincide with other developments to reduce potential for cumulative effects from developments	Site/cable route selection stage. Project design stage. EIA stage. Project installation.	A Cumulative Effects Assessment has been carried out and is detailed in Volume 3, Chapter 5 Marine Mammals. The assessment concludes that there are no significant effects from the proposed development, either individually or cumulatively with other activities. As a result, there is no need for programming of activities between different developments.	Volume 3, Chapter 5 Marine Mammals
	Programme maintenance works to avoid sensitive seasons e.g. breeding	Site/cable route selection stage. Project design stage. EIA stage. Project installation.	As part of the early design stages, alternative locations and designs for the proposed development were considered and these are presented in Volume 2, Chapter 5 Consideration of Alternatives. In addition, other avoidance and preventative measures were identified throughout the early development phase of the proposed development, also to avoid and prevent likely significant effects to receptors, which go beyond design features. These measures were incorporated as constituent elements of the proposed development, they are referenced in the project description chapter of this EIAR and they form part of the project for which planning permission is being sought. These measures are distinct from design features and are found within the suite of management plans included in Volume 7 Planning Stage Plans of the EIAR.	Volume 3, Chapter 5 Marine Mammals Volume 8, Part 3 Schedule of Measures Volume 7 Planning Stage Plans Volume 2, Chapter 5 Consideration of Alternatives.
Displacement	Surveys to identify key breeding and foraging sites, nursery areas (cetaceans) haul out (seals) and migration routes	Site/cable route selection stage. Project design stage. EIA stage. Operation.	<p>To provide site-specific and up-to-date information for the impact assessment, several site-specific surveys were conducted.</p> <p>In total 19 monthly surveys were conducted during 17 months between June 2019 and January 2020, between May and September 2020, and between December 2020 and April 2021. Line transect distance sampling methods were used; where the vessel travelled along pre-determined transects and a minimum of three marine mammal trained observers were onboard. Two searched for animals, with one recording relevant information when an animal, or group of animals, was detected. Observers searched for marine mammals primarily with the naked eye, using binoculars to confirm detection, species identification and group size. Transects were covered either in a single survey day, or on two consecutive days. In total five species of marine mammal were sighted: harbour porpoise, minke whales, bottlenose dolphins, common dolphins and grey seals, as well as unidentified dolphins. Further details are provided in Volume 3, Chapter 5 Marine Mammals and Volume 4, Appendix 4.3.5-1 Technical Baseline Report – Marine Mammals.</p>	Volume 3, Chapter 5 Marine Mammals Volume 4, Appendix 4.3.5-1 Technical Baseline Report – Marine Mammals

Potential Effect	Suggested Project Level Mitigation Measures in OREDP	Timescale	Dublin Array Response	Application Reference (contained with Environmental Impact Assessment Report)
	Avoid locating developments on key migration routes or in key breeding and foraging areas	Site/cable route selection stage. Project design stage. EIA stage. Operation.	WTG layouts have been designed to avoid or minimise interactions with known areas of high breeding and foraging activity, where feasible. In cases where avoidance is not entirely possible, the layouts have been developed with a focus on maximising the potential for coexistence.	Volume 2, Chapter 5 Consideration of Alternatives
	Where development occurs near to sensitive sites/areas avoid installation during sensitive seasons	Site/cable route selection stage. Project design stage. EIA stage. Operation.	As part of the early design stages, avoidance and preventative measures were identified throughout the early development phase of the proposed development, also to avoid and prevent likely significant effects to receptors, which go beyond design features. These measures were incorporated as constituent elements of the proposed development, they are referenced in the project description chapter of this EIAR and they form part of the project for which planning permission is being sought. These measures are distinct from design features and are found within the suite of management plans included in Volume 7 Planning Stage Plans of the EIAR. Additional project design features and avoidance and preventative measures related to the installation of export cables and onshore infrastructure within the nearshore, intertidal, and landfall areas are detailed in Volume 8, Chapter 2 Schedule of Commitments.	Volume 3, Chapter 5 Marine Mammals Volume 8, Chapter 2 Schedule of Commitments Volume 7 Planning Stage Plans
	Programme survey and installation works associated with a species project to reduce potential for noisy or other disturbing activities to occur at the same time	Site/cable route selection stage. Project design stage. EIA stage. Operation.	Survey activities will be scheduled to avoid overlap with other noisy operations, as concurrent noise-generating activities could compromise data quality. The proposed development, including the offshore infrastructure has been designed using the most appropriate and best available design information (refer to Volume 2, Chapter 6 Project Description). As outlined therein, the Applicant commits to the implementation of at-source noise mitigation methods (e.g. bubble curtains, casings, resonators) to reduce the source level of the underwater noise from pile driving by at least 10 decibels (dB). The Applicant also commits to no simultaneous (concurrent) piling of foundations to avoid and minimise impacts.	Volume 3, Chapter 5 Marine Mammals Volume 2, Chapter 6 Project Description
	Programme survey and development installation works for a number of projects to reduce potential for installation periods to coincide with other developments to reduce potential for cumulative effects from developments	Site/cable route selection stage. Project design stage. EIA stage. Operation.	A Cumulative Effects Assessment has been completed and is detailed in Volume 3, Chapter 6 Offshore and Intertidal Ornithology. The assessment concludes that no significant effects are anticipated, eliminating the need for programming of activities across proposed developments.	Volume 3, Chapter 5 Marine Mammals
	Programme maintenance works to avoid sensitive seasons e.g. breeding	Site/cable route selection stage. Project design stage. EIA stage. Operation.	As part of the early design stages, alternative locations and designs for the proposed development were considered and these are presented in Volume 2, Chapter 5 Consideration of Alternatives. In addition, other avoidance and preventative measures were identified throughout the early development phase of the proposed development, also to avoid and prevent likely significant effects to receptors, which go beyond design features. These measures were incorporated as constituent elements of the proposed development, they are referenced in the project description chapter of this EIAR and they form part of the project for which planning permission is being sought. These measures are distinct from design features and are found within the suite of management plans included in Volume 7 Planning Stage Plans of the EIAR.	Volume 3, Chapter 5 Marine Mammals Volume 8, Chapter 2 Schedule of Commitments Volume 7 Planning Stage Plans Volume 2, Chapter 5 Consideration of Alternatives.
Noise	Implementation of the Code of Practice for the Protection of	Survey Project design stage.	A Marine Megafauna Mitigation Plan (MMMP) has been developed to outline the necessary project design features and avoidance and preventative measures to minimise impacts on marine mammals during the construction and operation of the offshore infrastructure. The MMMP will be implemented by the Applicant and its	Volume 7, Appendix 7.4 Marine Megafauna Mitigation Plan (MMMP)

Potential Effect	Suggested Project Level Mitigation Measures in OREDP	Timescale	Dublin Array Response	Application Reference (contained with Environmental Impact Assessment Report)
	Marine Mammals during Acoustic Seafloor Surveys in Irish Waters. This applies to all activities licensed under the Foreshore Consent and other activities such as geophysical surveys which also require consent under the Wildlife Act and Habitats Directive	EIA stage. Project installation. Project operation and maintenance.	appointed contractor(s), and it will be secured through conditions of the proposed development's consent. The MMMP will remain a live document, updated as required, and will be submitted to the relevant authority prior to the commencement of construction.	
	Minimise use of high noise emission activities such as impact piling and blasting	Survey Project design stage. EIA stage. Project installation. Project operation and maintenance.	<p>The proposed development has shown that the offshore infrastructure can be constructed using traditional percussive piling techniques whilst avoiding significant adverse effects on marine mammals (Volume 3, Chapter 5 Marine Mammals). However, as part of its commitment to best practices, the Applicant will continue to explore emerging technologies. If new piling hammer technology that demonstrates a reduction in noise at source becomes available, the proposed development will evaluate and, where feasible, implement the technology.</p> <p>Furthermore, the proposed development, including the offshore infrastructure has been designed using the most appropriate and best available design information (refer to Volume 2, Chapter 6 Project Description). As outlined therein, the Applicant commits to the implementation of at-source noise mitigation methods (e.g. bubble curtains, casings, resonators) to reduce the source level of the underwater noise from pile driving by at least 10 decibels (dB). The Applicant also commits to no simultaneous (concurrent) piling of foundations to avoid and minimise impacts.</p>	<p>Volume 3, Chapter 5 Marine Mammals</p> <p>Volume 7, Appendix 7.4 Marine Megafauna Mitigation Plan (MMMP)</p> <p>Volume 2, Chapter 6 Project Description</p>
	Avoid installation during sensitive periods (breeding, foraging, haul out, migration)	Survey. Project design stage. EIA stage. Project installation. Project operation and maintenance.	<p>As part of the early design stages, alternative locations and designs for the proposed development were considered and these are presented in Volume 2, Chapter 5 Consideration of Alternatives. In addition, other avoidance and preventative measures were identified throughout the early development phase of the proposed development, also to avoid and prevent likely significant effects to receptors, which go beyond design features. These measures were incorporated as constituent elements of the proposed development, they are referenced in the project description chapter of this EIAR and they form part of the project for which planning permission is being sought. These measures are distinct from design features and are found within the suite of management plans included in Volume 7 Planning Stage Plans of the EIAR.</p> <p>Installation will be managed through the use of a MMMP to minimise the impact of construction activities.</p>	<p>Volume 2, Chapter 5 Consideration of Alternatives</p> <p>Volume 7, Appendix 7.4 Marine Megafauna Mitigation Plan (MMMP)</p>
	"Soft starting" piling activities/passive acoustic deterrents – gradually increasing noise produced to allow mammals/fish to move away from activities	Survey. Project design stage. EIA stage. Project installation. Project operation and maintenance.	<p>The MMMP incorporates the use of a soft-start procedure for pile driving. This involves gradually increasing the piling power over a set time period to reach full capacity. By beginning at a lower power, nearby marine species, including fish, will have the opportunity to move away from the area, thereby reducing the risk of mortality and injury (JNCC, 2010).</p> <p>As outlined within the MMMP (Volume 7, Appendix 7.4), the following measures will be applied;</p> <ul style="list-style-type: none"> ▪ Procedures for impact piling, which will include: <ul style="list-style-type: none"> – Implementation of a 1000m mitigation zone – pre-piling Marine Mammal Observer (MMO) watches; – pre-piling Passive Acoustic Monitoring (PAM); – Soft start procedure; and – Breaks in piling procedure ▪ Procedures for UXO detonation, which will include: <ul style="list-style-type: none"> – Implementation of a mitigation zone of 1km; – Pre-detonation MMO and PAM; 	Volume 7, Appendix 7.4 Marine Megafauna Mitigation Plan (MMMP)

Potential Effect	Suggested Project Level Mitigation Measures in OREDP	Timescale	Dublin Array Response	Application Reference (contained with Environmental Impact Assessment Report)
			<ul style="list-style-type: none"> – Soft start charges; – Use of bubble curtains; and – Post detonation searches <p>The MMMP has been developed to comply with all relevant guidance, specifically DAHG (2014) and IWDG (2020).</p>	
	Consider using alternatives (i.e. clump weights, gravity bases, routing cables through soft sandy sediment or use cable protection rather than burial)	<p>Survey.</p> <p>Project design stage.</p> <p>EIA stage.</p> <p>Project installation.</p> <p>Project operation and maintenance.</p>	Cables have been routed through sediments that are suitable for burial where feasible. Where burial is not possible, cable protection measures will be implemented.	<p>Volume 2, Chapter 5 Consideration of Alternatives</p> <p>Volume 2, Chapter 6 Project Description</p>
	Underwater noise during operation may be beneficial in alerting species to the presence of the device, reducing the risk of collisions. This requires further research	<p>Survey.</p> <p>Project design stage.</p> <p>EIA stage.</p> <p>Project installation.</p> <p>Project operation and maintenance.</p>	<p>An Underwater Noise Assessment was conducted, with the findings presented in Volume 3, Chapter 5 Marine Mammals and Volume 4, Appendix 4.3.5-7 Dublin Array: Underwater noise Assessment.</p> <p>Two representative modelling locations were selected locations at opposite corners of the array area (north-west and south-east). At each location, two monopile foundation modelling scenarios were considered. In addition to piling, other noise sources were assessed using a straightforward, high-level modelling approach. These included noise from cable laying, dredging, drilling, rock placement, vessel movements, and operational WTG noise.</p>	<p>Volume 3, Chapter 5 Marine Mammals</p> <p>Volume 4, Appendix 4.3.5-7, Dublin Array: Underwater noise assessment</p>
	<p>Noise from operating turbines can be reduced by using isolators.</p> <p>However this has not been tested over long term and to account for cumulative effects</p>	<p>Survey.</p> <p>Project design stage.</p> <p>EIA stage.</p> <p>Project installation.</p> <p>Project operation and maintenance.</p>	The assessment concludes that there will be no significant noise effects from operational turbines, and therefore no additional project design features and avoidance and preventative measures are proposed.	Volume 3, Chapter 5 Marine Mammals
	Use sound insulation on equipment	<p>Survey.</p> <p>Project design stage.</p> <p>EIA stage.</p>	The assessment concludes that there will be no significant effects from operational turbines, and therefore no additional project design features and avoidance and preventative measures are proposed.	Volume 3, Chapter 5 Marine Mammals

Potential Effect	Suggested Project Level Mitigation Measures in OREDP	Timescale	Dublin Array Response	Application Reference (contained with Environmental Impact Assessment Report)
		Project installation. Project operation and maintenance.		
	Use of bubble curtains and other methods to discourage species from entering areas (this is expensive and may only be effective in shallow water)	Survey. Project design stage. EIA stage. Project installation. Project operation and maintenance.	<p>The proposed development has shown that the offshore infrastructure can be constructed using traditional percussive piling techniques whilst avoiding significant adverse effects on marine mammals (Volume 3, Chapter 5 Marine Mammals). However, as part of its commitment to best practices, the Applicant will continue to explore emerging technologies. If new piling hammer technology that demonstrates a reduction in noise at source becomes available, the proposed development will evaluate and, where feasible, implement the technology.</p> <p>Furthermore, the proposed development, including the offshore infrastructure has been designed using the most appropriate and best available design information (refer to Volume 2, Chapter 6 Project Description). As outlined therein, the Applicant commits to the implementation of at-source noise mitigation methods (e.g. bubble curtains, casings, resonators) to reduce the source level of the underwater noise from pile driving by at least 10 decibels (dB). The Applicant also commits to no simultaneous (concurrent) piling of foundations to avoid and minimise impacts.</p>	<p>Volume 3, Chapter 5 Marine Mammals</p> <p>Volume 7, Appendix 7.4 Marine Megafauna Mitigation Plan (MMMP)</p> <p>Volume 2, Chapter 6 Project Description</p>
	Investigate options for the use of acoustic deterrents (where suitable) or other disturbance devices to scare sensitive species away	Survey. Project design stage. EIA stage. Project installation. Project operation and maintenance.	<p>The proposed development outlines the use of acoustic deterrent devices (ADDs) in the MMMP (Volume 7, Appendix 7.4). It is essential that where ADDs are used, the duration of their use is balanced against the increased disturbance impact to marine mammals caused by their use. Consequently, when ADDs are employed for mitigation, the activation duration will be limited to a 15 minute period immediately prior to the commencement of piling. This will allow any undetected animals to leave the area before the start of piling activities.</p>	<p>Volume 7, Appendix 7.4 Marine Megafauna Mitigation Plan (MMMP)</p>
	Programme developments to reduce potential for adverse cumulative/in-combination effects e.g. noise from piling or other activities (surveying) from a number of developments to occur at the same time	Survey. Project design stage. EIA stage. Project installation. Project operation and maintenance.	<p>The proposed development, including the offshore infrastructure has been designed using the most appropriate and best available design information (refer to Volume 2, Chapter 6 Project Description). As outlined therein, the Applicant commits to the implementation of at-source noise mitigation methods (e.g. bubble curtains, casings, resonators) to reduce the source level of the underwater noise from pile driving by at least 10 decibels (dB). The Applicant also commits to no simultaneous (concurrent) piling of foundations to avoid and minimise impacts.</p> <p>Avoidance and preventative measures were identified throughout the early development phase of the proposed development, also to avoid and prevent likely significant effects to receptors, which go beyond design features. These measures were incorporated as constituent elements of the proposed development, they are referenced in the project description chapter of this EIAR and they form part of the project for which planning permission is being sought. These measures are distinct from design features and are found within the suite of management plans included in Volume 7 Planning Stage Plans of the EIAR.</p> <p>Volume 7, Appendix 7.4 Marine Megafauna Mitigation Plan (MMMP) is the primary mitigation tool for marine mammals and supports the consent application for the proposed development. The MMMP should be read alongside the Environmental Vessel Management Plan (EVMP)(within Volume 7, Appendix 7.1 PEMP), which includes avoidance and preventative measures against certain impacts relating to vessels. A number of those measures within the MMMP are also applicable to fish and shellfish, including;</p> <ul style="list-style-type: none"> ▪ Procedures for impact piling, which will include: <ul style="list-style-type: none"> – Implementation of a 1000m mitigation zone – pre-piling Marine Mammal Observer (MMO) watches; – pre-piling Passive Acoustic Monitoring (PAM); 	<p>Volume 3, Chapter 4 Fish and Shellfish Ecology</p> <p>Volume 7, Appendix 7.1 PEMP (Project Environmental Management Plan)</p> <p>Volume 7, Appendix 7.4 MMMP (Marine Megafauna Mitigation Plan)</p>

Potential Effect	Suggested Project Level Mitigation Measures in OREDP	Timescale	Dublin Array Response	Application Reference (contained with Environmental Impact Assessment Report)
			<ul style="list-style-type: none"> – Soft start procedure; and – Breaks in piling procedure ▪ Procedures for UXO detonation, which will include: <ul style="list-style-type: none"> – Implementation of a mitigation zone of 1km; – Pre-detonation MMO and PAM; – Soft start charges; – Use of bubble curtains; and – Post detonation searches <p>Volume 7, Appendix 7.1 PEMP (Project Environmental Management Plan) provides the framework within which appropriate environmental management practices will be applied, and includes a code of conduct will be implemented by all vessel operators when encountering marine species. In addition, vessel movements to and from construction sites and ports will, where feasible, follow existing routes. While these measures are primarily targeted towards marine mammals and birds at sea, they would equally reduce the risk of injury and disturbance to marine turtles and other larger mobile receptors, such as basking sharks.</p>	
	Use of mammal observers and passive acoustic monitoring to facilitate implementation of exclusion zone during noisy activities	Survey. Project design stage. EIA stage. Project installation. Project operation and maintenance.	The MMMP (Volume 7, Appendix 7.4) includes the commitment to implement pre-piling PAM, as the proposed development will require piling during periods of limited visibility and at night. Specifically, PAM will be used to monitor the extent of the Mitigation Zone prior to piling start up during poor periods of visibility, or during nighttime operations. This will be necessary if there is a break greater than 10 minutes during darkness or if piling activities commence during darkness. If the PAM is unavailable during this period, otherwise the operations would need to wait until daylight. The PAM would be used in the same way as visual observations prior to the start of piling activity.	Volume 7, Appendix 7.4 Marine Megafauna Mitigation Plan (MMMP)
	Time noisy activities for individual developments to avoid cumulative effect	Survey. Project design stage. EIA stage. Project installation. Project operation and maintenance.	Significant effects, both individually and cumulatively, on marine mammals have not been identified following the implementation of appropriate mitigations measures outlined in the MMMP (Volume 7, Appendix 7.4). The conclusion is that no significant effects are anticipated, and therefore, there is no need for programming of activities between proposed developments.	Volume 7, Appendix 7.4 Marine Megafauna Mitigation Plan (MMMP)
	Use of IWDG recommendations for multibeam survey and cetacean impacts	Survey. Project design stage EIA stage. Project installation. Project operation and maintenance.	The assessment of potential effects on marine mammals arising from the proposed development has been conducted in accordance with IWDG recommendations, Irish guidelines, and international best practices.	Volume 3, Chapter 5 Marine Mammals Volume 7, Appendix 7.4 Marine Megafauna Mitigation Plan (MMMP)
Collision Risk	Design device to minimise risk of collision	Site/cable route selection stage. Project design stage.	Vessels will adhere to predefined routes and travel at reduced speeds to minimise the risk of accidental vessel collisions wherever possible. A Project Environmental Management Plan (PEMP) (see Volume 7 Appendix 7.1) has been developed. A Vessel Management Plan (see Volume 7, Appendix 7.6) has also been included within the application which contains details on establishing vessel routing to and from construction sites and ports, as well as to include a code of conduct for vessel operators.	Volume 7, Appendix 7.1 Project Environmental Management Plan Volume 7, Appendix 7.6 Vessel Management Plan

Potential Effect	Suggested Project Level Mitigation Measures in OREDP	Timescale	Dublin Array Response	Application Reference (contained with Environmental Impact Assessment Report)
		EIA stage. Project installation. Project operation and maintenance.	The VMP will be used to determine vessel routing to and from construction sites and ports, to include a code of conduct for vessel operators, and the types and specifications of vessels to be used for the construction and operation of the offshore infrastructure.	
	Do not site devices in particularly sensitive areas – e.g. migration routes, feeding, breeding areas or near to main haul routes	Site/cable route selection stage. Project design stage. EIA stage. Project installation. Project operation and maintenance.	WTG layouts have been designed in a manner which maximises the potential for coexistence with a minimum turbine separation distance of 944 metres subject to any micrositeing necessary based on local seabed conditions.	Volume 2, Chapter 5 Consideration of Alternatives
	Increase device visibility, or use of acoustic deterrent devices	Site/cable route selection stage. Project design stage. EIA stage. Project installation. Project operation and maintenance.	<p>The MMMP (Volume 7, Appendix 7.4) outlines measures to mitigate the cumulative auditory injury (PTS) risk from pile driving activities, aiming to reduce it to negligible levels. These measures include:</p> <ul style="list-style-type: none"> ▪ The use of acoustic deterrent devices (ADDs) under specific circumstances to move marine mammals away from the immediate vicinity of the pile. ▪ The implementation of noise abatement methods at the source. ▪ The consideration of alternative piling methods. <p>The final version of the piling MMMP, incorporating the relevant project design features and avoidance and preventative measures, will be provided after consent, once a piling contractor is appointed and detailed installation methods are confirmed.</p>	Volume 7, Appendix 7.4 Marine Megafauna Mitigation Plan (MMMP)
	Enforce speed limits for vessels used in construction and establish a code of conduct to avoid disturbance to marine mammals both during construction activities and in transit to the construction area if entering areas of high animal abundance	Site/cable route selection stage. Project design stage. EIA stage. Project installation. Project operation and maintenance.	Vessels will adhere to predefined routes and travel at reduced speeds to minimise the risk of accidental vessel collisions wherever possible. A Vessel Management Plan (within Volume 7, Appendix 7.1 Project Environmental Management Plan and Volume 7, Appendix 7.6 Vessel Management Plan) will be used to establish vessel routing to and from construction sites and ports, as well as to include a code of conduct for vessel operators. The Vessel Management Plan will include types and specifications of vessels to be used for the construction and operation of the offshore infrastructure.	<p>Volume 7, Appendix 7.1 Project Environmental Management Plan</p> <p>Volume 7, Appendix 7.6 Vessel Management Plan</p>
	Use of protective netting or grids	Site/cable route selection stage.	In the context of Offshore Renewable Energy (ORE), this suggested mitigation is only applicable to tidal turbines, thus not applicable with regard to the proposed development.	Not Applicable

Potential Effect	Suggested Project Level Mitigation Measures in OREDP	Timescale	Dublin Array Response	Application Reference (contained with Environmental Impact Assessment Report)
		Project design stage. EIA stage. Project installation. Project operation and maintenance.		
	Seasonal restrictions could be placed on operation to avoid impacting on marine mammals at vulnerable times such as breeding season	Site/cable route selection stage. Project design stage. EIA stage. Project installation. Project operation and maintenance.	Following the implementation of appropriate mitigations measures outlined in the MMMP (Volume 7, Appendix 7.4), no significant effects have been identified regarding disturbance during the operational phase of the proposed development. Therefore, there are no specific seasons that require avoidance due to sensitivity concerns.	Volume 7, Appendix 7.4 Marine Megafauna Mitigation Plan (MMMP)
	The use of acoustic deterrents such as pingers or acoustic harassment devices	Site/cable route selection stage. Project design stage. EIA stage. Project installation. Project operation and maintenance.	The MMMP outlines measures to mitigate the cumulative auditory injury (PTS) risk from pile driving activities, aiming to reduce it to negligible levels. These measures include: <ul style="list-style-type: none"> ▪ The use of acoustic deterrent devices (ADDs) under specific circumstances to move marine mammals away from the immediate vicinity of the pile. ▪ The implementation of noise abatement methods at the source. ▪ The consideration of alternative piling methods. The final version of the piling MMMP, incorporating the selected project design features and avoidance and preventative measures, will be provided after consent, once a piling contractor is appointed and detailed installation methods are confirmed.	Volume 7, Appendix 7.4 Marine Megafauna Mitigation Plan (MMMP)
	Soften collision by adding smooth edges or padding	Site/cable route selection stage. Project design stage. EIA stage. Project installation. Project operation and maintenance.	In the context of Offshore Renewable Energy (ORE), this suggested mitigation is only applicable to tidal turbines, thus not applicable with regard to the proposed development.	Not Applicable
	Protect against entrapment by incorporating escape	Site/cable route selection stage.	In the context of Offshore Renewable Energy (ORE), this suggested mitigation is only applicable to tidal turbines, thus not applicable with regard to the proposed development.	Not Applicable

Potential Effect	Suggested Project Level Mitigation Measures in OREDP	Timescale	Dublin Array Response	Application Reference (contained with Environmental Impact Assessment Report)
	hatches into device design	Project design stage. EIA stage. Project installation. Project operation and maintenance.		
	Use of protective screens to prevent marine organisms from entering the device (i.e. shrouded turbines)	Site/cable route selection stage. Project design stage. EIA stage. Project installation. Project operation and maintenance.	In the context of Offshore Renewable Energy (ORE), this suggested mitigation is only applicable to tidal turbines, thus not applicable with regard to the proposed development.	Not Applicable
	Survey to identify potential for offshore bat activity in proposed development area	Site/cable route selection stage. Project design stage. EIA stage. Project installation. Project operation and maintenance.	A thorough desk-based review was conducted to establish the baseline for offshore bat activity. To ensure the impact assessment was based on site-specific and up-to-date information, bat activity surveys were carried out using remote automated 'static' bat detectors. Further details can be found in Volume 3, Chapter 7 Bats in the Offshore Environment.	Volume 3, Chapter 7 Bats in the Offshore Environment
	Alignment of turbines in rows parallel to the main migratory direction	Site/cable route selection stage. Project design stage. EIA stage. Project installation. Project operation and maintenance.	Migratory movements occur across broad geographic fronts, with the offshore infrastructure turbine array occupying only a very small proportion of these routes. Consequently, the vast majority of migrating species will avoid any impacts entirely. Individuals that might otherwise traverse the array site can generally alter their flight trajectories or altitudes, if necessary. Any such changes to migratory flight paths would result in, at most, negligible increases in migratory energetic costs, with no discernible impact on survival rates or future reproductive success (Masden et al., 2009).	Volume 3, Chapter 6 Offshore and Intertidal Ornithology Volume 4, Appendix 4.3. 6-4 Seabird Collision Risk Modelling Volume 4, Appendix 4.3.6-1 Technical Baseline Report – Ornithology

Potential Effect	Suggested Project Level Mitigation Measures in OREDP	Timescale	Dublin Array Response	Application Reference (contained with Environmental Impact Assessment Report)
	Adequate spacing between developments to allow migration between wind farms;	Site/cable route selection stage. Project design stage. EIA stage. Project installation. Project operation and maintenance.	Phase One wind farms are strategically spaced along the east coast of Ireland, ensuring sufficient gaps to allow for migration between the wind farms.	Volume 3, Chapter 6 Offshore and Intertidal Ornithology
	Shut-down of turbines at night with bad weather/visibility and high migration intensity;	Site/cable route selection stage. Project design stage. EIA stage. Project installation. Project operation and maintenance.	No significant effects have been identified for disturbance during the operational phase of the proposed development; therefore, no turbine shutdowns are proposed. However, if and when required, WTGs can be shut down automatically and remotely.	Volume 3, Chapter 6 Offshore and Intertidal Ornithology
	Avoiding large-scale continuous illumination	Site/cable route selection stage. Project design stage. EIA stage. Project installation. Project operation and maintenance.	A Lighting and Marking Plan (LMP) accompanies this Planning Application and outlines the strategies being proposed to minimise impacts arising from lighting associated with the proposed development, whilst ensuring adherence to health and safety requirements. The impact of lighting from offshore construction works will be minimised through strategic placement of light sources and the use of highly directional lighting. Lighting will be adjusted to achieve only the minimum required levels, using focused task-based lighting instead of general area illumination.	Volume 8, Part 3 Schedule of Commitments Volume 7, Appendix 7.5 Lighting and Marking Plan
Accidental contamination (hydraulic fluids or vessel cargo/fuel)	Design devices to minimise risk of leakage of pollutants	Project design stage. EIA stage. Project installation. Project operation and maintenance.	Volume 7, Appendix 7.1 PEMP (Project Environmental Management Plan) is a plan developed to ensure that appropriate environmental management practices are followed throughout the lifetime of the proposed development. The PEMP provides the framework within which appropriate environmental management practices will be applied including but not limited to matters such as; <ul style="list-style-type: none"> ▪ A marine pollution contingency plan to address the risks, methods and procedures to deal with any spills and collision incidents of the authorised proposed development in relation to all activities carried out below MHWS; ▪ A chemical risk review to include information regarding how and when chemicals (including vessel fuels) are to be used, stored and transported in accordance with recognised best practice guidance and national and international regulations and commitments; ▪ A marine biosecurity plan detailing how the risk of introduction and spread of invasive alien species will be minimised; ▪ Waste management and disposal arrangements; ▪ An environmental vessel management plan, to determine vessel routing to and from construction sites and ports, to include a code of conduct for vessel operators; and 	Volume 7, Appendix 7.1 PEMP (Project Environmental Management Plan)

Potential Effect	Suggested Project Level Mitigation Measures in OREDP	Timescale	Dublin Array Response	Application Reference (contained with Environmental Impact Assessment Report)
			<ul style="list-style-type: none"> ▪ Dropped object plan for reporting and recovery of dropped objects where they pose a potential hazard to other marine users. 	
	Risk assessment and contingency planning	Project design stage. EIA stage. Project installation. Project operation and maintenance.	<p>Volume 7, Appendix 7.1 PEMP (Project Environmental Management Plan) is a plan developed to ensure that appropriate environmental management practices are followed throughout the lifetime of the proposed development. The PEMP provides the framework within which appropriate environmental management practices will be applied including but not limited to matters such as;</p> <ul style="list-style-type: none"> ▪ A marine pollution contingency plan to address the risks, methods and procedures to deal with any spills and collision incidents of the authorised proposed development in relation to all activities carried out below MHWS; ▪ A chemical risk review to include information regarding how and when chemicals (including vessel fuels) are to be used, stored and transported in accordance with recognised best practice guidance and national and international regulations and commitments; ▪ A marine biosecurity plan detailing how the risk of introduction and spread of invasive alien species will be minimised; ▪ Waste management and disposal arrangements; ▪ An environmental vessel management plan, to determine vessel routing to and from construction sites and ports, to include a code of conduct for vessel operators; and ▪ Dropped object plan for reporting and recovery of dropped objects where they pose a potential hazard to other marine users. 	Volume 7, Appendix 7.1 PEMP (Project Environmental Management Plan)
	Design to reduce risk	Project design stage. EIA stage. Project installation. Project operation and maintenance.	<p>All materials used in the operation and maintenance of the offshore infrastructure will be certified as safe for use in the marine environment. Given that antifouling paints, along with other potential contaminants, are commonly used by existing infrastructure and vessels in the area, detectable increases in potential contaminants from the construction phase are considered unlikely.</p> <p>Volume 7, Appendix 7.1 PEMP (Project Environmental Management Plan) is a plan developed to ensure that appropriate environmental management practices are followed throughout the lifetime of the proposed development. The PEMP provides the framework within which appropriate environmental management practices will be applied, and includes a marine pollution contingency plan to address the risks, methods and procedures to deal with any spills and collision incidents of the authorised proposed development in relation to all activities carried out below MHWS. It also includes details of a chemical risk review to include information regarding how and when chemicals (including vessel fuels) are to be used, stored and transported in accordance with recognised best practice guidance and national and international regulations and commitments.</p>	Volume 7, Appendix 7.1 PEMP (Project Environmental Management Plan)
	Avoid shipping routes where collision risk is high	Project design stage. EIA stage. Project installation. Project operation and maintenance.	<p>Vessels will adhere to predefined routes and travel at reduced speeds to minimise the risk of accidental vessel collisions wherever possible. A Project Environmental Management Plan (PEMP) has been developed which contains details of an Environmental Vessel Management Plan (EVMP)(within Volume 7, Appendix 7.1 PEMP) to establish vessel routing to and from construction sites and ports, as well as to include a code of conduct for vessel operators.</p> <p>The EVMP within the PEMP will be used to determine vessel routing to and from construction sites and ports, to include a code of conduct for vessel operators, and the types and specifications of vessels to be used for the construction and operation of the offshore infrastructure.</p> <p>In addition, a Vessel Management Plan (VMP) accompanies the Planning Application (Volume 7, Appendix 7.6) and outlines measures being implemented to avoid collision risk, including outlining designated routes to/from array area for vessels associated with the proposed development which avoid crossing main routes at the south west corner of the site.</p>	Volume 7, Appendix 7.1 Project Environmental Management Plan Volume 7, Appendix 7.6 Vessel Management Plan
	Implementation of SOPEP (Shipboard Oil Pollution Emergency Plan)	Project design stage. EIA stage.	A PEMP has been developed to ensure that appropriate controls are implemented to manage environmental risks associated with the construction and operation of the offshore infrastructure. The plan sets out environmental procedures to be adhered to throughout the construction and operation phase, in line with legislative requirements and industry best practices. The PEMP includes a Marine Pollution Prevention and Contingency Plan, detailing the steps to be taken in the event of a marine pollution incident arising from the operations relating to the proposed development. It also contains a chemical risk review to include information regarding how and when	Volume 7, Appendix 7.1 PEMP (Project Environmental Management Plan)

Potential Effect	Suggested Project Level Mitigation Measures in OREDP	Timescale	Dublin Array Response	Application Reference (contained with Environmental Impact Assessment Report)
		Project installation. Project operation and maintenance.	chemicals (including vessel fuels) are to be used, stored and transported in accordance with recognised best practice guidance and national and international regulations and commitments.	
Habitat Exclusion	Avoid sensitive sites/species	Site/cable route selection stage. Project design stage. EIA stage	No significant effects have been identified as a result of the proposed development. Sensitive habitats have been avoided, or impacts have been mitigated where necessary.	Volume 3, Chapter 3, Benthic, Intertidal and Subtidal Ecology Volume 3, Chapter 5 Marine Mammals
	Surveys of habitat use by marine mammals	Site/cable route selection stage. Project design stage. EIA stage.	To provide site-specific and up-to-date information for the impact assessment, several site-specific surveys were conducted. In total 19 monthly surveys were conducted during 17 months between June 2019 and January 2020, between May and September 2020, and between December 2020 and April 2021. Line transect distance sampling methods were used; where the vessel travelled along pre-determined transects and a minimum of three marine mammal trained observers were onboard. Two searched for animals, with one recording relevant information when an animal, or group of animals, was detected. Observers searched for marine mammals primarily with the naked eye, using binoculars to confirm detection, species identification and group size. Transects were covered either in a single survey day, or on two consecutive days. In total five species of marine mammal were sighted: harbour porpoise, minke whales, bottlenose dolphins, common dolphins and grey seals, as well as unidentified dolphins. Further details are provided in Volume 3, Chapter 5 Marine Mammals and Volume 4, Appendix 4.3.5-1 Technical Baseline Report – Marine Mammals.	Volume 3, Chapter 5 Marine Mammals Volume 4, Appendix 4.3.5-1 Technical Baseline Report – Marine Mammals
Barrier to movement	Detailed studies to identify location of key migration corridors and sensitive habitats	Site/cable route selection stage. Project design stage. EIA stage.	To provide site-specific and up-to-date information for the impact assessment, several site-specific surveys were conducted. In total 19 monthly surveys were conducted during 17 months between June 2019 and January 2020, between May and September 2020, and between December 2020 and April 2021. Line transect distance sampling methods were used; where the vessel travelled along pre-determined transects and a minimum of three marine mammal trained observers were onboard. Two searched for animals, with one recording relevant information when an animal, or group of animals, was detected. Observers searched for marine mammals primarily with the naked eye, using binoculars to confirm detection, species identification and group size. Transects were covered either in a single survey day, or on two consecutive days. In total five species of marine mammal were sighted: harbour porpoise, minke whales, bottlenose dolphins, common dolphins and grey seals, as well as unidentified dolphins. Further details are provided in Volume 3, Chapter 5 Marine Mammals and Volume 4, Appendix 4.3.5-1 Technical Baseline Report – Marine Mammals.	Volume 3, Chapter 5 Marine Mammals Volume 4, Appendix 4.3.5-1 Technical Baseline Report – Marine Mammals
	Detailed study would be required to examine coastal distribution in order to mitigate for this risk	Site/cable route selection stage. Project design stage. EIA stage.	Site-specific landfall surveys were conducted at the intertidal area of the offshore infrastructure. Although these surveys were intended to focus on ornithological receptors and marine mammals were not the primary focus of these surveys, observations included a total of 6 marine mammal and 30 seabird species (excluding waders & species considered to be typically terrestrial) were recorded on the boat-based surveys in the study area between June 2019 and September 2020 (see Volume 4, Appendix 4.3.5-4 Boat based bird and marine mammal survey report June 2019 - September 2020). Further details can be found in Volume 3, Chapter 5 Marine Mammals and Volume 4, Appendix 4.3.5-1 Technical Baseline Report – Marine Mammals. The assessment has determined that there are no significant adverse effects within the context of both the Environmental Impact Assessment Report (EIAR) and the Natura Impact Statement (NIS). No barriers to marine mammal movement are anticipated during the construction or operational phases of the proposed development.	Volume 3, Chapter 5 Marine Mammals and Volume 4, Appendix 4.3. 5-1 Technical Baseline Report – Marine Mammals Volume 4, Appendix 4.3.5-4 Boat based bird and marine mammal survey report June 2019 - September 2020

Potential Effect	Suggested Project Level Mitigation Measures in OREDP	Timescale	Dublin Array Response	Application Reference (contained with Environmental Impact Assessment Report)
	Avoid large installations in migratory corridors	Site/cable route selection stage. Project design stage. EIA stage.	<p>Numerous studies have documented the presence of marine mammals within offshore wind farm (OWF) footprints, supporting the conclusion that these structures do not pose long-term adverse effects on marine mammal populations:</p> <ul style="list-style-type: none"> At the Horns Rev and Nysted offshore wind farms in Denmark, long-term monitoring revealed regular sightings of both harbour porpoises and harbour seals. Within two years of operation, population levels were comparable to those in the surrounding areas (Diederichs et al., 2008). At the Egmond an Zee OWF in the Netherlands, monitoring indicated significantly higher porpoise activity within the OWF compared to reference areas during its operational phase, suggesting that the presence of the wind farm did not adversely affect harbour porpoise presence (Scheidat et al., 2011). Research at Dutch and Danish OWFs (Lindeboom et al., 2011) suggests that harbour porpoises may be attracted to these areas due to increased foraging opportunities. Additionally, tagging studies by Russell et al. (2014) observed that harbour and grey seals displayed grid-like movement patterns between individual wind turbine generators (WTGs), indicative of foraging behaviours. Reviews and studies (e.g., Madsen et al., 2006; Teilmann et al., 2006a, 2006b; CEFAS, 2010; Brasseur et al., 2012) have also concluded that operational wind farm noise has negligible barrier effects on marine mammal movement. <p>These findings suggest that operational and maintenance (O&M) activities associated with wind farms, such as those proposed for the offshore infrastructure, are unlikely to create permanent barriers to marine mammal movement.</p>	Volume 3, Chapter 5 Marine Mammals and Volume 4, Appendix 4.3. 5-1 Technical Baseline Report – Marine Mammals
	Avoid installation of a number of developments on migratory corridors	Site/cable route selection stage. Project design stage. EIA stage.		
	Avoid sensitive areas (breeding, feeding and nursery areas)	Site/cable route selection stage. Project design stage. EIA stage.	No significant effects have been identified as a result of the proposed development. Sensitive habitats have been avoided, or impacts have been mitigated where necessary.	Volume 3, Chapter 5 Marine Mammals Volume 4, Appendix 4.3. 5-1 Technical Baseline Report – Marine Mammals
	Avoid placement of devices within constrained areas where array could completely block or cause a significant perceptual barrier to marine mammals	Site/cable route selection stage. Project design stage. EIA stage	Dublin Array is proposed on and around the Kish and Bray Banks which are located approximately 10 kilometers (km) from shore, immediately southeast of the city of Dublin, off the coast of counties Dublin and Wicklow, in an area that is not considered constrained.	Volume 3, Chapter 5 Marine Mammals and Volume 4, Appendix 4.3. 5-1 Technical Baseline Report – Marine Mammals
EMF	Cable configuration and orientation can reduce field strength	Project design stage. EIA stage.	<p>Existing evidence indicates that the levels of electromagnetic fields (EMFs) emitted by offshore renewable energy export cables are low enough to pose no potential for significant direct impacts on marine mammals (Copping and Hemery, 2020). While there is no evidence to suggest that seals can detect or respond to EMFs, certain species of cetaceans may be capable of detecting variations in magnetic fields (Normandeau et al., 2011).</p> <p>Considering that marine mammals are known to associate closely with offshore wind farm structures (Scheidat et al., 2011; Russell et al., 2014), the predicted magnitude of impact and vulnerability score for direct EMF effects is assessed as negligible.</p>	Volume 3, Chapter 5 Marine Mammals and
	Cable burial, where possible to minimise field effect at the seabed	Project design stage. EIA stage.	As outlined within Volume 2, chapter 6 Project Description, offshore cables will, where possible, be buried in the seabed to the optimal performance burial depth for the specific ground conditions. Where optimum burial depth cannot be achieved secondary protection measure will be deployed e.g. concrete mattress, rock berm, grout bags or an equivalent in key areas. Burial of cables will provide shielding for any E fields generated.	Volume 2, Chapter 6 Project Description

Potential Effect	Suggested Project Level Mitigation Measures in OREDP	Timescale	Dublin Array Response	Application Reference (contained with Environmental Impact Assessment Report)
Collision	Design device for minimal impact	Site/cable route selection stage.	As part of the design iteration of the proposed development, the project has aimed to minimise the number of offshore structures wherever possible.	Volume 8, Chapter 3 Schedule of Commitments Volume 7, Appendix 7.1 Project Environmental Management Plan
		Project design stage.	In addition, vessels will adhere to predefined routes and travel at reduced speeds to minimise the risk of accidental vessel collisions wherever possible. A Project Environmental Management Plan (PEMP) has been developed which contains details of an Environmental Vessel Management Plan (EVMP)(within Volume 7, Appendix 7.1 PEMP) to establish vessel routing to and from construction sites and ports, as well as to include a code of conduct for vessel operators.	
		EIA stage.		
		Project installation.	The EVMP within the PEMP will be used to determine vessel routing to and from construction sites and ports, to include a code of conduct for vessel operators, and the types and specifications of vessels to be used for the construction and operation of the offshore infrastructure.	
		Project operation and maintenance.		
	Do not site devices in particularly sensitive areas – e.g. migration routes, feeding, breeding areas	Site/cable route selection stage.	No marine turtles were observed during the proposed development's monthly site-specific surveys. However, two leatherback turtle sightings were recorded off the coasts of Cork and Clare in the last 12 months via the IWDG citizen science recording scheme. No sightings were noted along Ireland's east coast during the ObSERVE surveys (Rogan et al., 2018).	Volume 3, Chapter 5 Marine Mammals
		Project design stage.		
		EIA stage.	Between 1910 and 2018, a total of 1,997 marine turtle sightings were documented in Irish and UK waters (Botterell et al., 2020). Most were leatherback turtles, with records distributed across the Irish coastline primarily between May and November. A decline in sightings has been observed over the last decade (Botterell et al., 2020). Leatherback turtle density has been estimated at 0.06 individuals per 100 km ² in the Celtic and Irish Seas (Doyle et al., 2008).	
		Project installation.		
		Project operation and maintenance.		
	Increase device visibility, or use of acoustic deterrent devices	Site/cable route selection stage.	The MMMP (Volume 7, Part 4) outlines measures to mitigate the cumulative auditory injury (PTS) risk from pile driving activities, aiming to reduce it to negligible levels. These measures include:	Volume 7, Appendix 7.4 Marine Megafauna Mitigation Plan (MMMP)
		Project design stage.	<ul style="list-style-type: none"> The use of acoustic deterrent devices (ADDs) under specific circumstances to move marine mammals away from the immediate vicinity of the pile. The implementation of noise abatement methods at the source. The consideration of alternative piling methods. 	
		EIA stage.		
		Project installation.	The final version of the piling MMMP, incorporating the relevant project design features and avoidance and preventative measures, will be provided after consent, once a piling contractor is appointed and detailed installation methods are confirmed.	
		Project operation and maintenance.		
	Enforce speed limits for vessels used in construction and establish a code of conduct to avoid disturbance to marine reptiles both during construction activities and in transit to the construction area if entering areas of high animal abundance	Site/cable route selection stage.	Vessels will adhere to predefined routes and travel at reduced speeds to minimise the risk of accidental vessel collisions wherever possible. A Project Environmental Management Plan (PEMP) has been developed which contains details of an Environmental Vessel Management Plan (EVMP)(within Volume 7, Appendix 7.1 PEMP) to establish vessel routing to and from construction sites and ports, as well as to include a code of conduct for vessel operators.	Volume 7, Appendix 7.1 Project Environmental Management Plan
		Project design stage.		
		EIA stage.		
		Project installation.	The EVMP within the PEMP will be used to determine vessel routing to and from construction sites and ports, to include a code of conduct for vessel operators, and the types and specifications of vessels to be used for the construction and operation of the offshore infrastructure.	
		Project operation and maintenance.		

Potential Effect	Suggested Project Level Mitigation Measures in OREDP	Timescale	Dublin Array Response	Application Reference (contained with Environmental Impact Assessment Report)
	Use of protective netting or grids	Site/cable route selection stage. Project design stage. EIA stage. Project installation. Project operation and maintenance.	In the context of Offshore Renewable Energy (ORE), this suggested mitigation is only applicable to tidal turbines, thus not applicable with regard to the proposed development.	Not Applicable
	Seasonal restrictions could be placed on operation to avoid impacting on marine reptiles at vulnerable times such as breeding season	Site/cable route selection stage. Project design stage. EIA stage. Project installation. Project operation and maintenance.	<p>No marine turtles were observed during the proposed development's monthly site-specific surveys. However, two leatherback turtle sightings were recorded off the coasts of Cork and Clare in the last 12 months via the IWDG citizen science recording scheme. No sightings were noted along Ireland's east coast during the ObSERVE surveys (Rogan et al., 2018).</p> <p>Between 1910 and 2018, a total of 1,997 marine turtle sightings were documented in Irish and UK waters (Botterell et al., 2020). Most were leatherback turtles, with records distributed across the Irish coastline primarily between May and November. A decline in sightings has been observed over the last decade (Botterell et al., 2020). Leatherback turtle density has been estimated at 0.06 individuals per 100 km² in the Celtic and Irish Seas (Doyle et al., 2008).</p> <p>Following the implementation of appropriate mitigations measures outlined in the MMMP (Volume 7, Appendix 7.4), no significant effects have been identified regarding disturbance during the operational phase of the proposed development. Therefore, there are no specific seasons that require avoidance due to sensitivity concerns as sensitive areas have been avoided or impacts mitigated where necessary.</p>	<p>Volume 3, Chapter 5 Marine Mammals</p> <p>Volume 7, Appendix 7.4 Marine Megafauna Mitigation Plan (MMMP)</p>
	The use of acoustic deterrents such as pingers or acoustic harassment devices	Site/cable route selection stage. Project design stage. EIA stage. Project installation. Project operation and maintenance.	<p>The MMMP outlines measures to mitigate the cumulative auditory injury (PTS) risk from pile driving activities, aiming to reduce it to negligible levels. These measures include:</p> <ul style="list-style-type: none"> ▪ The use of acoustic deterrent devices (ADDs) under specific circumstances to move marine mammals away from the immediate vicinity of the pile. ▪ The implementation of noise abatement methods at the source. ▪ The consideration of alternative piling methods. <p>The final version of the piling MMMP, incorporating the selected project design features and avoidance and preventative measures, will be provided after consent, once a piling contractor is appointed and detailed installation methods are confirmed.</p>	Volume 7, Appendix 7.4 Marine Megafauna Mitigation Plan (MMMP)
	Soften collision by adding smooth edges or padding	Site/cable route selection stage. Project design stage. EIA stage. Project installation.	In the context of Offshore Renewable Energy (ORE), this suggested mitigation is only applicable to tidal turbines, thus not applicable with regard to the proposed development.	Not Applicable

Potential Effect	Suggested Project Level Mitigation Measures in OREDP	Timescale	Dublin Array Response	Application Reference (contained with Environmental Impact Assessment Report)
		Project operation and maintenance.		
Accidental Contamination (hydraulic fluids or vessel cargo/fuel)	Design devices to minimise risk of leakage of pollutants	Project design stage. EIA stage. Project installation. Project operation and maintenance.	Volume 7, Appendix 7.1 PEMP (Project Environmental Management Plan) is a plan developed to ensure that appropriate environmental management practices are followed throughout the lifetime of the proposed development. The PEMP provides the framework within which appropriate environmental management practices will be applied including but not limited to matters such as; <ul style="list-style-type: none"> ▪ A marine pollution contingency plan to address the risks, methods and procedures to deal with any spills and collision incidents of the authorised proposed development in relation to all activities carried out below MHWS; ▪ A chemical risk review to include information regarding how and when chemicals (including vessel fuels) are to be used, stored and transported in accordance with recognised best practice guidance and national and international regulations and commitments; ▪ A marine biosecurity plan detailing how the risk of introduction and spread of invasive alien species will be minimised; ▪ Waste management and disposal arrangements; ▪ An environmental vessel management plan, to determine vessel routing to and from construction sites and ports, to include a code of conduct for vessel operators; and ▪ Dropped object plan for reporting and recovery of dropped objects where they pose a potential hazard to other marine users. 	Volume 7, Appendix 7.1 PEMP (Project Environmental Management Plan)
	Risk assessment and contingency planning	Project design stage. EIA stage. Project installation. Project operation and maintenance.	Volume 7, Appendix 7.1 PEMP (Project Environmental Management Plan) is a plan developed to ensure that appropriate environmental management practices are followed throughout the lifetime of the proposed development. The PEMP provides the framework within which appropriate environmental management practices will be applied including but not limited to matters such as; <ul style="list-style-type: none"> ▪ A marine pollution contingency plan to address the risks, methods and procedures to deal with any spills and collision incidents of the authorised proposed development in relation to all activities carried out below MHWS; ▪ A chemical risk review to include information regarding how and when chemicals (including vessel fuels) are to be used, stored and transported in accordance with recognised best practice guidance and national and international regulations and commitments; ▪ A marine biosecurity plan detailing how the risk of introduction and spread of invasive alien species will be minimised; ▪ Waste management and disposal arrangements; ▪ An environmental vessel management plan, to determine vessel routing to and from construction sites and ports, to include a code of conduct for vessel operators; and ▪ Dropped object plan for reporting and recovery of dropped objects where they pose a potential hazard to other marine users. 	Volume 7, Appendix 7.1 PEMP (Project Environment Management Plan)
	Design to reduce risk	Project design stage. EIA stage. Project installation. Project operation and maintenance.	All materials used in the operation and maintenance of the offshore infrastructure will be certified as safe for use in the marine environment. Given that antifouling paints, along with other potential contaminants, are commonly used by existing infrastructure and vessels in the area, detectable increases in potential contaminants from the construction phase are considered unlikely. Volume 7, Appendix 7.1 PEMP (Project Environmental Management Plan) is a plan developed to ensure that appropriate environmental management practices are followed throughout the lifetime of the proposed development. The PEMP provides the framework within which appropriate environmental management practices will be applied, and includes a marine pollution contingency plan to address the risks, methods and procedures to deal with any spills and collision incidents of the authorised proposed development in relation to all activities carried out below MHWS. It also includes details of a chemical risk review to include information regarding how and when chemicals (including vessel fuels) are to be used, stored and transported in accordance with recognised best practice guidance and national and international regulations and commitments.	Volume 7, Appendix 7.1 PEMP (Project Environment Management Plan)

Potential Effect	Suggested Project Level Mitigation Measures in OREDP	Timescale	Dublin Array Response	Application Reference (contained with Environmental Impact Assessment Report)
	Implementation of SOPEP (Shipboard Oil Pollution Emergency Plan)	Project design stage. EIA stage. Project installation. Project operation and maintenance.	A PEMP has been developed to ensure that appropriate controls are implemented to manage environmental risks associated with the construction and operation of the offshore infrastructure. The plan sets out environmental procedures to be adhered to throughout the construction and operation phase, in line with legislative requirements and industry best practices. The PEMP includes a Marine Pollution Prevention and Contingency Plan, detailing the steps to be taken in the event of a marine pollution incident arising from the operations relating to the proposed development. It also contains a chemical risk review to include information regarding how and when chemicals (including vessel fuels) are to be used, stored and transported in accordance with recognised best practice guidance and national and international regulations and commitments.	Volume 7, Appendix 7.1 PEMP (Project Environment Management Plan)
Barrier to movement	Detailed study would be required to examine coastal distribution in order to mitigate for this risk and avoid large installations in migratory corridors	Site/cable route selection stage. Project design stage. EIA stage.	<p>Site-specific landfall surveys were conducted at the intertidal area of the offshore infrastructure. Although these surveys were intended to focus on ornithological receptors and marine mammals were not the primary focus of these surveys, observations included a total of 6 marine mammal and 30 seabird species (excluding waders & species considered to be typically terrestrial) were recorded on the boat-based surveys in the study area between June 2019 and September 2020 (see Volume 4, Appendix 4.3.5-4 Boat based bird and marine mammal survey report June 2019 - September 2020). Further details can be found in Volume 3, Chapter 5 Marine Mammals and Volume 4, Appendix 4.3.5-1 Technical Baseline Report – Marine Mammals.</p> <p>The assessment has determined that there are no significant adverse effects within the context of both the Environmental Impact Assessment Report (EIAR) and the Natura Impact Statement (NIS). No barriers to marine mammal movement are anticipated during the construction or operational phases of the proposed development.</p>	<p>Volume 3, Chapter 5 Marine Mammals and</p> <p>Volume 4, Appendix 4.3. 5-1 Technical Baseline Report – Marine Mammals</p> <p>Volume 4, Appendix 4.3.5-4 Boat based bird and marine mammal survey report June 2019 - September 2020</p>
	Avoid sensitive areas	Site/cable route selection stage. Project design stage. EIA stage.	<p>No marine turtles were observed during the proposed development's monthly site-specific surveys. However, two leatherback turtle sightings were recorded off the coasts of Cork and Clare in the last 12 months via the IWDG citizen science recording scheme. No sightings were noted along Ireland's east coast during the ObSERVE surveys (Rogan et al., 2018).</p> <p>Between 1910 and 2018, a total of 1,997 marine turtle sightings were documented in Irish and UK waters (Botterell et al., 2020). Most were leatherback turtles, with records distributed across the Irish coastline primarily between May and November. A decline in sightings has been observed over the last decade (Botterell et al., 2020). Leatherback turtle density has been estimated at 0.06 individuals per 100 km² in the Celtic and Irish Seas (Doyle et al., 2008).</p> <p>Following the implementation of appropriate mitigations measures outlined in the MMMP (Volume 7, Appendix 7.4), no significant effects have been identified regarding disturbance during the operational phase of the proposed development. Therefore, there are no specific seasons that require avoidance due to sensitivity concerns as sensitive areas have been avoided or impacts mitigated where necessary.</p>	<p>Volume 3, Chapter 5 Marine Mammals</p> <p>Volume 7, Appendix 7.4 Marine Megafauna Mitigation Plan (MMMP)</p>
	Orientating arrays parallel to the coastline rather than perpendicular to the coastline may help minimise a barrier effect as marine reptiles swim past	Site/cable route selection stage. Project design stage. EIA stage.	The array site is aligned parallel to the coastline.	Volume 2, Chapter 6 Project Description
	Avoid placement of devices within constrained areas where array could completely block or cause a significant perceptual barrier to marine reptiles	Site/cable route selection stage. Project design stage. EIA stage.	Dublin Array is proposed on and around the Kish and Bray Banks which are located approximately 10 kilometers (km) from shore, immediately southeast of the city of Dublin, off the coast of counties Dublin and Wicklow, in an area that is not considered constrained.	<p>Volume 3, Chapter 5 Marine Mammals</p> <p>Volume 4, Appendix 4.3. 5-1 Technical Baseline Report – Marine Mammals</p>

Potential Effect	Suggested Project Level Mitigation Measures in OREDP	Timescale	Dublin Array Response	Application Reference (contained with Environmental Impact Assessment Report)
Noise	No specific mitigation identified	N/A	Noted – no specific project design features and avoidance and preventative measures have been identified.	Not Applicable
EMF	Cable configuration and orientation can reduce field strength	Project design stage. EIA stage.	As outlined within Volume 2, Chapter 6 Project Description, offshore cables will, where possible, be buried in the seabed to the optimal performance burial depth for the specific ground conditions. Where optimum burial depth cannot be achieved secondary protection measure will be deployed e.g. concrete mattress, rock berm, grout bags or an equivalent in key areas. Burial of cables will provide shielding for any E fields generated.	Volume 2, Chapter 6 Project Description
	Cable burial, where possible to minimise field effect at the seabed		As outlined within Volume 2, Chapter 6 Project Description, offshore cables will, where possible, be buried in the seabed to the optimal performance burial depth for the specific ground conditions. Where optimum burial depth cannot be achieved secondary protection measure will be deployed e.g. concrete mattress, rock berm, grout bags or an equivalent in key areas. Burial of cables will provide shielding for any E fields generated.	Volume 2, Chapter 6 Project Description
Habitat exclusion	No specific mitigation identified	Site/cable route selection stage. Project design stage. EIA stage.	Noted – no specific project design features and avoidance and preventative measures have been identified.	Not Applicable
Marine and Coastal Archaeology and Wrecks				
Direct disturbance of unknown and known sites	Conform to the legislative requirements of the National Monuments Acts 1930-2004 and follow the codes of practice published by the National Monument Service (NMS)	Site/cable route selection stage. Project design stage. EIA stage. Project installation.	A Protocol for Archaeological Discoveries (PAD) will be implemented for the proposed development. The PAD outlines the procedures for reporting and investigating any unexpected archaeological findings that may arise during the various phases of the proposed development. A Retained Archaeologist will provide guidance and assist industry staff in adhering to the PAD. Additionally, the PAD allows for the establishment of temporary exclusion zones around any areas of potential archaeological interest, ensuring timely archaeological advice is provided. Where necessary, archaeological inspections of significant features will be conducted before proceeding with further activities in the area. This protocol is designed to comply with Irish legislation, including notifying the Underwater Archaeology Unit (UAU), and follows the Code of Practice for Seabed Developers (JNAPC, 2006).	Volume 8, Part 3 Schedule of Commitments Volume 7, Appendix 7.7 Archaeology Management Plan
	Carry out seabed investigations in preferred site locations prior to device installation	Site/cable route selection stage. Project design stage. EIA stage. Project installation.	<p>The positions of the WTGs and OSP for the offshore infrastructure have been determined using a comprehensive range of site-specific data, including geophysical and geotechnical surveys, to identify potential archaeological receptors within the offshore area. As a result, archaeological exclusion zones (AEZs) have been established around known features of archaeological interest, ensuring no works that impact the seabed will take place within these AEZs during construction, operation, or decommissioning phases.</p> <p>For features with an A2 archaeological discrimination rating (potential seabed features), AEZs are not recommended. However, where possible, these features have been avoided. In cases where avoidance is not feasible, further appraisal is proposed prior to construction. For instance, during geophysical surveys or UXO surveys conducted in advance of the proposed development, it is recommended that a suitably qualified archaeological contractor assess the survey data. This assessment will verify the presence of ferrous material at the location of features identified during the initial survey and help identify any additional ferrous archaeological features within the offshore infrastructure area.</p> <p>Further investigation of anomalies will either eliminate their archaeological significance if found to be non-anthropogenic or modern, or confirm their value as archaeological assets. If the features are confirmed to be of archaeological interest, project design features and avoidance and preventative measures, such as avoidance (enforced by AEZs) or offsetting/remedial actions through a Protocol for Archaeological Discoveries (PAD), are recommended.</p>	Volume 3, Chapter 13 Marine Archaeology Volume 8, Part 2 Schedule of Commitments Volume 7, Appendix 7.7 Archaeology Management Plan

Potential Effect	Suggested Project Level Mitigation Measures in OREDP	Timescale	Dublin Array Response	Application Reference (contained with Environmental Impact Assessment Report)
	Avoid sites of interest and exclusion zones for marine archaeology	Site/cable route selection stage. Project design stage. EIA stage. Project installation.	<p>An Archaeology Management Plan (AMP) has been developed to ensure that appropriate controls are implemented to manage risks to archaeology and heritage, associated with the construction and operation of the offshore infrastructure.</p> <p>In summary, the AMP includes details of:</p> <ul style="list-style-type: none"> Pre and post construction monitoring activities will be undertaken by the Applicant, to support these a monitoring plan will be developed, all relevant activities will be licensed under the National Monuments Acts 1930-2014 and the results will be assessed and reported by a suitably qualified archaeologist. Measures to avoid impact on known archaeological receptors including: <ul style="list-style-type: none"> Compliance with Underwater Archaeology Unit Guidelines; Implementation of archaeological exclusion zones (AEZs); Liaison with DHLGH through circulation of full method statement; If required material will be moved or removed from the seabed, a watching brief (undertaken by an appropriately qualified and approved archaeologist) Measures to prevent impact on unknown archaeological receptors including: <ul style="list-style-type: none"> Protocol for Archaeological Discovery ; Geoarchaeological assessment of deposits of archaeological potential, following an approved method statement will be undertaken, results will be assessed and reported by a suitably qualified archaeologist. If required material will be moved or removed from the seabed, a watching brief (undertaken by an appropriately qualified and approved archaeologist) 	<p>Volume 8, Part 2 Schedule of Commitments</p> <p>Volume 7, Appendix 7.7 Archaeology Management Plan</p>
	Submit any artefacts recovered to the NMS	Site/cable route selection stage. Project design stage. EIA stage. Project installation.	A Protocol for Archaeological Discoveries (PAD) will be implemented for the offshore infrastructure. The PAD outlines the procedures for reporting and investigating any unexpected archaeological findings that may arise during the various phases of the proposed development. A Retained Archaeologist will provide guidance and assist industry staff in adhering to the PAD. Additionally, the PAD allows for the establishment of temporary exclusion zones around any areas of potential archaeological interest, ensuring timely archaeological advice is provided. Where necessary, archaeological inspections of significant features will be conducted before proceeding with further activities in the area. This protocol is designed to comply with Irish legislation, including notifying the Underwater Archaeology Unit (UAU), and follows the Code of Practice for Seabed Developers (JNAPC, 2006).	<p>Volume 8, Part 2 Schedule of Commitments</p> <p>Volume 7, Appendix 7.7 Archaeology Management Plan</p>
	Avoid protected and other sites of interest	Site/cable route selection stage. Project design stage. EIA stage. Project installation.	All identified sites have been avoided, and AEZs have been applied where necessary, as implemented through the Archaeology Management Plan (Volume 7, Part 7).	<p>Volume 3, Chapter 13 Marine Archaeology</p> <p>Volume 8, Chapter 3 Schedule of Commitments</p> <p>Volume 7, Part 7 Archaeology Management Plan</p>
	In addition to desk based studies, carry out field walkovers in preferred terrestrial site locations to determine need for site investigations (geophysical surveys/trial trenching) in consultation with the	Site/cable route selection stage. Project design stage. EIA stage. Project installation.	With regard to intertidal heritage assets, in addition to the characterisation surveys and studies outlined in Volume 3, Chapter 13 Marine Archaeology and Volume 3, Chapter 14 Cultural Heritage Settings Assessment (Terrestrial), a targeted archaeological walkover survey will be conducted along the final offshore export cable alignments within the offshore ECC. This survey will help identify any further cultural heritage receptors with surface expressions along the proposed cable routes up to the landfall. Additionally, a metal detection survey, including excavation of identified targets, is recommended to uncover any material of archaeological potential along the proposed cable alignments. Project design features and avoidance and preventative measures, such as avoidance (possibly through the implementation of an AEZ), will be prioritised for all material of archaeological potential within the intertidal area.	<p>Volume 3, Chapter 13 Marine Archaeology</p> <p>Volume 3, Chapter 14 Cultural Heritage Settings Assessment (Terrestrial)</p> <p>Volume 8, Chapter 2 Schedule of Commitments</p>

Potential Effect	Suggested Project Level Mitigation Measures in OREDP	Timescale	Dublin Array Response	Application Reference (contained with Environmental Impact Assessment Report)
	NMS and Local Authorities			
Changes to sediment regime	Conform to the legislative requirements of the National Monuments Acts 1930-2004 and follow the codes of practice published by the NMS	Site/cable route selection stage. Project design stage. EIA stage. Project installation.	Consultation was conducted with the Development Applications Unit (DAU) on behalf of the National Monuments Service (NMS). Surveys will be licenced under the National Monuments Acts 1930-2004. The offshore infrastructure will adhere to the provisions outlined in The National Monuments Act 1930 and the National Monuments (Amendments) Act 1954 to 2004.	Volume 3, Chapter 13 Marine Archaeology Volume 3, Chapter 14 Cultural Heritage Settings Assessment (Terrestrial)
	Carry out seabed investigations in preferred site locations prior to device installation in consultation with the Underwater Archaeology Unit of the NMS	Site/cable route selection stage. Project design stage. EIA stage. Project installation.	<p>The positions of the WTGs and OSP for the offshore infrastructure have been determined using a comprehensive range of site-specific data, including geophysical and geotechnical surveys, to identify potential archaeological receptors within the offshore area. As a result, archaeological exclusion zones (AEZs) have been established around known features of archaeological interest, ensuring no works that impact the seabed will take place within these AEZs during construction, operation, or decommissioning phases.</p> <p>For features with an A2 archaeological discrimination rating (potential seabed features), AEZs are not recommended. However, where possible, these features have been avoided. In cases where avoidance is not feasible, further appraisal is proposed prior to construction. For instance, during geophysical surveys or UXO surveys conducted in advance of the proposed development, it is recommended that a suitably qualified archaeological contractor assess the survey data. This assessment will verify the presence of ferrous material at the location of features identified during the initial survey and help identify any additional ferrous archaeological features within the offshore infrastructure area.</p> <p>Further investigation of anomalies will either eliminate their archaeological significance if found to be non-anthropogenic or modern, or confirm their value as archaeological assets. If the features are confirmed to be of archaeological interest, project design features and avoidance and preventative measures, such as avoidance (enforced by AEZs) or offsetting/remedial actions through a Protocol for Archaeological Discoveries (PAD), are recommended.</p>	Volume 3, Chapter 13 Marine Archaeology Volume 8, Chapter 3 Schedule of Commitments Volume 7, Appendix 7.7 Archaeology Management Plan
	Avoid sites of interest and exclusion zones for marine archaeology	Site/cable route selection stage. Project design stage. EIA stage. Project installation.	<p>An Archaeology Management Plan (AMP) has been developed to ensure that appropriate controls are implemented to manage risks to archaeology and heritage, associated with the construction and operation of the offshore infrastructure.</p> <p>In summary, the AMP includes details of:</p> <ul style="list-style-type: none"> Pre and post construction monitoring activities will be undertaken by the Applicant, to support these a monitoring plan will be developed, all relevant activities will be licensed under the National Monuments Acts 1930-2014 and the results will be assessed and reported by a suitably qualified archaeologist. Measures to avoid impact on known archaeological receptors including: <ul style="list-style-type: none"> Compliance with Underwater Archaeology Unit Guidelines; Implementation of archaeological exclusion zones (AEZs); Liaison with DHLGH through circulation of full method statement; If required material will be moved or removed from the seabed, a watching brief (undertaken by an appropriately qualified and approved archaeologist) Measures to prevent impact on unknown archaeological receptors including: <ul style="list-style-type: none"> Protocol for Archaeological Discovery ; Geoarchaeological assessment of deposits of archaeological potential, following an approved method statement will be undertaken, results will be assessed and reported by a suitably qualified archaeologist. 	Volume 8, Chapter 2 Schedule of Commitments Volume 7, Appendix 7.7 Archaeology Management Plan

Potential Effect	Suggested Project Level Mitigation Measures in OREDP	Timescale	Dublin Array Response	Application Reference (contained with Environmental Impact Assessment Report)
			– If required material will be moved or removed from the seabed, a watching brief (undertaken by an appropriately qualified and approved archaeologist)	
	Record and report potential archaeological and vessel remains to the NMS	Site/cable route selection stage. Project design stage. EIA stage. Project installation.	A Protocol for Archaeological Discoveries (PAD) will be implemented for the offshore infrastructure. The PAD outlines the procedures for reporting and investigating any unexpected archaeological findings that may arise during the various phases of the proposed development. A Retained Archaeologist will provide guidance and assist industry staff in adhering to the PAD. Additionally, the PAD allows for the establishment of temporary exclusion zones around any areas of potential archaeological interest, ensuring timely archaeological advice is provided. Where necessary, archaeological inspections of significant features will be conducted before proceeding with further activities in the area. This protocol is designed to comply with Irish legislation, including notifying the Underwater Archaeology Unit (UAU), and follows the Code of Practice for Seabed Developers (JNAPC, 2006).	Volume 8, Chapter 2 Schedule of Commitments Volume 7, Appendix 7.7 Archaeology Management Plan
Data acquisition	Conform to the legislative requirements of the National Monuments Acts 1930-2004 and follow the codes of practice published by the NMS	Site/cable route selection stage. Project design stage. EIA stage. Project installation.	A Protocol for Archaeological Discoveries (PAD) will be implemented for the offshore infrastructure. The PAD outlines the procedures for reporting and investigating any unexpected archaeological findings that may arise during the various phases of the proposed development. A Retained Archaeologist will provide guidance and assist industry staff in adhering to the PAD. Additionally, the PAD allows for the establishment of temporary exclusion zones around any areas of potential archaeological interest, ensuring timely archaeological advice is provided. Where necessary, archaeological inspections of significant features will be conducted before proceeding with further activities in the area. This protocol is designed to comply with Irish legislation, including notifying the Underwater Archaeology Unit (UAU), and follows the Code of Practice for Seabed Developers (JNAPC, 2006).	Volume 8, Chapter 2 Schedule of Commitments Volume 7, Appendix 7.7 Archaeology Management Plan
	Record and report potential archaeological and vessel remains to the NMS	Site/cable route selection stage. Project design stage. EIA stage. Project installation.	A Protocol for Archaeological Discoveries (PAD) will be implemented for the offshore infrastructure. The PAD outlines the procedures for reporting and investigating any unexpected archaeological findings that may arise during the various phases of the proposed development. A Retained Archaeologist will provide guidance and assist industry staff in adhering to the PAD. Additionally, the PAD allows for the establishment of temporary exclusion zones around any areas of potential archaeological interest, ensuring timely archaeological advice is provided. Where necessary, archaeological inspections of significant features will be conducted before proceeding with further activities in the area. This protocol is designed to comply with Irish legislation, including notifying the Underwater Archaeology Unit (UAU), and follows the Code of Practice for Seabed Developers (JNAPC, 2006).	Volume 8, Chapter 2 Schedule of Commitments Volume 7, Appendix 7.7 Archaeology Management Plan
Commercial Fisheries				
Direct disturbance	Avoid device placement in sensitive areas	Site/cable route selection stage. Project design stage. EIA stage. Project installation.	The positions of WTGs and OSP have been determined using a variety of site-specific data, including metocean data (e.g., wind speed and direction), geophysical and geotechnical survey data (e.g., bathymetry), environmental data (e.g., benthic surveys and archaeological assessments), and stakeholder consultation. The layout of the WTGs has been designed and optimised by considering various constraints identified through the analysis of these datasets, alongside layout principles outlined in relevant guidance for the design of OWFs. Where avoidance is not possible, the layout has been designed to facilitate greater coexistence. WTG layouts have been designed in a manner which maximises the potential for coexistence with a minimum turbine separation distance of 944 metres subject to any micro-siting necessary based on local seabed conditions.	Volume 2, Chapter 6 Project Description
	Avoid key and peak fishing seasons for installation	Site/cable route selection stage. Project design stage. EIA stage.	The planning application includes a Fisheries Mitigation and Management Strategy (Volume 7, Appendix 7.3) to support effective coexistence practices with the commercial fishing industry.	Volume 7, Appendix 7.3 Fisheries Mitigation and Management Strategy (FMMS)

Potential Effect	Suggested Project Level Mitigation Measures in OREDP	Timescale	Dublin Array Response	Application Reference (contained with Environmental Impact Assessment Report)
		Project installation.		
	Clear area of debris post installation	Site/cable route selection stage. Project design stage. EIA stage. Project installation.	<p>Contractors appointed by the Applicant will be expected to adhere to a code of good practice to ensure clear and accurate communication with external parties, and to promote coexistence with the fishing industry.</p> <p>Volume 7, Appendix 7.1 PEMP (Project Environment Management Plan) is a plan developed to ensure that appropriate environmental management practices are followed throughout the lifetime of the proposed development. The PEMP provides the framework within which appropriate environmental management practices will be applied including but not limited to matters such as;</p> <ul style="list-style-type: none"> ▪ A marine pollution contingency plan to address the risks, methods and procedures to deal with any spills and collision incidents of the authorised proposed development in relation to all activities carried out below MHWS; ▪ A chemical risk review to include information regarding how and when chemicals (including vessel fuels) are to be used, stored and transported in accordance with recognised best practice guidance and national and international regulations and commitments; ▪ A marine biosecurity plan detailing how the risk of introduction and spread of invasive alien species will be minimised; ▪ Waste management and disposal arrangements; ▪ An environmental vessel management plan, to determine vessel routing to and from construction sites and ports, to include a code of conduct for vessel operators; and ▪ Dropped object plan for reporting and recovery of dropped objects where they pose a potential hazard to other marine users. 	<p>Volume 7, Appendix 7.3 Fisheries Mitigation and Management Strategy (FMMS)</p> <p>Volume 7, Appendix 7. 1 Project Environmental Management Plan (PEMP)</p>
	Early liaison with the fishing industry could help identify key fishing areas, particularly in the area where there is a lack of fishing effort distribution information for vessels under 15m	Site/cable route selection stage. Project design stage. EIA stage. Project installation.	A Fisheries Management and Mitigation Strategy (FMMS), along with a Fisheries Liaison Officer (FLO), has been established for the offshore infrastructure to facilitate communication and collaboration with the local fishing industry.	Volume 7, Appendix 7.3 Fisheries Mitigation and Management Strategy (FMMS)
Temporary displacement from traditional fishing grounds	Avoid device placement in sensitive areas	Site/cable route selection stage. Project design stage. EIA stage. Project installation.	The positions of WTGs and OSP have been determined using a variety of site-specific data, including metocean data (e.g., wind speed and direction), geophysical and geotechnical survey data (e.g., bathymetry), environmental data (e.g., benthic surveys and archaeological assessments), and stakeholder consultation. The layout of the WTGs has been designed and optimised by considering various constraints identified through the analysis of these datasets, alongside layout principles outlined in relevant guidance for the design of OWFs. A key action taken to avoid or reduce impacts includes the development of WTG layout options to avoid or minimise interaction with known areas of high fishing activity, where feasible. Where avoidance is not possible, the layout has been designed to facilitate greater coexistence. WTG layouts have been designed in a manner which maximises the potential for coexistence with a minimum turbine separation distance of 944 metres subject to any micro-siting necessary based on local seabed conditions.	Volume 2, Chapter 6 Project Description
	Avoid key and peak fishing seasons	Site/cable route selection stage. Project design stage. EIA stage. Project installation.	A Fisheries Management and Mitigation Strategy (FMMS), along with a Fisheries Liaison Officer (FLO), has been established for the offshore infrastructure to facilitate communication and collaboration with the local fishing industry.	Volume 7, Appendix 7.3 Fisheries Mitigation and Management Strategy (FMMS)

Potential Effect	Suggested Project Level Mitigation Measures in OREDP	Timescale	Dublin Array Response	Application Reference (contained with Environmental Impact Assessment Report)
	Liaison with the fishing community to keep them informed of installation operations	Site/cable route selection stage. Project design stage. EIA stage. Project installation.	A Fisheries Management and Mitigation Strategy (FMMS), along with a Fisheries Liaison Officer (FLO), has been established for the offshore infrastructure to facilitate communication and collaboration with the local fishing industry.	Volume 7, Appendix 7.3 Fisheries Mitigation and Management Strategy (FMMS)
Long term displacement from traditional fishing grounds	Avoid device placement in sensitive areas	Site/cable route selection stage. Project design stage. EIA stage. Project operation and maintenance.	The positions of WTGs and OSP have been determined using a variety of site-specific data, including metocean data (e.g., wind speed and direction), geophysical and geotechnical survey data (e.g., bathymetry), environmental data (e.g., benthic surveys and archaeological assessments), and stakeholder consultation. The layout of the WTGs has been designed and optimised by considering various constraints identified through the analysis of these datasets, alongside layout principles outlined in relevant guidance for the design of OWFs. A key action taken to avoid or reduce impacts includes the development of WTG layout options to avoid or minimise interaction with known areas of high fishing activity, where feasible. Where avoidance is not possible, the layout has been designed to facilitate greater coexistence. WTG layouts have been designed in a manner which maximises the potential for coexistence with a minimum turbine separation distance of 944 metres subject to any micro-siting necessary based on local seabed conditions.	Volume 8, Part 3 Schedule of Measures Volume 2, Chapter 5 Consideration of Alternatives
	Consider spacing of turbines at wide enough intervals to permit use of mobile fishing gear	Site/cable route selection stage. Project design stage. EIA stage. Project operation and maintenance.	The proposed development is fully committed to co-existence with the fishing industry within the array site and supports the resumption of fishing during the operational and maintenance phase. The turbine spacing has been designed in such a way that the assessment concludes there will be no long-term significant adverse effects on existing and anticipated future fishing activities within the offshore infrastructure area.	Volume 3, Chapter 9 Commercial Fisheries
	Workshops with expert representatives from the Marine Institute, BIM, industry and other appropriate bodies	Site/cable route selection stage. Project design stage. EIA stage. Project operation and maintenance.	Consultation has been carried out with the Marine Institute, Bord Iascaigh Mhara (BIM), Sea Fisheries Protection Authority (SFPA), and Inland Fisheries Ireland (IFI). Further details can be found in Volume 3, Chapter 9 Commercial Fisheries.	Volume 3, Chapter 9 Commercial Fisheries
	Liaison with industry and BIM	Site/cable route selection stage. Project design stage. EIA stage Project operation and maintenance.	Consultation has been carried out with the Marine Institute, Bord Iascaigh Mhara (BIM), Sea Fisheries Protection Authority (SFPA), and Inland Fisheries Ireland (IFI). Further details can be found in Volume 3, Chapter 9 Commercial Fisheries.	Volume 3, Chapter 9 Commercial Fisheries
Aquaculture – Not Applicable				

Potential Effect	Suggested Project Level Mitigation Measures in OREDP	Timescale	Dublin Array Response	Application Reference (contained with Environmental Impact Assessment Report)
Ports, Shipping and Navigation				
Displacement of shipping	Where feasible site devices away from constraints and areas of high vessel densities	Site/cable route selection stage. Project design stage. Project installation. Project operation and maintenance.	Three vessel traffic surveys were conducted, recording both AIS and non-AIS vessels, and supplemented with visual observation data where available. In addition to these site-specific surveys, a comprehensive desk-based review was carried out to inform the baseline for shipping and navigation. Further details are provided in Volume 3, Chapter 10 Shipping and Navigation.	Volume 3, Chapter 10 Shipping and Navigation
Displacement of shipping	Undertake a navigation risk assessment which should include a survey of all vessels in the vicinity of the proposed development	Site/cable route selection stage. Project design stage. Project installation. Project operation and maintenance.	A Navigational Risk Assessment has been undertaken and presented in Volume 3, Chapter 10 Shipping and Navigation and Volume 4, Appendix 4.3.10-1 Navigation Risk Assessment. The assessment provides a detailed characterisation of the vessels in the vicinity, in line with good international practice, including seasonal surveys.	Volume 3, Chapter 10 Shipping and Navigation and Volume 4, Appendix 4.3.10-1 Navigation Risk Assessment
Decreased trade/supply	Maintain good communications with the relevant ports	Site/cable route selection stage. Project design stage. EIA stage. Project installation stage. Project operation and maintenance.	The proposed development will ensure that all parties on the marine stakeholder distribution list are fully informed of the completion of construction works and the commissioning of the offshore infrastructure. Additionally, the proposed development will ensure that relevant stakeholders are notified via Notices to Mariners (NtM) of any planned or unplanned maintenance activities beyond the routine day-to-day maintenance activities associated with the proposed development.	Volume 4, Appendix 4.3.10-1 Navigation Risk Assessment Volume 7, Appendix 7.6 Vessel Management Plan
	Issue the appropriate notifications during installation and maintenance	Site/cable route selection stage. Project design stage. EIA stage. Project installation stage. Project operation and maintenance.	A Vessel Management Plan has been developed to document the associated measures that will be implemented. The document covers the following areas, including the dissemination of information through appropriate NtMs: <ul style="list-style-type: none"> ▪ Specific navigational safety measures to be implemented during the construction phase; ▪ Specific navigational safety measures to be implemented during the operations and maintenance phase; ▪ How information related to the offshore infrastructure will be disseminated; ▪ Approach to indicative transit corridors from relevant ports to the array site; and ▪ Consideration for areas where anchoring may occur and where it will not be permitted. 	Volume 4, Appendix 4.3.10-1 Navigation Risk Assessment Volume 7, Appendix 7.6 Vessel Management Plan

Potential Effect	Suggested Project Level Mitigation Measures in OREDP	Timescale	Dublin Array Response	Application Reference (contained with Environmental Impact Assessment Report)
	Site selection for device arrays to take into account the requirement for continued access to port and harbours	Site/cable route selection stage. Project design stage. EIA stage. Project installation stage. Project operation and maintenance.	Four vessel traffic surveys were carried out over two summer periods and two winter periods, recording both AIS and non-AIS vessels, supplemented with visual observation data where available. In addition to the site-specific surveys, a thorough desk-based review was conducted to inform the baseline for shipping and navigation. Further information is provided in Volume 3, Chapter 10 Shipping and Navigation.	Volume 3, Chapter 10 Shipping and Navigation
Reduced visibility	Avoiding areas of high vessel densities and areas constrained by land e.g. adjacent to the entrances of ports and Lochs	Site/cable route selection stage. Project design stage. EIA stage. Project installation stage. Project operation and maintenance.	Four vessel traffic surveys were carried out over two summer periods and two winter periods, recording both AIS and non-AIS vessels, supplemented with visual observation data where available. In addition to the site-specific surveys, a thorough desk-based review was conducted to inform the baseline for shipping and navigation. Further information is provided in Volume 3, Chapter 10 Shipping and Navigation.	Volume 3, Chapter 10 Shipping and Navigation
	In busy shipping areas, potential effects may be reduced by minimising the period of installation, the number of vessels required and the area occupied during installation would reduce the potential impact on visibility	Site/cable route selection stage. Project design stage. EIA stage. Project installation stage. Project operation and maintenance.	As part of the design iteration of the proposed development, the project has aimed to minimise the number of offshore structures wherever possible. In addition, vessels will adhere to predefined routes and travel at reduced speeds to minimise the risk of accidental vessel collisions wherever possible. A Project Environmental Management Plan (PEMP) has been developed which contains details of an Environmental Vessel Management Plan (EVMP)(within Volume 7, Appendix 7.1 PEMP) to establish vessel routing to and from construction sites and ports, as well as to include a code of conduct for vessel operators. The EVMP within the PEMP will be used to determine vessel routing to and from construction sites and ports, to include a code of conduct for vessel operators, and the types and specifications of vessels to be used for the construction and operation of the offshore infrastructure. The assessment concludes that there will be no significant adverse effects on regional shipping areas.	Volume 8, Part 2 Schedule of Commitments Volume 7, Appendix 7.1 PEMP
	Any vessels and devices should be lit and marked in accordance with the International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA) guidelines, in agreement with the Commissioners of Irish Lights	Site/cable route selection stage. Project design stage. EIA stage. Project installation stage. Project operation and maintenance.	A Lighting and Marking Plan (LMP) has been developed to outline the lighting requirements during the construction and O&M phases for the offshore infrastructure and the demarcation of the offshore infrastructure area, including construction buoy requirements. The LMP includes the following details: <ul style="list-style-type: none"> ▪ Marking and lighting of the array site in agreement with Irish Lights and in compliance with IALA G1162 (IALA, 2021a); ▪ Buoyed construction area around the array in consultation with Irish Lights; and ▪ Specific aviation lighting requirements to be installed on the turbines. The LMP will be prepared in collaboration with the Irish Aviation Authority (IAA), Department of Defence (DoD), and Irish Coast Guard (IRCG). It will incorporate the DoD's requirement for turbines to be visible to night-vision equipment. The LMP will ensure that appropriate lighting is in place to support aeronautical safety.	Volume 7, Appendix 7.5 Lighting and Marking Plan

Potential Effect	Suggested Project Level Mitigation Measures in OREDP	Timescale	Dublin Array Response	Application Reference (contained with Environmental Impact Assessment Report)
			The LMP will be implemented by the Applicant and its appointed contractor(s), with the plan secured through conditions of the offshore infrastructure consent. The LMP will remain a live document, updated as necessary, and will be submitted to the relevant authorities before the start of construction.	
Collision Risk	Avoid constrained areas or areas of high shipping densities and regularly used shipping routes	Site/cable route selection stage.	Four vessel traffic surveys were carried out over two summer periods and two winter periods, recording both AIS and non-AIS vessels, supplemented with visual observation data where available. In addition to the site-specific surveys, a thorough desk-based review was conducted to inform the baseline for shipping and navigation. Further information is provided in Volume 3, Chapter 10 Shipping and Navigation.	Volume 3, Chapter 10 Shipping and Navigation
		EIA stage.	The characterisation surveys confirm that the proposed offshore infrastructure is not located in areas with high shipping densities or heavily constrained regions. As such, it is concluded that there will be no significant adverse effects on shipping.	
		Project installation stage.		
		Project operation and maintenance.		
	In busy shipping areas, potential effects may be reduced by minimising the period of installation, the number of vessels required and the area occupied during installation	Site/cable route selection stage.	As part of the design iteration of the proposed development, the project has aimed to minimise the number of offshore structures wherever possible.	Volume 8, Part 2 Schedule of Commitments
		Project design stage.	In addition, vessels will adhere to predefined routes and travel at reduced speeds to minimise the risk of accidental vessel collisions wherever possible. A Project Environmental Management Plan (PEMP) has been developed which contains details of an Environmental Vessel Management Plan (EVMP)(within Volume 7, Appendix 7.1 PEMP) to establish vessel routing to and from construction sites and ports, as well as to include a code of conduct for vessel operators.	
		EIA stage.		
		Project installation stage.	The EVMP within the PEMP will be used to determine vessel routing to and from construction sites and ports, to include a code of conduct for vessel operators, and the types and specifications of vessels to be used for the construction and operation of the offshore infrastructure.	
		Project operation and maintenance.	It is concluded that there will be no significant adverse effects on shipping.	
	Maintain good communications with the relevant ports, and issue the appropriate notifications during installation, maintenance, and decommissioning	Site/cable route selection stage.	The proposed development will ensure that all parties on the marine stakeholder distribution list are fully informed of the completion of construction works and the commissioning of the offshore infrastructure. Additionally, the proposed development will ensure that relevant stakeholders are notified via Notices to Mariners (NtM) of any planned or unplanned maintenance activities beyond the routine day-to-day maintenance activities associated with the proposed development. A Vessel Management Plan has been developed to outline the measures that will be in place. The document covers the following areas: <ul style="list-style-type: none">Specific navigational safety measures for the construction phase;Specific navigational safety measures for the operations and maintenance phase;The approach to disseminating information related to the offshore infrastructure;Consideration of indicative transit corridors from relevant ports to the array site; andIdentification of areas where anchoring may or may not occur.	Volume 4, Appendix 4.3.10-1 Navigation Risk Assessment
		Project design stage.		Volume 7, Appendix 7.6 Vessel Management Plan
		EIA stage		
		Project installation stage.		
	The scale of potential effect on navigation should be assessed as part of the EIA and Navigational Risk Assessment as outlined above	Project operation and maintenance.	Assessed in Volume 3, Chapter 10 Shipping and Navigation, it is concluded that there are no significant adverse effects on shipping.	Volume 3, Chapter 10 Shipping and Navigation
		Site/cable route selection stage.		
		Project design stage.		
		EIA stage.		

Potential Effect	Suggested Project Level Mitigation Measures in OREDP	Timescale	Dublin Array Response	Application Reference (contained with Environmental Impact Assessment Report)
		Project installation stage. Project operation and maintenance.		
Recreation and Tourism				
Access Restrictions	Undertake construction, where possible, outside of peak tourist seasons (June to September) to minimise disruption to visitors and local people	Site/cable route selection stage. Project design stage. Project. EIA stage.	Construction noise will be managed in accordance with British Standard BS 5228 1:2009 'Code of Practice for Noise and Vibration Control on Construction and Open Sites – Part 1: Noise'. The appointed contractor will implement the most appropriate noise control measures to ensure compliance with the limits detailed in Volume 5, Chapter 5 Noise and Vibration, aiming to minimise noise to the best practicable extent. Noise control measures for construction activities are outlined in Volume 3, Chapter 16 Noise and Vibration (Terrestrial Receptors). No significant adverse effects are anticipated for visitors or local people as a result of the construction of the offshore infrastructure.	Volume 3, Chapter 16 Noise and Vibration (Terrestrial Receptors)
	Identify and avoid popular routes for sailing or other water sports such as kayaking	Site/cable route selection stage. Project design stage. Project. EIA stage	An assessment of recreational users of the marine environment is presented in Volume 3, Chapter 17 Socio-economic, Tourism, Recreation and Land Use. Furthermore, a Navigational Risk Assessment has been undertaken and presented in Volume 3, Chapter 10 Shipping and Navigation and Volume 4, Appendix 4.3.10-1 Navigation Risk Assessment. Recreational vessels were predominantly observed within coastal regions, transiting to and from various harbours along the coast. The offshore infrastructure is located 10 kilometres (km) from shore, and as such, it is unlikely to have kayakers within the array site. Therefore, no significant adverse effects are predicted as a result of the proposed development.	Volume 3, Chapter 10 Shipping and Navigation Volume 4, Appendix 4.3.10-1 Navigation Risk Assessment
	Where possible, facilitate safe access through arrays for sailing or other water sports	Site/cable route selection stage. Project design stage. Project. EIA stage.	The proposed development will ensure that all parties on the marine stakeholder distribution list are fully informed of the completion of construction works and the commissioning of the offshore infrastructure. Additionally, the proposed development will ensure that relevant stakeholders are notified via Notices to Mariners (NtM) of any planned or unplanned maintenance activities beyond the routine day-to-day maintenance activities associated with the proposed development. A Vessel Management Plan has been developed to outline the measures that will be in place. The document covers the following areas: <ul style="list-style-type: none"> Specific navigational safety measures for the construction phase; Specific navigational safety measures for the operations and maintenance phase; The approach to disseminating information related to the offshore infrastructure; Consideration of indicative transit corridors from relevant ports to the array site; and Identification of areas where anchoring may or may not occur. 	Volume 4, Appendix 4.3.10-1 Navigation Risk Assessment Volume 7, Appendix 7.6 Vessel Management Plan
Noise	Avoid key recreational periods for installation works	Site/cable route selection stage. Project design stage. EIA stage. Project installation stage.	Construction noise will be managed in accordance with British Standard BS 5228 1:2009 'Code of Practice for Noise and Vibration Control on Construction and Open Sites – Part 1: Noise'. The appointed contractor will implement the most appropriate noise control measures to ensure compliance with the limits detailed in Volume 5, Chapter 5 Noise and Vibration, aiming to minimise noise to the best practicable extent. Noise control measures for construction activities are outlined in Volume 5, Chapter 5 Noise and Vibration.	Volume 5, Chapter 5 Noise and Vibration Volume 3, Chapter 16 Noise and Vibration (Terrestrial Receptors)

Potential Effect	Suggested Project Level Mitigation Measures in OREDP	Timescale	Dublin Array Response	Application Reference (contained with Environmental Impact Assessment Report)
	Identify and avoid popular recreational areas when possible	Site/cable route selection stage. Project design stage. EIA stage. Project installation stage.	The impact on recreation has been considered within Volume 3, Chapter 17 Socio-economic, Tourism, Recreation and Land Use. There are several sea-based recreational amenities located along the coastline within the study area. It is possible that individuals using the sea from these locations could be impacted by the proposed offshore infrastructure. However, these impacts have been assessed as part of the EIAR.	Volume 3, Chapter 17 Socio-economic, Tourism, Recreation and Land Use
Safety and Collision Risk	Avoid popular cruising routes, diving areas and key water sport locations	Site/cable route selection stage. Project design stage. Project EIA stage. Project installation stage. Project operation.	An assessment of recreational users of the marine environment is presented in Volume 3, Chapter 17 Socio-economic, Tourism, Recreation and Land Use. Furthermore, a Navigational Risk Assessment has been undertaken and is presented in Volume 3, Chapter 10 Shipping and Navigation and Volume 4, Appendix 4.3.10-1 Navigation Risk Assessment. The assessment concludes that there will be no significant adverse effects on recreational sailing activities.	Volume 3, Chapter 10 Shipping and Navigation Volume 4, Appendix 4.3.10-1 Navigation Risk Assessment
	Incorporate suitable safety features such as lighting, netting and buoys into the device design	Site/cable route selection stage. Project design stage. Project. EIA stage. Project installation stage. Project operation.	A LMP has been prepared to capture construction and O&M phase lighting requirements for the offshore infrastructure and demarcation of the offshore infrastructure, including construction buoy requirements. The LMP includes details of: <ul style="list-style-type: none"> ▪ Marking and lighting of the array site in agreement with Irish Lights and in line with IALA G1162 (IALA, 2021a); ▪ Buoyed construction area around the array in agreement with Irish Lights; and ▪ Specific requirements for aviation lighting to be installed on the turbines. The LMP will be prepared in consultation with the Irish Aviation Authority (IAA), Department of Defence (DoD), and Irish Coastguard (IRCG). It will take into account DoD's requirement for WTGs to be observable by night vision equipment. Netting/buoys are not deemed appropriate for the offshore wind farm.	Volume 7, Appendix 7.5 Lighting and Marking Plan
	Provide suitable information for the public regarding safety	Site/cable route selection stage. Project design stage. Project. EIA stage. Project installation stage. Project operation.	The proposed development will ensure that all parties on the marine stakeholder distribution list are fully informed of the completion of construction works and the commissioning of the offshore infrastructure. Additionally, the proposed development will ensure that relevant stakeholders are notified via Notices to Mariners (NtM) of any planned or unplanned maintenance activities beyond the routine day-to-day maintenance activities associated with the proposed development. A Vessel Management Plan has been developed to outline the measures that will be in place. The document covers the following areas: <ul style="list-style-type: none"> ▪ Specific navigational safety measures for the construction phase; ▪ Specific navigational safety measures for the operations and maintenance phase; ▪ The approach to disseminating information related to the offshore infrastructure; ▪ Consideration of indicative transit corridors from relevant ports to the array site; and ▪ Identification of areas where anchoring may or may not occur. 	Volume 4, Appendix 4.3.10-1 Navigation Risk Assessment Volume 7 Appendix 7.5 Vessel Management Plan

Potential Effect	Suggested Project Level Mitigation Measures in OREDP	Timescale	Dublin Array Response	Application Reference (contained with Environmental Impact Assessment Report)
	Restrict access to construction sites	Site/cable route selection stage. Project design stage. Project. EIA stage. Project installation stage. Project operation.	Measures to avoid or otherwise minimise disturbance to both human and ecological receptors are included in the PEMP, alongside the LMP, which addresses appropriate lighting and marking of the offshore environment. The proposed development will ensure that all parties on the marine stakeholder distribution list are fully informed of the completion of construction works and the commissioning of the offshore infrastructure. Additionally, the proposed development will ensure that relevant stakeholders are notified via Notices to Mariners (NtM) of any planned or unplanned maintenance activities beyond the routine day-to-day maintenance activities associated with the proposed development. A Vessel Management Plan has been developed to outline the measures that will be in place.	Volume 7, Part 1 PEMP (Project Environmental Management Plan) Volume 7, Appendix 7.5 Lighting and Marking Plan Volume 7, Appendix 7.6 Vessel Management Plan
	Observe good practice during construction, removal and maintenance	Site/cable route selection stage. Project design stage. Project. EIA stage. Project installation stage. Project operation.	Measures to avoid or minimise disturbance to both human and ecological receptors are included in the PEMP. In addition, a Construction Environmental Management Plan (CEMP) has been produced to accompany the Planning Application (Volume 7, Appendix 7.8), and will be finalised post-consent. The CEMP sets out environmental management measures to be adopted during construction phase. The PEMP and CEMP outline a series of noise abatement measures to be adopted by the Applicant's contractors in accordance with British Standard BS 5228-1:2009, aimed at reducing noise levels during the construction phase. Similar best practices will be maintained throughout the operational and decommissioning phases.	Volume 7, Appendix 7.1 PEMP (Project Environmental Management Plan) Volume 7, Appendix 7.8 CEMP (Construction Environmental Management Plan) Volume 2, Chapter 6 Project Description
Disturbance to Wildlife	Avoid areas that are popular with tourists and wildlife tour operators	Site/cable route selection stage. Project design stage. Project EIA stage.	The proposed development is for an offshore wind farm and associated infrastructure. Its purpose is not for the promotion of sustainable water-based sports and marine recreation and therefore this policy objective does not apply. The design of the proposed Operations and Maintenance (O&M) base has been completed following detailed consultation with Dún Laoghaire-Rathdown County Council to ensure that the proposed construction and operational phase activities are conducted in a manner which does not affect current or future water-based sports and marine recreation within the harbour or its environs. The proposed O&M base is located within a part of the harbour which has restricted public access for operational control, safety and security reasons. In accordance with the terms and conditions of the Offshore Renewable Electricity Support Scheme (ORESS1), Dublin Array must provide a community benefit fund. The community benefit fund will enhance social benefits of local communities in the locality of the proposed development, with access to funding made available during the operational phase, and for a minimal period of 20 years from the commercial operation date. Given the absence of physical infrastructure within the tourism economy areas, the tourism economy is considered to have low sensitivity due to its relative distance from the works.	Volume 3, Chapter 17 Socio-economic, Tourism, Recreation and Land Use

Potential Effect	Suggested Project Level Mitigation Measures in OREDP	Timescale	Dublin Array Response	Application Reference (contained with Environmental Impact Assessment Report)
	Other mitigation measures aimed at reducing or avoiding disturbance to wildlife including sea mammals and birds is set out in the relevant parts of this table	Site/cable route selection stage. Project design stage. Project EIA stage.	Noted.	Not Applicable
Aviation and Radar				
Collision	Ensure wind devices are lit with aviation lights in accordance with OAM 09/02 "Offshore Wind Farms Conspicuity Requirements"	Site selection stage. Project design stage. Project EIA stage. Project installation stage. Project operation.	A LMP has been prepared to capture construction and O&M phase lighting requirements for the offshore infrastructure and demarcation of the offshore infrastructure, including construction buoy requirements. The LMP includes details of: <ul style="list-style-type: none"> Marking and lighting of the array site in agreement with Irish Lights and in line with IALA G1162 (IALA, 2021a); Buoyed construction area around the array in agreement with Irish Lights; and Specific requirements for aviation lighting to be installed on the turbines. The LMP will be prepared in consultation with the Irish Aviation Authority (IAA), Department of Defence (DoD), and Irish Coastguard (IRCG). It will take into account DoD's requirement for WTGs to be observable by night vision equipment. The LMP will ensure appropriate lighting is in place to facilitate aeronautical safety.	Volume 7, Appendix 7.5 Lighting and Marking Plan
	As required under the Obstacles to Aircraft in Flight Order, S.I. 215 of 2005, provide notification of the erection of wind devices to the Irish Aviation Authority (IAA)	Project installation stage. Project operation	The IAA will be notified of the locations, heights, and lighting status of the wind turbines, along with the estimated and actual dates of construction and the maximum heights of any construction equipment to be used, prior to the commencement of construction. This will ensure the inclusion of this information on aviation charts and in the IAA IAIP. This notification process will comply with the OREDP (DCCAE, 2014), which mandates that the IAA be informed of the construction and location of wind turbines.	Volume 3, Chapter 12 Aviation and Radar Volume 8, Chapter2 Schedule of Commitments
Radar Interference	Consultation with the IAA will be required and the location of wind devices supplied so they can be accurately plotted on the radar and any signals received from that area will not be confused with aeroplanes	Site/cable route selection stage. Project design stage. Project. EIA stage.	Volume 3, Chapter 12 Aviation and Radar presents consultation with relevant authorities, including the IAA. No significant adverse effects are predicted as a result of the proposed offshore infrastructure on radar operations, including those of Dublin Airport ATC.	Volume 3, Chapter 12 Aviation and Radar Volume 8, Chapter 2 Schedule of Commitments
Disruption to general activities	Avoidance of byelawed and danger sites	Site/cable route selection stage.	The proposed offshore infrastructure is outside any promulgated Military Exercise Areas.	Volume 3, Chapter 12 Aviation and Radar

Potential Effect	Suggested Project Level Mitigation Measures in OREDP	Timescale	Dublin Array Response	Application Reference (contained with Environmental Impact Assessment Report)
		Project design stage. Project installation.		
	Carry out site selection studies in conjunction with liaison with the Department of Defence and the Ministry of Defence, UK where applicable	Site/cable route selection stage. Project design stage. Project installation.	<p>The proposed offshore infrastructure is outside any promulgated Military Exercise Areas. The Department of Defence (MoD) responded to the proposed development's Offshore Scoping Response on the 26 September 2020 with the following observations:</p> <ul style="list-style-type: none"> All WTG should be illuminated with high intensity aviation obstacle lighting. Aviation lighting should be incandescent or of a type visible to Night Vision Devices (NVD) compatible with EASA Safety Information Bulletin (SIB) 2019-04. <p>The Applicant is committed to marking and lighting in agreement with Irish Lights and in line with IALA G1162 (IALA, 2021a);</p> <p>As there is no meaningful effect-receptor pathway, this impact has therefore been scoped out of further assessment.</p>	Volume 3, Chapter 12 Aviation and Radar
Cables and Pipelines				
Direct damage	Use of recommended 500m avoidance zone	Site/cable route selection stage. Project design stage.	<p>For the consideration of potential array sites on the east coast of Ireland, a comprehensive site selection process was developed, which took into account all factors influencing the economic viability, technical feasibility, and environmental acceptability of a potential OWF offshore infrastructure in the area. This included an analysis of existing underwater pipelines and cables. As a result of this constraints analysis, the array site boundary has been selected to avoid active utility assets such as underwater pipelines and cables.</p> <p>Similarly, the route selection for the offshore ECC has been informed by the location of existing seabed infrastructure. The offshore ECC has been designed to consider known subsea obstructions, including cables and pipelines, with an effort to enable perpendicular crossings where possible.</p>	Volume 8, Chapter 2 Schedule of Commitments
	Use of crossing agreements in accordance with The International Cable Protection Committee (ICPC) guidelines	Site/cable route selection stage. Project design stage. Project installation.	<p>Consultation with existing cable operators and obtaining approval for cable crossing agreements will be required prior to decommissioning. Cable crossings agreements between the Applicant, Codling Wind Park and EirGrid are proposed to include the following general design principals:</p> <ul style="list-style-type: none"> Vertical separation between cables will be a minimum of 300mm in addition to burial depths of the first cable; The minimum mattress thickness will be 300 mm and constructed of high-density concrete; Pre lay mattress(s) will be installed over the pre-installed (buried) cable perpendicular to the direction of the lay of the crossing cable; Top mattresses or rock armour will be installed (subject to crossing agreement), which will cover approximately 50 m on each side of the first cables; The profile of crossing will not reduce navigable depth by greater than 5% of surrounding charted depths referenced to chart datum; and The horizontal crossing angle will be between 60 – 90° but will endeavour to achieve as close to 90° as possible. 	Volume 2, Chapter 6 Project Description
	The seabed lease pertaining to existing infrastructure will legally need to be observed when selecting sites for	Site/cable route selection stage. Project design stage.	<p>Three oil well heads were identified within the 17km study area, which extends 17km from the boundary of the proposed array area and offshore ECC. A fourth oil well head is located just outside the 17km study area. These are defined as 'Dry Holes' by DCCAE (2020)¹, and therefore these are historic and no longer active. The proposed development is located within the extents of the Kish Bank Basin - an area that was previously licenced for petroleum industry exploration. However, as of 2020, the Kish Bank Basin is no longer licensed for oil exploration.</p>	Volume 3, Chapter 11 Infrastructure and Other Users

¹ DCCAE, 2020, Available online: <https://www.dccae.gov.ie/en-ie/natural-resources/topics/Oil-Gas-Exploration-Production/Pages/home.aspx> (Accessed 06/01/2024)

Potential Effect	Suggested Project Level Mitigation Measures in OREDP	Timescale	Dublin Array Response	Application Reference (contained with Environmental Impact Assessment Report)
	devices and export cables	Project installation.	No approved or active petroleum activities or petroleum production infrastructure have been identified within the study area. Furthermore, the proposed development is not consistent with the types of development restricted under the Government's 2019 commitment to cease issuing of licences for new exploration and extraction activity. As such, there are no predicted impacts associated with the proposed development.	
Access Restrictions	Use of recommended 500m avoidance zone	Site/cable route selection stage. Project design stage.	A thorough site selection process was developed for the potential array sites on the east coast of Ireland, taking into account all aspects that would influence the economic viability, technical feasibility, and environmental acceptability of the proposed OWF offshore infrastructure. This process included an analysis of existing underwater pipelines and cables. The array site boundary and Offshore ECC was chosen to avoid active utility assets such as underwater pipelines and cables. Similarly, the route selection for the offshore ECC was guided by the location of existing seabed infrastructure. The offshore ECC route has been designed to consider known subsea obstructions, including cables and pipelines, with efforts made to enable perpendicular crossings wherever possible.	Volume 2, Chapter 6 Project Description Volume 8, Chapter 2 Schedule of Commitments
	Use of crossing agreements in accordance with ICPC guidelines	Site/cable route selection stage. Project design stage	Consultation with existing cable operators and obtaining approval for cable crossing agreements will be required prior to decommissioning. Cable crossings agreements between the Applicant, CWP and EirGrid are proposed to include the following general design principals: <ul style="list-style-type: none"> Vertical separation between cables will be a minimum of 300mm in addition to burial depths of the first cable; The minimum mattress thickness will be 300 mm and constructed of high-density concrete; Pre lay mattress(s) will be installed over the pre-installed (buried) cable perpendicular to the direction of the lay of the crossing cable; Top mattresses or rock armour will be installed (subject to crossing agreement), which will cover approximately 50 m on each side of the first cables; The profile of crossing will not reduce navigable depth by greater than 5% of surrounding charted depths referenced to chart datum; and The horizontal crossing angle will be between 60 – 90° but will endeavour to achieve as close to 90° as possible. 	Volume 2, Chapter 6 Project Description Volume 8, Chapter 2 Schedule of Commitments
	The seabed lease pertaining to existing infrastructure will legally need to be observed when selecting sites for devices and export cables	Site/cable route selection stage. Project design stage.	Three oil well heads were identified within the 17km study area, which extends 17km from the boundary of the proposed array area and offshore ECC. A fourth oil well head is located just outside the 17km study area. These are defined as 'Dry Holes' by DCCAE (2020) ² , and therefore these are historic and no longer active. The proposed development is located within the extents of the Kish Bank Basin - an area that was previously licenced for petroleum industry exploration. However, as of 2020, the Kish Bank Basin is no longer licensed for oil exploration. No approved or active petroleum activities or petroleum production infrastructure have been identified within the study area. Furthermore, the proposed development is not consistent with the types of development restricted under the Government's 2019 commitment to cease issuing of licences for new exploration and extraction activity. As such, there are no predicted impacts associated with the proposed development.	Volume 3, Chapter 11 Infrastructure and Other Users
Dredging and Disposal Areas	Avoid development within 500m of dredging and/or disposal sites	Site/cable route selection stage. Project design stage. Project installation.	The Foreshore and Dumping at Sea (Amendment) Act 2009 (EPA, 2009) designates the EPA as the authority responsible for issuing Dumping at Sea Permits. There is no development proposed within 500 metres of dredging or disposal sites.	Volume 2, Chapter 6, Project Description

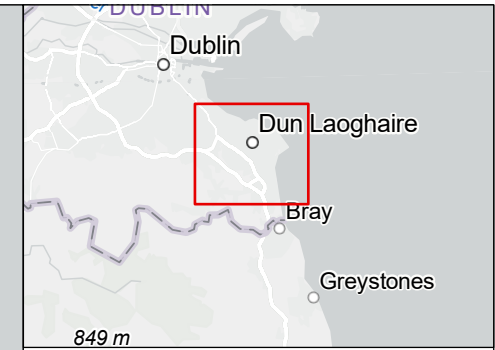
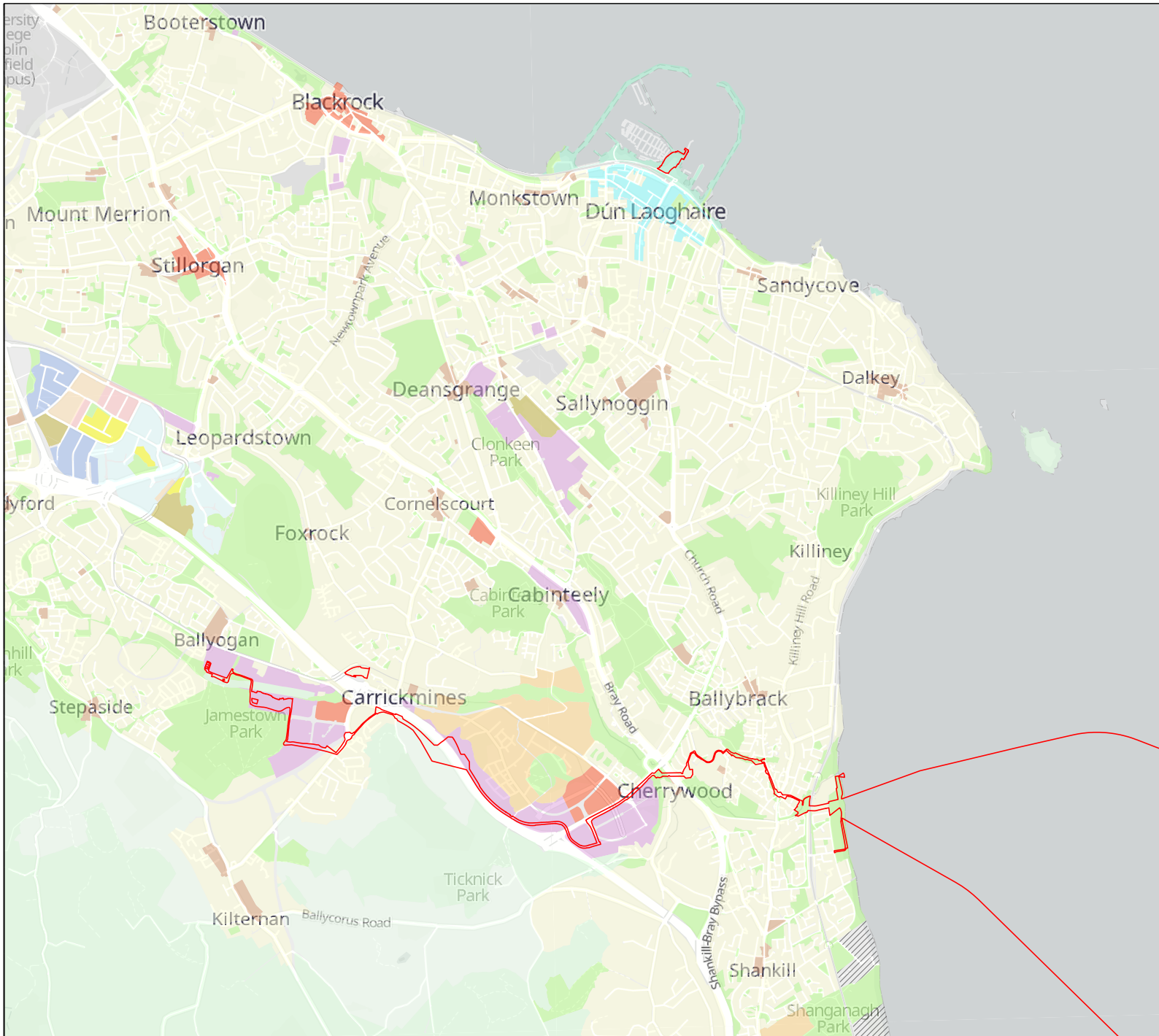
² DCCAE, 2020, Available online: <https://www.dccae.gov.ie/en-ie/natural-resources/topics/Oil-Gas-Exploration-Production/Pages/home.aspx> (Accessed 06/01/2024)

Potential Effect	Suggested Project Level Mitigation Measures in OREDP	Timescale	Dublin Array Response	Application Reference (contained with Environmental Impact Assessment Report)
		Project operation and maintenance.		
	Notification of port and harbour authorities of the proposed works	Site/cable route selection stage. Project design stage. Project installation. Project operation and maintenance.	<p>A Vessel Management Plan has been prepared for shipping and navigation purposes, including the safe navigation of fishing vessels. The plan includes the commitment to consult with the relevant harbour authorities.</p> <p>The proposed development will ensure that all parties on the marine stakeholder distribution list are fully informed of the completion of construction works and the commissioning of the offshore infrastructure. Additionally, the proposed development will ensure that relevant stakeholders are notified via Notices to Mariners (NtM) of any planned or unplanned maintenance activities beyond the routine day-to-day maintenance activities associated with the proposed development.</p>	Volume 7, Appendix 7.6 Vessel Management Plan
Existing Renewable Energy Infrastructure				
Access restrictions	Careful site selection to factor in the access needs of existing infrastructure to ensure that the proposed sites do not conflict with the activities of existing renewable energy infrastructure	Site/cable route selection stage. Project design stage. Project EIA stage. Project operation and maintenance.	There is currently only one operational offshore wind farm in Ireland, Arklow Bank Phase 1, which is located 37 km south of the offshore infrastructure and falls outside the study area.	Volume 3, Chapter 11 Infrastructure and Other Users
	Communication with existing wind farm operators	Site/cable route selection stage. Project design stage. Project EIA stage. Project operation and maintenance.	All five Phase 1 wind farm developers have been in regular communication, actively encouraging alignment and data sharing where practicable to date.	Not Applicable
Removal of energy resource	Careful site selection taking into account resource assessment and modelling to determine if and how commercial-scale arrays could co-exist with the existing renewable energy infrastructure	Site/cable route selection stage. Project design stage. Project EIA stage.	<p>There is currently only one operational offshore wind farm in Ireland, Arklow Bank Phase 1, located 37 km to the south of the offshore infrastructure.</p> <p>While future offshore wind farms are under consideration, there remains significant uncertainty regarding any Phase 2 offshore infrastructures. Any future developments will likely be subject to the Designated Maritime Area Plan process.</p> <p>No wave and tidal offshore infrastructure sites are located on the east coast of Ireland.</p>	Volume 3, Chapter 11 Infrastructure and Other Users
Natural Gas & CO2 Storage				
Sterilisation of region	No specific mitigation measures identified	Site/cable route selection stage. Project design stage.	Not Applicable	Not Applicable

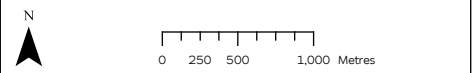
Potential Effect	Suggested Project Level Mitigation Measures in OREDP	Timescale	Dublin Array Response	Application Reference (contained with Environmental Impact Assessment Report)
		Project EIA stage		
	Consultation with the relevant regulatory body to establish areas of search for possible future gas/carbon storage sites within Irish waters	Site/cable route selection stage. Project design stage. Project EIA stage.	Future offshore wind farm developments are under consideration; however, there is significant uncertainty regarding any Phase 2 offshore infrastructures. Any such developments are expected to be subject to the Designated Maritime Area Plan process.	Not Applicable
Seascape				
Effects on seascape from offshore wind developments	Consideration should be given to locating devices at a maximum distance from the shore/coast (within technological constraints)	Project Design Stage.	The distance of the array site from the coastline (minimum 10 km) helps to reduce the magnitude of visual impact when viewed from the shoreline, especially in comparison to other potential sites located closer to the shore.	Volume 3, Chapter 15 Seascape, Landscape and Visual Impact Assessment (SLVIA) Volume 2, Chapter 5 Consideration of Alternatives
	Wind farms should not be sited where they appear to block or close the entrance to bays/ loughs/ narrows/ sounds or where they separate a bay from the open sea	Project Design Stage.	The offshore infrastructure is located approximately 10 km off the east coast of Ireland, off the coast of counties Dublin and Wicklow. It will not obstruct or close the entrance to any bays, loughs, narrows, sounds, or areas where they separate a bay from the open sea.	Volume 3, Chapter 15 Seascape, Landscape and Visual Impact Assessment (SLVIA)
	Wind farms should reflect the shape of the coastline and align with the dominant coastal edge	Project Design Stage.	The array site is aligned parallel to the coastline.	Volume 3, Chapter 15 Seascape, Landscape and Visual Impact Assessment (SLVIA) Volume 2, Chapter 6 Project Description
	Wind farms should not be sited where they have the potential to fill a bay. The open, expansive nature of the water surface area should be allowed to continue to dominate	Project Design Stage.	The offshore infrastructure is located c. 10 km off the east coast of Ireland, off counties Dublin and Wicklow on the Kish and Bray Banks.	Volume 3, Chapter 15 Seascape, Landscape and Visual Impact Assessment (SLVIA)
	Wind farms should avoid locations near scattered settlements, as the scale of the array has the potential to dominate the fragmented pattern of the settlement	Project Design Stage.	The distance of the array site from the coastline (10 km) offers the advantage of reducing the visual impact when viewed from the shoreline, particularly when compared to other potential sites located closer to the coast. The visual impact has been addressed in Volume 3, Chapter 15 of the EIAR.	Volume 3, Chapter 15 Seascape, Landscape and Visual Impact Assessment (SLVIA)

Potential Effect	Suggested Project Level Mitigation Measures in OREDP	Timescale	Dublin Array Response	Application Reference (contained with Environmental Impact Assessment Report)
	Wind farms should be avoided where they conflict with the scale and subtleties of complex, indented coastal forms	Project Design Stage	The distance of the array site from the coastline (10 km) offers the advantage of reducing the visual impact when viewed from the shoreline, particularly when compared to other potential sites located closer to the coast. The visual impact has been addressed in Volume 3, Chapter 15 of the EIAR.	Volume 3, Chapter 15 Seascape, Landscape and Visual Impact Assessment (SLVIA)
	Consideration should be given to locating devices in already industrialised and developed seascapes	Project Design Stage	The array is located off the coasts of County Dublin and County Wicklow. The proposed Operations and Maintenance Base is located in Dun Laoghaire Harbour adjacent to the existing ferry terminal building. The onshore substation has been located in the townland of Jamestown adjacent to a clustering of existing municipal and utility services near the Carrickmines Retail Park. The visual impact has been addressed in Volume 3, Chapter 15 of the EIAR and Volume 5, Chapter 7 of the EIAR.	Volume 3, Chapter 15 Seascape, Landscape and Visual Impact Assessment (SLVIA) Volume 5, Chapter 7 Landscape and Visual
Climate				
Potential sterilisation of future gas/carbon storage areas	Consultation to establish areas of search for possible future gas/carbon storage sites within Irish waters	Site selection. Project design.	Not applicable, as no areas of search for potential future gas/CCS have been identified in the vicinity of the proposed development.	Not Applicable

B. Land use zoning relative to proposed onshore electrical system



- Planning Application Boundary
- Development Plan Service - Zoning Objectives**
- | | |
|--------------|---------------|
| Objective A | Objective LIW |
| Objective A1 | Objective MH |
| Objective A2 | Objective MIC |
| Objective B | Objective MOC |
| Objective DC | Objective MTC |
| Objective E | Objective NC |
| Objective F | Objective OE |
| Objective G | Objective TLI |
| Objective GB | Objective W |



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PROJECT TITLE
Dublin Array

DRAWING TITLE
Landuse Zoning

VER	DATE	REMARKS	Drawn	Checked
1	17/09/2024	Ready for release	DB	CCF

DRAWING NUMBER:
005374138-01

SCALE	PLOT SIZE	DATUM	PROJECTION
1:50,000	A3	IREN1995	IREN1995 Irish Transverse Mercator

KISH Offshore Wind Limited
BRAY Offshore Wind Limited
DublinArray
Generation for generations

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C. National Marine Planning Framework Policy Responses

Policy	Policy Wording	Response	Related EIAR Chapter
OVERARCHING MARINE POLICY			
Environmental - Ocean Health			
Ocean Health Policy 1	<p>Compliance with NMPF policies relating to:</p> <ul style="list-style-type: none"> ▪ Biodiversity ▪ Non-Indigenous Species ▪ Water Quality ▪ Sea-floor and Water Column Integrity ▪ Marine litter ▪ Underwater Noise <p>should include demonstration of contribution to the relevant MSFD targets identified.</p>	<p>Compliance with NMPF policies has been designed into the proposed development in so far as possible through Project Design Features that were selected as part of the iterative design process, which are demonstrated to avoid and prevent significant adverse effects on the environment. In order to minimise significant adverse impacts on receptors, alternative locations and designs for the proposed development were considered and these are presented in Volume 2, Chapter 5 Consideration of Alternatives. In addition, other avoidance and preventative measures were identified throughout the early development phase of the Dublin Array project, also to avoid and prevent likely significant effects, which go beyond design features. These measures were incorporated as constituent elements of the project, they are referenced in the project description chapter of this EIAR and they form part of the project for which planning permission is being sought. These measures are distinct from design features and are found within the suite of management plans included in Volume 7 Planning Stage Plans of the EIAR. Where a likely significant effect was identified during the EIA assessment process, additional mitigations are proposed in order to comply with NMPF policies.</p> <p>The MSFD targets have been considered in the following chapters of the EIAR:</p> <ul style="list-style-type: none"> ▪ Biodiversity targets (including food webs and sea-floor integrity) are addressed in the following chapters of the EIAR including Volume 3: Chapters 1 Marine Geology, Oceanography and Physical Processes, Chapter 2 Marine Water and Sediment Quality, Chapter 3 Benthic Subtidal and Intertidal Ecology, Chapter 4 Fish and Shellfish Ecology, Chapter 5 Marine Mammals, Chapter 6 Offshore and Intertidal Ornithology, and Chapter 7 Bats in the Offshore Environment. No significant effects have been concluded in the EIAR for the relevant biodiversity targets. ▪ Commercial fish & shellfish targets are addressed in Volume 3, Chapter 9 Commercial Fisheries. No significant effects have been concluded in the EIAR for the relevant commercial fish and shellfish targets following the implementation of appropriate mitigations measures. ▪ Eutrophication targets are addressed in the following chapter: Volume 3, Chapter 2 Marine Water and Sediment Quality. No source-receptor-pathways are identified for a deterioration of dissolved oxygen, phytoplankton blooms or eutrophication, as a result of the proposed construction activities. ▪ Contaminants targets are addressed in the EIAR in Volume 3, Chapter 2 Marine Water and Sediment Quality. No significant effects have been concluded in the EIAR for the relevant contaminant's targets. ▪ In respect of Marine Litter targets a Project Environment Management Plan (PEMP) has been submitted with the planning application (Part 3 Environmental Impact Assessment Report, Volume 7, Appendix 1) and outlines a Marine Pollution Contingency plan and Waste Management and Disposal Arrangements plan. ▪ Non-indigenous species targets are addressed in the following parts of the EIAR: Volume 3, Chapter 3 Benthic, Subtidal and Intertidal Ecology. An Invasive Species Management Plan has been submitted with the planning application, as part of the Project Environmental Management Plan (PEMP)(Volume 7, Appendix 7.1) and the Construction Environmental Management Plan (CEMP) (Volume 7, Appendix 7.8). No significant effects have been concluded in the EIAR for the relevant Non-indigenous species targets. ▪ Hydrographical conditions targets are addressed in the following chapters of the EIAR: Volume 3, Chapter 1 Marine Geology, Oceanography and Physical Processes, and Chapter 2 Marine Water and Sediment Quality. No significant effects have been concluded in the EIAR for the relevant hydrographical condition's targets. ▪ Energy (including underwater noise) targets have been addressed in the following chapters of the EIAR: Volume 3, Chapter 3 Benthic Subtidal and Intertidal Ecology, Chapter 4 Fish and Shellfish Ecology, and Chapter 5 Marine Mammals. An Underwater Noise Assessment Report has also been submitted with the Planning application (Volume 4, Appendix 4.3.5-7). No significant effects have been concluded in the EIAR for the relevant energy targets. 	<p>Volume 3, Chapter 1 Marine Geology, Oceanography and Physical Processes</p> <p>Volume 3, Chapter 2 Marine Water and Sediment Quality</p> <p>Volume 3, Chapter 3 Benthic Subtidal and Intertidal Ecology</p> <p>Volume 3, Chapter 4 Fish and Shellfish Ecology</p> <p>Volume 3, Chapter 5 Marine Mammals</p> <p>Volume 3, Chapter 6 Offshore and Intertidal Ornithology</p> <p>Volume 3, Chapter 7 Bats in the Offshore Environment</p> <p>Volume 3, Chapter 9 Commercial Fisheries</p>
Biodiversity			
Biodiversity Policy 1	<p>Proposals incorporating features that enhance or facilitate species adaptation or migration, or natural native habitat connectivity will be supported, subject to the outcome of statutory environmental assessment processes and subsequent decision by the competent authority, and where they</p>	<p>As demonstrated by the EIAR and the Natura Impact Statement (NIS)(see Part 4 Habitats Directive Assessments of the planning application) as appropriate, the Applicant has sought to avoid, minimise or mitigate any significant adverse impacts on natural habitat connectivity (EIAR Volume 3, Chapter 3 Benthic, Subtidal and Intertidal Ecology), on diadromous fish migratory routes (EIAR Volume 3, Chapter 4 Fish and Shellfish Ecology), on ornithology (EIAR Volume 3, Chapter 6 Offshore and Intertidal Ornithology), on marine mammals (EIAR Volume 3, Chapter 5 Marine Mammals), on nature conservation sites (EIAR Volume 3, Chapter 8 Nature Conservation), and on offshore bats (EIAR Volume 3, Chapter 7 Offshore Bats).</p>	<p>Volume 3, Chapter 3 Benthic, Subtidal and Intertidal Ecology</p> <p>Volume 3, Chapter 4 Fish and Shellfish Ecology</p> <p>Volume 3, Chapter 5 Marine Mammals</p>

Policy	Policy Wording	Response	Related EIAR Chapter
	contribute to the policies and objectives of this NMPF. Proposals that may have significant adverse impacts on species adaptation or migration, or on natural native habitat connectivity must demonstrate that they will, in order of preference and in accordance with legal requirements: a) avoid, b) minimise, or c) mitigate significant adverse impacts on species adaptation or migration, or on natural native habitat connectivity		Volume 3, Chapter 6 Offshore and Intertidal Ornithology Volume 3, Chapter 7 Offshore Bats Volume 3, Chapter 8 Nature Conservation NIS (Habitats Directive Assessments: Part 4 of planning application)
Biodiversity Policy 2	Proposals that protect, maintain, restore and enhance the distribution and net extent of important habitats and distribution of important species will be supported, subject to the outcome of statutory environmental assessment processes and subsequent decision by the competent authority, and where they contribute to the policies and objectives of this NMPF. Proposals must avoid significant reduction in the distribution and net extent of important habitats and other habitats that important species depend on, including avoidance of activity that may result in disturbance or displacement of habitats	As demonstrated by the EIAR and/or the Natura Impact Statement as appropriate, the Applicant has sought to avoid significant reduction in the distribution and extent of important habitats, or their habitats that important species depend upon, through sensitive design and appropriate avoidance, preventative and additional mitigation. There will be no adverse impact, and significant loss of habitats, has been avoided and / or mitigated.	Volume 3, Chapter 1 Marine Geology, Oceanography and Physical Processes Volume 3, Chapter 3 Benthic, Subtidal and Intertidal Ecology NIS (Habitats Directive Assessments: Part 4 of planning application)
Biodiversity Policy 3	Where marine or coastal natural capital assets are recognised by Government: <ul style="list-style-type: none"> Proposals must seek to enhance marine or coastal natural capital assets where possible. Proposals must demonstrate that they will in order of preference, and in accordance with legal requirements: a) avoid, b) minimise, or c) mitigate significant adverse impacts on marine or coastal natural capital assets, or d) if it is not possible to mitigate significant adverse impacts on marine or coastal natural capital assets proposals must set out the reasons for proceeding. 	Within the EIAR, natural capital assets are considered in Section 2.6 Receiving environment of Volume 3, Chapter 2 Marine Water and Sediment Quality and assessed in Section 2.13 – 2.15 Environmental assessment. Significant adverse effects have been avoided (as presented in Section 2.13 – 2.15) with project design features and avoidance and preventative measures presented in Section 2.12. Natural capital assets are also considered in Section 4.6 Receiving Environment of Volume 3, Chapter 4 Fish and Shellfish Ecology and potential impacts to these receptors have been assessed in Section 4.16 – 4.18 Environmental assessment. Adverse impacts have been avoided and / or mitigated.	Volume 3, Chapter 2 Marine Water and Sediment Quality Volume 3, Chapter 4 Fish and Shellfish Ecology
Biodiversity Policy 4	Proposals must demonstrate that they will, in order of preference and in accordance with legal requirements:	Mobile species are considered in Section 4.6 Receiving environment of Volume 3, Chapter 4 Fish and Shellfish Ecology and potential impacts to these receptors have been assessed in Section 4.16 – 4.18 Environmental assessment. Adverse impacts have been avoided and / or mitigated.	Volume 3, Chapter 4 Fish and Shellfish Ecology Volume 3, Chapter 5 Marine Mammals

Policy	Policy Wording	Response	Related EIAR Chapter
	a) avoid, b) minimise, or c) mitigate significant disturbance to, or displacement of, highly mobile species.	<p>Volume 3, Chapter 6 Offshore and Intertidal Ornithology considers impacts in Section 6.15 – 6.17 Environmental assessment of the proposed development on intertidal and marine birds, during breeding, non-breeding, and where relevant migration, in relation to the three phases:</p> <ul style="list-style-type: none"> Construction: Having considered all impacts (disturbance and displacement, indirect and direct effects on habitat, and changes in prey availability), the proposed development would not give rise to significant residual effects. Operation&Maintenance (O&M): Having considered all impacts (disturbance and displacement, indirect and direct effects on habitat, changes in prey availability, and collision) the the proposed development would not give rise to significant residual effects. Decommissioning: Having considered all impacts (disturbance and displacement, and indirect and direct effects on habitat) the the proposed development would not give rise to significant residual effects. <p>These conclusions are supported by appropriate measures which ensure that significant effects can be avoided for intertidal and marine ornithological receptors during key periods, and adverse effects avoided for designated sites (for which birds are a species of conservation importance) both from the project alone and in combination with other plans and projects. Those project design features and avoidance and preventative measures are set out in Section 6.14.</p> <p>Volume 3, Chapter 5 Marine Mammals considers impacts in Section 5.13 – 5.15 Environmental assessment of the proposed development on marine mammals, in relation to the three phases:</p> <ul style="list-style-type: none"> Construction: Having considered all impacts (auditory injury, disturbance and displacement (auditory), vessel disturbance, changes in prey availability, increases in suspended sediment, and vessel collision), the the proposed development would not give rise to significant residual effects. O&M: Having considered all impacts (disturbance and displacement from operational noise, changes in prey availability, increases in suspended sediment, and vessel collision) the proposed development would not give rise to significant residual effects. Decommissioning: Having considered all impacts (auditory injury, increases in suspended sediment, changes in prey availability, vessel collision) the proposed development would not give rise to significant residual effects. <p>These conclusions are supported by appropriate measures which ensure that significant effects can be avoided for marine mammals, and adverse effects avoided for designated sites (for which marine mammals are a qualifying interest) both from the project alone and in combination with other plans and projects. Those project design features and avoidance and preventative measures are set out in Section 5.12.</p> <p>The Applicant has decided to make an application to NPWS on a precautionary basis for a derogation licence in respect of marine mammals, pursuant to Regulation 54 of the Birds and Natural Habitats Regulations 2011 (transposing Article 16 of the Habitats Directive). The application has been submitted to NPWS and a copy is included in this planning application (Volume 4 of the EIAR, appendix 4.3.5-8). This application has been submitted on a precautionary basis because it is the Applicant's view that this is not required in respect of the proposed development. As detailed within Volume 2, Chapter 2, of the EIAR (Consents, Policy and Legislation), the revised Renewable Energy Directive (EU) 2023/2413 (RED III) is materially relevant to any consideration of whether a derogation licence is required for the construction and operation of a renewable infrastructure project. This inserted Article 16b into the 2018 recast Renewable Energy Directive (Directive 2018/2001) which states that where a renewable energy project has adopted necessary mitigation measures, any killing or disturbance of the species protected under Article 12(1) of Directive 92/43/EEC and Article 5 of Directive 2009/147/EC shall not be considered to be 'deliberate'. The Applicant is satisfied that the proposed development incorporates the necessary mitigation measures and, therefore, any killing or disturbance of species protected by the Habitats Directive is not 'deliberate', within the meaning of those Directives, such that there is no requirement for a derogation licence. Furthermore, Article 3 of the 2022 Temporary Renewable Energy Regulation (Regulation (EU) No.2022/2577) states that the planning, construction and operation of plants and installations for the production of energy from renewable sources, and their connection to the grid, the related grid itself and storage assets shall be presumed as being in the overriding public interest and serving public health and safety when balancing legal interests in the individual case and expressly refers to Article 16 of the Habitats Directive. This is amended by Council Regulation (EU) 2024/223. This is also relevant to any application for a derogation licence.</p> <p>A copy of the submitted derogation licence application is included with this planning application (Appendix 4.3.5-8 of the EIAR) so that ABP can take it into account, to the extent considered necessary. The Applicant will write to ABP to confirm the outcome of the derogation licence process. If NPWS grants the derogation licence, the Applicant will provide a copy to ABP for consideration, and public consultation if required, so that ABP can reflect the granting of the licence in its reasoned conclusion on the EIA and AA and as part of its assessment of compliance with Biodiversity Policy 4 of the NMPF.</p>	Volume 3, Chapter 6 Offshore Ornithology
Protected Marine Sites			
Protected Marine Sites Policy 1	Proposals must demonstrate that they can be implemented without	The Natura Impact Statement submitted in support of the Planning Application concludes no Adverse Effect on Site Integrity (AESI) on any SPA or SAC from the project on its own or in-combination with other development. The Applicant, in accordance with Biodiversity	Volume 3, Chapter 3 Benthic, Subtidal and Intertidal Ecology

Policy	Policy Wording	Response	Related EIAR Chapter
	adverse effects on the integrity of Special Areas of Conservation (SACs) or Special Protection Areas (SPAs). Where adverse effects from proposals remain following mitigation, in line with Habitats Directive Article 6(3), consent for the proposals cannot be granted unless the prerequisites set by Article 6(4) are met.	<p>Policy 1, have sought to avoid, minimise, or mitigate any significant adverse impacts on natural habitat connectivity and in accordance with Biodiversity Policy 2, have avoided significant reduction in the distribution and extent of important habitats, or their habitats that important species depend upon, through sensitive design and avoidance and preventative measures, as set out in Section 3.16 – 3.18 Environmental Assessment of EIAR Volume 3, Chapter 3 Benthic, Subtidal and Intertidal Ecology. The Applicant, in accordance with Protected Marine Sites Policies 1-4 has demonstrated there will be no adverse effects on the integrity of protected sites from the proposed development as set out in Section 3.6 Receiving Environment, Section 3.15 project design features and avoidance and preventative measures, and Section 3.16 – 3.18 Environmental Assessment.</p> <p>Annex II species are considered in Section 4.6 Receiving Environment of Volume 3, Chapter 4 Fish and Shellfish Ecology and potential impacts to these receptors have been assessed in Section 4.16 – 4.18 Environmental Assessment. Adverse impact to Special Areas of Conservation for which fish and shellfish are a relevant consideration, has been avoided and / or mitigated.</p>	<p>Volume 3, Chapter 4 Fish and Shellfish Ecology</p> <p>NIS (Habitats Directive Assessments: Part 4 of the planning application)</p>
Protected Marine Sites Policy 2	<p>Proposals supporting the objectives of protected marine sites should be supported and:</p> <ul style="list-style-type: none"> be informed by appropriate guidance must demonstrate that they are in accordance with legal requirements, including statutory advice provided by authorities relevant to protected marine sites 	As above in relation to Protected Marine Sites Policy 1.	<p>Volume 3, Chapter 3 Benthic, Subtidal and Intertidal Ecology</p> <p>Volume 3, Chapter 4 Fish and Shellfish Ecology</p> <p>NIS (Habitats Directive Assessments: Part 4 of the planning application)</p>
Protected Marine Sites Policy 3	<p>Proposals that enhance a protected marine site's ability to adapt to climate change, enhancing the resilience of the protected site, should be supported and:</p> <ul style="list-style-type: none"> be informed by appropriate guidance must demonstrate that they are in accordance with legal requirements, including statutory advice provided by authorities relevant to protected marine sites 	As above in relation to Protected Marine Sites Policy 1.	<p>Volume 3, Chapter 3 Benthic, Subtidal and Intertidal Ecology</p> <p>Volume 3, Chapter 4 Fish and Shellfish Ecology</p> <p>NIS (Habitats Directive Assessments: Part 4 of the planning application)</p>
Protected Marine Sites Policy 4	<p>Until the ecological coherence of the network of protected marine sites is examined and understood, proposals should identify, by review of best available evidence (including consultation with the competent authority with responsibility for designating such areas as required), the features, under consideration at the time the application is made, that may be required to develop and further establish the network. Based upon identified features that may be required to develop and further establish the network, proposals should demonstrate that they will, in order of preference, and in accordance with legal requirements:</p> <ol style="list-style-type: none"> avoid, minimise, or mitigate <p>significant impacts on features that may be required to develop and</p>	As above in relation to Protected Marine Sites Policy 1.	<p>Volume 3, Chapter 3 Benthic, Subtidal and Intertidal Ecology</p> <p>Volume 3, Chapter 4 Fish and Shellfish Ecology</p> <p>NIS (Habitats Directive Assessments: Part 4 of the planning application)</p>

Policy	Policy Wording	Response	Related EIAR Chapter
	further establish the network, or d) if it is not possible to mitigate significant impacts, proposals should set out the reasons for proceeding.		
Non-Indigenous Species			
Non-indigenous Species Policy 1	Reducing the risk of the introduction and / or spread of non-indigenous species is a requirement of all proposals. Proposals must demonstrate a risk management approach to prevent the introduction of and / or spread of non-indigenous species, particularly when: a) moving equipment, boats or livestock (for example fish or shellfish) from one water body to another, b) introducing structures suitable for settlement of non-indigenous species, or the spread of non-indigenous species known to exist in the area of the proposal.	<p>Non-indigenous species and their potential impacts to the associated receptors have been assessed in Section 3.16 – 3.18 of Volume 3, Chapter 3 Benthic Subtidal and Intertidal Ecology, with a commitment made by the Applicant to implement a marine biosecurity plan which will minimise the risk of non-native species introduction. The Applicant, in accordance with Non-indigenous Species Policy 1, will seek to reduce the risk of introduction and/or spread of non-indigenous species by following industry best practices and through project design features and avoidance and preventative measures, alongside any additional mitigation measures as set out in Section 3.15 of Volume 3, Chapter 3 Benthic and Subtidal Ecology and as assessed in Section 3.16 – 3.18 Impact Assessment.</p> <p>A Project Environmental Management Plan (PEMP) (see EIAR Volume 7, Appendix 7.1) will be implemented and will include a marine biosecurity plan, which will set out the biosecurity management approach for the construction and operation of the project to manage the risks associated with Invasive Alien Species.</p> <p>The EIAR prepared for the proposed development acknowledges that while the movement of construction vessels will have the potential to contribute to the risk of the spread of non-indigenous species, it recognises that the movement of commercial vessels is common throughout the region and therefore any contribution of construction vessels associated with the proposed development would be negligible in comparison to the impacts of other marine users. The EIAR acknowledges that any impact will be restricted to the construction phase (up to 30 months), and the potential magnitude of the predicted change is low. In addition, it is acknowledged that there is a risk that the introduction of hard substrate into a sedimentary habitat will enable the colonisation of the introduced substrate by marine Invasive Alien Species that otherwise may not have had a suitable habitat available. In this context while the proposed development may act as a 'stepping-stone' for marine Invasive Alien Species, the introduction of hard substrate will not fundamentally change the type of habitats available within the nearshore regional area, and therefore the potential magnitude of the predicted changes is rated as negligible.</p>	<p>Volume 3, Chapter 3 Benthic, Subtidal and Intertidal Ecology</p> <p>Volume 7, Appendix 7.1 PEMP (Project Environmental Management Plan)</p>
Water Quality			
Water Quality Policy 1	Proposals that may have significant adverse impacts upon water quality, including upon habitats and species beneficial to water quality, must demonstrate that they will, in order of preference and in accordance with legal requirements: a) avoid, b) minimise, or c) mitigate significant adverse impacts.	<p>The existing environment with regard to water quality is considered in Volume 3, Chapter 2 Marine Water and Sediment Quality Section 2.6, and potential impacts to these receptors are assessed in Section 2.13 – 2.15 Environmental assessment of the EIAR.</p> <p>The EIAR prepared for the proposed development assesses the potential for the proposed development to impact water quality. It is acknowledged that through the construction, operation and maintenance, and decommissioning phases of the proposed development there is the potential for impacts to water quality from several sources, including; Deterioration in water quality due to re-suspension of sediments; Deterioration in water quality due to re-suspension of sediments and sediment bound contaminants; Accidental releases or spills of construction materials or chemicals; and Deterioration in water clarity from the release of drilling mud at the landfall. However, in all instances, the EIAR concludes that none of these potential impacts are assessed as having adverse significant effects in EIA terms, as presented in Volume 3, Chapter 2 Section 2.13 – 2.15.</p> <p>Although the impacts were assessed as not significant in EIA terms, a number of project design features and avoidance and preventative measures have been included as part of the proposed development, in order to further avoid, minimise and mitigate against impacts to water quality, as outlined in Volume 3, Chapter 2 Section 2.12.</p> <p>Those measures relevant to water quality, habitats and species include:</p> <ul style="list-style-type: none"> ▪ Careful routing of the offshore cable route to avoid areas of seabed habitat of conservation importance and which is vulnerable to cable installation works. ▪ A Project Environmental Management Plan (PEMP)(see EIAR, Volume 7, Appendix 7.1) and a Construction Environmental Management Plan (CEMP) accompany the Planning Application (see EIAR Volume 7, Appendix 7.8) and provide details regarding the commitments and the principles to be adopted, and the steps to be completed pre-construction to develop final plans. Both plans will be finalised and implemented post-consent. The PEMP will include details of: <ul style="list-style-type: none"> – A Marine Pollution Contingency Plan to cover accidental spills, potential contaminant release in relation to all activities carried out below MHWS, and include key emergency contact details (e.g., the Irish Coast Guard (IRCG)) and will comply with the National Maritime Oil/ HNS Spill Contingency Plan (IRCG, 2020). – Waste management and disposal arrangements; and – An environmental vessel management plan, to determine vessel routing to and from construction sites and ports, to include a code of conduct for vessel operators. 	<p>Volume 3, Chapter 1 Marine Geology, Oceanography and Physical Processes</p> <p>Volume 3, Chapter 2 Marine Water and Sediment Quality</p> <p>Volume 3, Chapter 3 Benthic, Subtidal and Intertidal Ecology</p> <p>Volume 7, Appendix 7.1 PEMP (Project Environment Management Plan)</p> <p>Volume 7, Appendix 7.8 CEMP (Construction Environmental Management Plan)</p> <p>Volume 7, Appendix 7.3 Fisheries Mitigation and Management Strategy (FMMS)</p>

Policy	Policy Wording	Response	Related EIAR Chapter
		<ul style="list-style-type: none"> ▪ The CEMP sets out environmental management measures to be adopted during construction phase (see EIAR Volume 7, Appendix 7.8). The CEMP will include details of: <ul style="list-style-type: none"> – A surface water management measures to minimise impact of the proposed development to surface water quality, as well as surface water flora and fauna; and – Invasive Species Management Plan. ▪ A Fisheries Management and Mitigation Strategy (FMMS) accompanies the planning application (see Volume 7, Appendix 7.3), and sets out the appointment, roles and responsibilities of a company fisheries liaison officer. ▪ Scour Protection measures are identified in Volume 2, Chapter 6 Project Description of the EIAR; ▪ A Decommissioning and Restoration Plan accompanies the planning application (EIAR Volume 7, Appendix 7.2), <p>There will be no significant adverse residual effects on water quality as a result of the proposed development.</p> <p>The proposed development is consistent with Water Quality Policy 1.</p>	
Water Quality Policy 2	Proposals delivering improvements to water quality, or enhancing habitats and species, which can be of benefit to water quality, should be supported.	The purpose of the proposed development is not to deliver improvements in water quality or enhancing habitats and species. Notwithstanding this, the Applicant commits, through the use of avoidance, preventative and additional mitigation measures, that no deterioration in water quality will occur thus there will be no adverse impacts to water quality, habitats and/or species that benefit water quality.	Volume 3, Chapter 2 Marine Water and Sediment Quality
Sea-floor and Water Column Integrity			
Sea-floor and Water Column Integrity Policy 1	Proposals that incorporate measures to support the resilience of marine habitats will be supported, subject to the outcome of statutory environmental assessment processes and subsequent decision by the competent authority and where they contribute to the policies and objectives of this NMPF. Proposals which may have significant adverse impacts on marine, particularly deep sea, habitats must demonstrate that they will, in order of preference and in accordance with legal requirements: a) avoid, b) minimise, or c) mitigate significant adverse impacts on marine habitats, or d) if it is not possible to mitigate significant adverse impacts on marine habitats must set out the reasons for proceeding.	<p>The water depth across the proposed offshore infrastructure does not place it in the deep sea category.</p> <p>The Applicant, in accordance with Sea-floor and Water Column Integrity Policies 1-3, through the use of avoidance, preventative and additional mitigation measures have sought to avoid, minimise or mitigate significant adverse effects on marine and coastal habitats and species as set out in Section 3.15 of Volume 3, Chapter 3 Benthic and Intertidal Ecology and assessed in Section 3.16 – 3.18 of the EIAR. The assessment concludes no adverse effects.</p> <p>As can be seen in Volume 3, Chapter 1 Marine Geology, Oceanography and Physical Processes of the EIAR, Section 1.6 Receiving Environment identified the prevailing regimes and receptors which comprise marine geology, sediments and coastal processes. The potential impacts to these receptors have been assessed in Section 1.14 – 1.16 Environmental assessment. Through the use of avoidance, preventative and additional mitigation measures (described in Section 1.13), the Applicant has sought to avoid significant adverse effects on marine geology, oceanography and physical processes and thus avoid, minimise, or mitigate against significant adverse impacts on marine habitats. The EIA concludes that no significant adverse effects are anticipated on marine geology, oceanography and physical processes and consequently no adverse impacts on the physical processes which drive the function of marine habitats are anticipated, thereby adhering to Sea-floor and Water Column Integrity Policy 1 described in the NMPF.</p>	<p>Volume 3, Chapter 1 Marine Geology, Oceanography and Physical Processes</p> <p>Volume 3, Chapter 3 Benthic, Subtidal and Intertidal Ecology</p>
Sea-floor and Water Column Integrity Policy 2	Proposals, including those that increase access to the maritime area, must demonstrate that they will, in order of preference and in accordance with legal requirements: a) avoid, b) minimise, or c) mitigate adverse impacts on important habitats and species.	<p>As above in relation to Sea-floor and Water Column Integrity Policy 1.</p> <p>Important habitats are considered in Section 4.6 Receiving environment (in addition to Sections 4.7 and 4.8) of Volume 3, Chapter 4 Fish and Shellfish Ecology of the EIAR, and potential impacts to these receptors have been assessed in Section 4.16 – 4.18 Environmental Assessment.</p>	<p>Volume 3, Chapter 1 Marine Geology, Oceanography and Physical Processes</p> <p>Volume 3, Chapter 3 Benthic, Subtidal and Intertidal Ecology</p> <p>Volume 3, Chapter 4 Fish and Shellfish Ecology</p>

Policy	Policy Wording	Response	Related EIAR Chapter
Sea-floor and Water Column Integrity Policy 3	Proposals that protect, maintain, restore and enhance coastal habitats for ecosystem functioning and provision of ecosystem services will be supported, subject to the outcome of statutory environmental assessment processes and subsequent decision by the competent authority, and where they contribute to the policies and objectives of this NMPF. Proposals must take account of the space required for coastal habitats, for ecosystem functioning and provision of ecosystem services, and demonstrate that they will, in order of preference and in accordance with legal requirements: a) avoid, b) minimise , or c) mitigate for net loss of coastal habitat	As above in relation to Sea-floor and Water Column Integrity Policy 1.	Volume 3, Chapter 1 Marine Geology, Oceanography and Physical Processes Volume 3, Chapter 3 Benthic, Subtidal and Intertidal Ecology Volume 3, Chapter 4 Fish and Shellfish Ecology
Marine Litter			
Marine Litter Policy 1	Proposals that facilitate waste re-use or recycling, or that reduce marine and coastal litter will be supported, where they contribute to the policies and objectives of this NMPF. Proposals that could potentially increase the amount of litter that is discharged into the maritime area, either intentionally or accidentally, must include measures (such as development of a waste management plan) to, in order of preference and in accordance with legal requirements: a) avoid, b) minimise, or c) mitigate the litter. Demonstration of these measures must provide satisfactory evidence that the proposal is able to manage all waste without creation of litter.	It is acknowledged that through the construction, operational and decommissioning phases of the proposed development there is the potential for the production of litter or waste materials from a number of potential sources. The EIAR prepared for the proposed development outlines various measures that will be implemented to ensure the Applicant and their contracted parties avoid increasing the amount of litter that is discharged into the maritime area either intentionally or accidentally. As shown in Volume 3, Chapter 2 Marine Water and Sediment Quality of the EIAR, waste management measures are included as part of avoidance and preventative measures via production of project plans prior to construction, as set out in Section 2.12 project design features and avoidance and preventative measures. The potential impacts from activity related litter has been assessed in Section 4.16 – 4.18 Environmental Assessment of Volume 3, Chapter 4 Fish and Shellfish Ecology with a commitment made by the Applicant to implement a CEMP which will minimise the risk of marine litter introduction (see Volume 7, Appendix 7.8). These measures are set out to avoid, minimise and/or mitigate creation of litter include; <ul style="list-style-type: none"> ▪ A Project Environment Management Plan (PEMP) accompanies the Planning Application (see Volume 7, Appendix 7.1) to provide details regarding the commitments and the principles to be adopted, and the steps to be completed pre-construction to develop final plans. The PEMP will be finalised and implemented post-consent. The PEMP will be a comprehensive document that outlines the strategies and protocols for minimising and mitigating the environmental impact of the development. The PEMP will include details of: <ul style="list-style-type: none"> – A Marine Pollution Contingency Plan to cover accidental spills, potential contaminant release in relation to all activities carried out below MHWS, and include key emergency contact details (e.g., the Irish Coast Guard (IRCG)) and will comply with the National Maritime Oil/ HNS Spill Contingency Plan (IRCG, 2020). – A Dropped Objects plan; – A Marine Biosecurity Plan; – A Marine Pollution Contingency Plan to cover accidental spills, potential contaminant release and include key emergency contact details (e.g., the Irish Coast Guard (IRCG) and will comply with the National Maritime Oil/ HNS Spill Contingency Plan; – A Chemical Risk Review to include information regarding how and when chemicals are to be used, stored and transported in accordance with recognised best practice guidance; – Waste Management and Disposal Arrangements; and – A vessel management plan, to determine vessel routing to and from construction sites and ports, to include a code of conduct for vessel operators. 	Volume 3, Chapter 2 Marine Water and Sediment Quality Volume 3, Chapter 4 Fish and Shellfish Ecology Volume 7, Appendix 7.8 CEMP (Construction Environmental Management Plan) Volume 7, Appendix 7.1 PEMP (Project Environmental Management Plan)

Policy	Policy Wording	Response	Related EIAR Chapter
		<ul style="list-style-type: none"> A Construction Environment Management Plan (CEMP) has been produced to accompany the Planning Application, and will be finalised post-consent. The CEMP sets out environmental management measures to be adopted during construction phase (see Volume 7, Appendix 7.8). The Applicant commits to the disposal of sewage and other waste in a manner which complies with all regulatory requirements, including but not limited to the IMO MARPOL requirements. <p>Regarding marine litter, it is envisaged that there will be no litter discharged into the maritime area, either intentionally or accidentally. As such, adherence to the strategies and protocols to be outlined within the PEMP and CEMP ensure that the proposal is able to manage all waste without creation of litter.</p> <p>The proposed development is consistent with Marine Litter Policy 1.</p>	
Underwater Noise			
Underwater Noise Policy 1	<p>Proposals must take account of spatial distribution, temporal extent, and levels of impulsive and / or continuous sound (underwater noise) that may be generated and the potential for significant adverse impacts on marine fauna. Where the potential for significant impact on marine fauna from underwater noise is identified, a Noise Assessment Statement must be prepared by the proposer of development. The findings of the Noise Assessment Statement should demonstrably inform determination(s) related to the activity proposed and the carrying out of the activity itself. The content of the Noise Assessment Statement should be relevant to the particular circumstances and must include:</p> <ul style="list-style-type: none"> Demonstration of compliance with applicable legal requirements, such as necessary assessment of proposals likely to have underwater noise implications, including but not limited to: <ul style="list-style-type: none"> Appropriate Assessment (AA); Environmental Impact Assessment (EIA); Strategic Environmental Assessment (SEA); Specific response to 'strict protection' requirements of Article 12 of the Habitats Directive in relation to certain species listed in Annex IV of the Directive; and Species protected under the Wildlife Acts. An assessment of the potential impact of the development or 	<p>As shown in Volume 4, Appendix 4.3.5-7 Dublin Array Underwater Noise Assessment, noise assessments have been carried out within the EIAR for the Dublin Array project which takes account of spatial distribution, temporal extent, and levels of impulsive and / or continuous sound (underwater noise) that may be generated and the potential for significant adverse impacts on marine fauna.</p> <p>The noise assessments have not identified any potential for significant adverse effects on marine fauna, having regard to marine mammals, fish and shellfish (including marine turtles). The main source of noise from the proposed development is likely to occur from pile driving during construction phase, other noise sources during construction include UXO (unexploded ordnance) activities (including detonation), dredging, trenching and vessel noise. All underwater noise modelling for pile driving conducted in the noise assessment assumes noise prevention and avoidance measures are implemented, facilitating a reduction in the source level of the underwater noise from pile driving by at least ten decibels. The EIAR has assessed the impact significance during the construction phase as either negligible or slight adverse for fish and mammals, and slight adverse for shellfish and marine turtles. The operational and decommissioning phase significance of effects are assessed as slight adverse for all marine fauna. Slight adverse is not deemed to be significant in EIA terms.</p> <p>The proposed development has been designed in such a way to avoid and minimise noise impacts on the marine environment. avoidance, preventative and additional mitigation measures are captured within the:</p> <ul style="list-style-type: none"> Project Environmental Management Plan (PEMP) (see Volume 7, Appendix 7.1) Construction Environmental Management Plan (CEMP) (see Volume 7, Appendix 7.8) Marine Megafauna Mitigation Protocol, which will include measures to ensure the risk of PTS to marine mammals is negligible from piling, UXO and geophysical surveys and will be in line with the latest relevant available guidance. <p>In regard to the above, the EIAR has not identified any significant impacts on marine fauna and therefore no Noise Assessment Statement is required. However, Habitats Directive Assessments (HDAs) including a Supporting Information: Screening for Appropriate Assessment and Natura Impact Statement are submitted with the Planning Application (Part 4 Habitats Directive Assessments of the planning application) and will also be subject to such assessments by An Bord Pleanála.</p> <p>Reference is made to Volume 3, Chapter 5 Marine Mammals and to Appendix 4.3.5-7 Dublin Array Underwater Noise Assessment. The hearing sensitivities of marine mammals are considered in Section 5.6 Receiving Environment and potential impacts to these receptors have been assessed in Section 5.13 – 5.15 Environmental assessment. This document therefore represents the Noise Assessment Statement for the purposes of marine mammals, and should be read in conjunction with Volume 3 Chapter 4 Fish and Shellfish Ecology. Adverse impact to noise sensitive receptors has been avoided and / or mitigated.</p> <p>In relation to subtidal and intertidal ecology, reference to Volume 3, Chapter 3 Benthic, Subtidal and Intertidal Ecology is made. In relation to temporary habitat disturbance, any impacts of noise and vibration would be short term and very localised. Given this, the potential impact of noise and vibration would not adversely impact the benthic, subtidal and intertidal habitats within the proposed offshore infrastructure area.</p> <p>The Applicant has decided to make an application to NPWS on a precautionary basis for a derogation licence in respect of marine mammals, pursuant to Regulation 54 of the Birds and Natural Habitats Regulations 2011 (transposing Article 16 of the Habitats Directive). The application has been submitted to NPWS and a copy is included in this planning application (Volume 4 of the EIAR, appendix 4.3.5-8). This application has been submitted on a precautionary basis because it is the Applicant's view that this is not required in respect of the proposed development. As detailed within Volume 2, Chapter 2, of the EIAR (Consents, Policy and Legislation), the revised Renewable Energy Directive (EU) 2023/2413 (RED III) is materially relevant to any consideration of whether a derogation licence is required for the construction and operation of a renewable infrastructure project. This inserted Article 16b into the 2018 recast Renewable Energy Directive (Directive 2018/2001) which states that where a renewable energy project has adopted</p>	<p>Volume 3, Chapter 5 Marine Mammals</p> <p>Volume 4, Appendix 4.3.5-7 Dublin Array Underwater Noise Assessment</p> <p>Volume 3 Chapter 4 Fish and Shellfish Ecology</p> <p>Volume 3, Chapter 3 Benthic, Subtidal and Intertidal Ecology</p> <p>Volume 7, Appendix 7.1 PEMP (Project Environmental Management Plan)</p> <p>Volume 7, Appendix 7.8 CEMP (Construction Environmental Management Plan)</p> <p>SISAA (Part 4 Habitats Directive Assessments)</p> <p>NIS (Part 4 Habitats Directive Assessment)</p>

Policy	Policy Wording	Response	Related EIAR Chapter
	<p>use on the affected species in terms of environmental sustainability;</p> <ul style="list-style-type: none"> ▪ Demonstration that significant adverse impacts on marine fauna resulting from underwater noise will, in order of preference and in accordance with legal requirements be: <ol style="list-style-type: none"> a) avoided, b) minimised, or c) mitigated, or d) if it is not possible to mitigate significant adverse impacts on marine fauna, the reasons for proceeding must be set out. <p>This policy should be included as part of statutory environmental assessments where such assessments require consideration of underwater noise.</p>	<p>necessary mitigation measures, any killing or disturbance of the species protected under Article 12(1) of Directive 92/43/EEC and Article 5 of Directive 2009/147/EC shall not be considered to be 'deliberate'. The Applicant is satisfied that the proposed development incorporates the necessary mitigation measures and, therefore, any killing or disturbance of species protected by the Habitats Directive is not 'deliberate', within the meaning of those Directives, such that there is no requirement for a derogation licence. Furthermore, Article 3 of the 2022 Temporary Renewable Energy Regulation (Regulation (EU) No.2022/2577) states that the planning, construction and operation of plants and installations for the production of energy from renewable sources, and their connection to the grid, the related grid itself and storage assets shall be presumed as being in the overriding public interest and serving public health and safety when balancing legal interests in the individual case and expressly refers to Article 16 of the Habitats Directive. This is amended by Council Regulation (EU) 2024/223. This is also relevant to any application for a derogation licence.</p> <p>A copy of the submitted derogation licence application is included with this planning application (Appendix 4.3.5-8 of the EIAR) so that ABP can take it into account, to the extent considered necessary. The Applicant will write to ABP to confirm the outcome of the derogation licence process. If NPWS grants the derogation licence, the Applicant will provide a copy to ABP for consideration, and public consultation if required, so that ABP can reflect the granting of the licence in its reasoned conclusion on the EIA and AA and as part of its assessment of compliance with Biodiversity Policy 4 of the NMPF.</p>	
Air Quality			
Air Quality Policy 1	<p>Proposals that support a reduction in air pollution should be supported, subject to the outcome of statutory environmental assessment processes and subsequent decision by the competent authority, and where they contribute to the policies and objectives of this NMPF. Proposals must demonstrate consideration of their contribution to air pollution, both direct and cumulative.</p>	<p>As outlined in Volume 5, Chapter 10 Air Quality, the proposed development supports a reduction in air pollution through the development of an offshore wind farm and its associated onshore infrastructure, in accordance with Air Quality Policy 1 of the National Marine Planning Framework (NMPF). The following points are addressed:</p> <p>Commitment to Air Pollution Reduction: The proposed development is designed to significantly reduce air pollution by providing a clean and renewable source of energy. This reduction aligns with the broader policies and objectives of the NMPF.</p> <p>Environmental Assessment Compliance: The proposal has undergone a comprehensive environmental assessment process as documented in the Applicant's Environmental Impact Assessment Report accompanying the planning application.</p> <p>Contribution to Air Pollution Reduction: Offshore Wind Farm: The proposal includes a detailed analysis of the expected reduction in air pollutants, both direct and cumulative, as detailed within the Greenhouse Gas Assessment (EIAR Volume 4, Appendix 4.3.18-1. This analysis demonstrates how the proposed development will lower emissions of harmful pollutants such as CO₂, NO_x, and SO₂ by displacing fossil fuel-based energy generation. Onshore Works: The construction and operation of the Onshore Works will be managed to minimise any potential air pollution. Measures include efficient vehicle routing to minimise vehicle emissions, and the implementation of dust suppression techniques.</p> <p>Cumulative Impact Consideration: The cumulative impact of the proposed wind farm, in conjunction with other renewable energy projects, has been considered within the respective EIAR chapters. The proposal includes a cumulative impact assessment to ensure a holistic understanding of the overall contribution to air pollution reduction. This assessment covers both the offshore and onshore components, ensuring that the combined effects of all project elements are thoroughly evaluated and managed.</p> <p>By addressing these points, this proposal demonstrates a strong commitment to reducing air pollution, adhering to the statutory environmental assessment processes, and contributing to the policies and objectives of the NMPF. The development of this offshore wind farm and its associated onshore infrastructure represents a significant step towards a cleaner, more sustainable energy future.</p>	<p>Volume 5, Chapter 10 Air Quality</p> <p>Volume 4, Appendix 4.3.18-1. Greenhouse Gas Assessment</p> <p>Volume 3, Chapter 18 Climate Change</p>
Air Quality Policy 2	<p>Where proposals are likely to result in or facilitate an increase in air pollution, proposals should demonstrate that they will, in order of</p>	<p>The EIAR prepared for the proposed development assesses its potential for impacts on air quality and climate within the EIAR, Volume 3, Chapter 18 Climate Change. The proposal outlines measures to ensure that any potential increase in air pollution is effectively managed by adhering to the following hierarchy: avoidance, minimisation, and mitigation.</p>	<p>Volume 5, Chapter 10 Air Quality</p> <p>Volume 4, Appendix 4.3.18-1. Greenhouse Gas Assessment</p>

Policy	Policy Wording	Response	Related EIAR Chapter
	<p>preference in accordance with legal requirements and standards:</p> <p>a) avoid, b) minimise, or c) mitigate air pollution.</p>	<p>The primary strategy for the offshore wind farm is to avoid any increase in air pollution by employing clean energy technologies that produce zero emissions during operation. For the cable route, landfall and transition joint bay, operations and maintenance base, and substation, construction methods will be selected to minimise emissions. Where feasible, electric or low-emission vehicles and machinery will be used to avoid air pollution.</p> <p>During construction of the cable route, landfall, transition joint bay, operations and maintenance base, and substation, best practices will be implemented to minimise dust, vehicle emissions, and other pollutants. This includes dust suppression techniques, efficient route planning to reduce vehicle movements, and the use of low-emission construction equipment.</p> <p>The proposal demonstrates compliance with all relevant legal requirements and standards. It includes a Project Environmental Management Plan that outlines how the proposed development will adhere to statutory regulations and best practices for air pollution control during all phases of the project, for both onshore and offshore components. By systematically addressing the potential for increased air pollution through the hierarchical approach outlined in Air Policy 2 of the NMPF, and by applying these measures to both offshore and onshore components of the project, this proposal ensures that the development of the offshore wind farm and its associated onshore works will not only meet legal requirements but also contribute to a sustainable and cleaner environment.</p> <p>The Greenhouse Gas Assessment (see EIAR Volume 4, Appendix 4.3.18-1 Greenhouse Gas Assessment) included with the Planning Application concludes that when compared to the alternative of generating electricity using gas (CCGT) Dublin Array is projected to offset the embedded emissions from construction within two years for the lowest impact scenario, and three years for the highest impact scenario. As such, it is considered that the proposed development would contribute to a decrease in air pollution as it supports the decarbonisation of the electricity sector as envisaged under the Climate Action Plan (CAP) 2024, which targets deployment of 'at least 5 GW from offshore wind projects' by 2030.</p> <p>The proposed development is consistent with Air Quality Policy 2.</p>	<p>Volume 3, Chapter 18 Climate Change</p> <p>Volume 7, Appendix 7.1 PEMP (Project Environmental Management Plan)</p> <p>Volume 7, Appendix 7.8 CEMP (Construction Environmental Management Plan)</p>
Climate Change			
Climate Change Policy 1	<p>Proposals should demonstrate how they:</p> <ul style="list-style-type: none"> avoid contribution to adverse changes to physical features of the coast; enhance, restore or recreate habitats that provide a flood defence or carbon sequestration ecosystem services where possible. <p>Where potential significant adverse impacts upon habitats that provide a flood defence or carbon sequestration ecosystem services are identified, these must be in order of preference and in accordance with legal requirements:</p> <p>a) avoided, b) minimised, c) mitigated, d) if it is not possible to mitigate significant adverse impacts, the reasons for proceeding must be set out.</p> <p>This policy should be included as part of statutory environmental assessments where such assessments are required.</p>	<p>As can be seen in the EIAR, Volume 3, Chapter 1 Marine Geology, Oceanography and Physical Processes, Section 1.6 Receiving Environment identified the prevailing regimes and receptors which comprise marine geology, sediments and coastal processes. The potential impacts to these receptors have been assessed in Section 1.14 – 1.16 Environmental assessment. Through the use of avoidance, preventative and additional mitigation measures (described in Section 1.13), the Applicant has sought to avoid significant adverse effects on marine geology, oceanography and physical processes and thus avoid, minimise, or mitigate against significant adverse impacts on marine habitats. The EIA concludes that no significant adverse effects are anticipated on marine geology, oceanography and physical processes and consequently no adverse impacts on the physical processes which drive the function of marine habitats are anticipated. Furthermore, the Applicant, in accordance with Climate Change Policy 1, through iterative design and the use of avoidance, preventative and additional mitigation measures have sought to avoid, minimise or mitigate significant adverse effects on marine and coastal habitats and species as set out in Section 3.15 of EIAR Volume 3, Chapter 3 Benthic, Subtidal and Intertidal Ecology and assessed in Section 3.16 – 3.18. The assessment concludes no adverse effects.</p> <p>With regard to the impact of the offshore elements of the development on coastal features, it is acknowledged that the significance of potential changes to coastal features occurring as a result of the proposed development is not significant in EIA terms. The scope of Chapter 18 Climate Change covers all offshore aspects of the proposed development extending up to MHWS. As per the conclusions of the Climate Change Resilience Assessment (CCRA) contained within the EIAR, Volume 3, Chapter 18 Climate Change, no significant adverse effects on the physical features of the coast, including those between MHWS and MLWS have been identified. In addition, rainfall data which accounts for predicted changes in the climate has been considered within Volume 5, Chapter 4 Hydrology, Hydrogeology and Flood Risk which assesses the potential impacts associated with the Landfall and TJB which are located where the offshore export cables will meet the coastline. Through the use of avoidance, preventative and additional mitigation measures the proposed development have sought to avoid, minimise or mitigate significant adverse effects on flood risk and erosion.</p> <p>In-combination Climate Change Resilience Assessment effects have been assessed in the EIAR, Volume 3, Chapter 18 Climate Change. In-combination CCRA effects indicate the extent to which climate change could exacerbate the effects of the proposed development other environmental receptors. As per the conclusions of the CCRA assessment, climate change is not expected to exacerbate any of the effects identified by offshore ecology assessment chapters to any significant extent. Specific details of project design features and avoidance and preventative measures that will be implemented to prevent adverse impacts can be found in the following chapter: Volume 3, Chapter 3 Benthic, Subtidal and Intertidal Ecology.</p> <p>The EIAR outlines the project design features and avoidance and preventative measures set out to avoid contribution to adverse changes to physical features of the coast or other habitats. Those measures aimed at avoiding and minimising impacts include;</p>	<p>Volume 3, Chapter 1 Marine Geology, Oceanography and Physical Processes</p> <p>Volume 3, Chapter 3 Benthic, Subtidal and Intertidal Ecology</p> <p>Volume 5, Chapter 4 Hydrology, Hydrogeology and Flood Risk</p> <p>Volume 3, Chapter 18 Climate Change</p> <p>Volume 2, Chapter 6 Project Description</p>

Policy	Policy Wording	Response	Related EIAR Chapter
		<ul style="list-style-type: none"> ▪ The installation of the offshore export cables at landfall will be undertaken by use of trenchless technologies [e.g. Horizontal Directional Drilling (HDD)] beneath any intertidal zone which will prevent any direct disturbance to intertidal receptors. The exit pits will be located within the offshore ECC seaward of the Mean Low Water (MLW) at a point where cable installation vessels can operate. ▪ At the pre-construction stage, the presence of sensitive habitats will be identified through a review of the latest available benthic datasets and pre-construction surveys. Wind Farm infrastructure will be micro-sited around protected habitats wherever reasonably practicable to an extent not resulting in a hazard for marine traffic and Search & Rescue capability. Careful routing of the offshore cable route will aim to minimise effects on seabed habitat of conservation importance, and which is vulnerable to cable installation works. ▪ Volume 2, Chapter 6 Project Description of the EIAR details the requirement for a Cable Installation Plan (CIP) and Cable Burial Risk Assessment (CBRA) which will be developed upon award of consent and in advance of construction. The CIP and CBRA will provide information on the installation plan for subsea cables. The CBRA, will provide a risk assessment and evaluation for cable protection, unburied or shallow buried cables. The CIP will detail pertinent mitigation measures to be used during cable installation and will be applied throughout the construction phase. The CIP and CBRA will be submitted to the consenting authority in advance of construction phase. Scour Protection measures are identified in Volume 2, Chapter 6 Project Description, including details of the need, location, type, quantity and installation methods for scour protection. <p>It is envisaged that there will be no significant adverse residual effects on physical features of the coast or habitats as a result of the proposed development.</p> <p>The proposed development is consistent with Climate Change Policy 1.</p>	
Climate Change Policy 2	<p>For the lifetime of the proposal, the following climate change matters must be demonstrated:</p> <ul style="list-style-type: none"> • estimation of likely generation of greenhouse gas emissions, both direct and indirect; • measures to support reductions in greenhouse gas emissions where possible; • likely impact of climate change effects upon the proposal from factors including but not limited to: sea level rise, ocean acidification, changing weather patterns; • measures incorporated to enable adaptation <p>climate change effects;</p> <ul style="list-style-type: none"> • likely impact upon climate change adaptation <p>measures adopted in the coastal area relevant</p> <p>to the proposal and/or adaptation</p> <p>measures</p> <p>adopted by adjacent activities;</p> <ul style="list-style-type: none"> • where likely impact upon climate change adaptation measures in the coastal area relevant to the proposal and/or adaptation measures adopted by adjacent activities is identified, these impacts must be in order of preference and in accordance with legal requirements: <ol style="list-style-type: none"> a) avoided, b) minimised, c) mitigated, 	<p>The Greenhouse Gas (GHG) Assessment within Volume 3, Chapter 18 Climate Change concludes that the proposed development, through reducing Ireland's dependency on fossil fuels, will support reductions in greenhouse gas emissions. Therefore, the proposed development will directly support Ireland's 2030 targets for decarbonisation. This assessment accounts for the estimated greenhouse gas emissions, both direct and indirect, resulting from the proposed development as well as the annual carbon savings that will be achieved through the clean energy delivered to the grid by the project. Further details on the GHG Assessment can be found in the EIAR, Volume 4, Appendix 4.3.18-1 Greenhouse Gas Assessment.</p> <p>Volume 3, Chapter 18 Climate Change demonstrates that the proposed development has considered, and is resilient to, the effects of climate change for the lifetime of the development. This assessment was based on best available information at the time of writing, including data collected from the World Bank Knowledge Portal, the UK Met Office and the UK Government Office of Science on projected changes to the following climate variables: temperature, rainfall, sea level rise, and sea pH levels. As indicated by the conclusions of the Climate Change Resilience Assessment (CCRA), all effects on the resilience of the proposed development have been assessed to be of negligible or minor adverse significance.</p> <p>The proposed development is consistent with Climate Change Policy 2.</p>	<p>Volume 3, Chapter 18 Climate Change</p> <p>Volume 4, Appendix 4.3.18-1 Greenhouse Gas Assessment</p>

Policy	Policy Wording	Response	Related EIAR Chapter
	d) if it is not possible to mitigate significant adverse impacts, the reasons for proceeding must be set out.		
Co-existence			
Co-existence Policy 1	<p>Proposals should demonstrate that they have considered how to optimise the use of space, including through consideration of opportunities for co-existence and co-operation with other activities, enhancing other activities where appropriate. If proposals cannot avoid significant adverse impacts (including displacement) on other activities they must, in order of preference:</p> <p>a) minimise significant adverse impacts,</p> <p>b) mitigate significant adverse impacts, or</p> <p>c) if it is not possible to mitigate significant adverse impacts, proposals should set out the reasons for proceeding.</p>	<p>The EIAR prepared for the proposed development assesses the potential for the proposed development to impact other users of the marine area, including marine infrastructure, as presented in Volume 3, Chapter 11 Marine Infrastructure and Other Users and Volume 3, Chapter 17 Socio-economic, Tourism, Recreation and Land Use. It is acknowledged that through the construction, operational and decommissioning phases of the proposed development there is the potential for impacts to other marine area users and infrastructure. No impacts within these chapters have been assessed to have adverse significant impacts in EIA terms.</p> <p>During the iterative design process, all constraints were considered with regard to optimisation of space whilst attempting to minimise impacts to other marine area users and other marine infrastructure. It should be noted that in the interest of co-existence and co-operation, a number of public consultation events were carried out, alongside statutory consultation with a number of prescribed bodies. Issues and concerns arising from these consultations were considered and where possible addressed as part of the iterative design process for the proposed development.</p> <p>As presented within EIAR Volume 3, Chapter 9 Commercial Fisheries, a number of measures have been adopted to facilitate co-existence. As avoidance is not always possible, the layouts have also been developed to facilitate coexistence through spacing between wind turbine generators. The EIAR identified effects on the displacement of commercial fisheries which would normally access the array site and offshore export cable corridor (ECC) ranging from imperceptible to moderate adverse as a result of the proposed development. However, following the implementation of appropriate mitigation measures, the residual significance of impact is concluded as Slight adverse which is not significant in EIA terms.</p> <p>A Fisheries Management and Mitigation Strategy (FMMS) accompanies the Planning Application (EIAR Volume 7, Appendix 7.3) and outlines potential opportunities for co-existence and co-operation, as well as relevant avoidance and preventative measures. The project will facilitate the operational coexistence, insofar as practicable with due regard to health and safety, with other users of the marine environment. Fishing will not be excluded from the array area by the Applicant. Wind turbine generators have been spaced apart to facilitate coexistence where possible. Operational advisory safety zones may apply around structures and would usually be up to 50m. However, it is not expected that the impact of these safety zones would be significant and will be temporary in nature.</p> <p>The Applicant have engaged with commercial fishing stakeholders, including individual fishermen for several years as described in EIAR Volume 3, Chapter 9 Commercial Fisheries. Volume 3, Chapter 10 Shipping and Navigation and Chapter 11 Marine Infrastructure and Other Users assess the interaction of the construction, operation and decommissioning of the the proposed development with other sea users. With avoidance and preventative measures in place, the assessments conclude no adverse effects on shipping and navigation or infrastructure and other stakeholders.</p> <p>The strategic importance of the proposed development is discussed in more detail in Part 1 B Planning Report and the EIAR (Volume 2, Chapter 2 Consents, Legislation, Policy and Guidance). The proposed development is strategic and of national importance to Ireland as a Phase 1 offshore wind farm project. It will support a significant share of the offshore energy targets for 2030 as well as contribute substantially to a reduction of the carbon budget for the electricity sector by 2030. The carbon budget for the electricity sector was prepared on foot of the Climate Action and Low Carbon Development (Amendment) Act 2021 and is legally binding.</p> <p>The EIAR outlines the project design features and avoidance and preventative measures set out to avoid contribution to adverse impacts on other activities. Those measures aimed at avoiding and minimising impacts include;</p> <ul style="list-style-type: none"> Regular promulgation of information regarding activities associated with the proposed development will ensure that all local operators are aware of any relevant activities associated with the proposed development. The information will take the form of marine notices, navigational aids and marine charting updates. The Applicant will engage with the relevant clubs and associations in order to minimise the potential for disturbance, with advanced warning of vessel transits during the construction phase. Provisions will be made for advance notification of the specific locations of construction work during this phase of the proposed development as part of the implementation of a Vessel Management Plan, it is considered that any risks of collision or disruption to recreational (boat based) angling activities will be minimised. It is the intention of the Applicant to implement an advisory 500 m safety zone around each of the wind turbines, sections of cable and the offshore substation platform whilst construction activities are ongoing. Advisory safety zones of 50 m will be implemented for incomplete structures where construction activity may be 	<p>Volume 3, Chapter 11 Marine Infrastructure and Other Users</p> <p>Volume 3, Chapter 17 Socio-economic, Tourism, Recreation and Land Use</p> <p>Volume 3, Chapter 9 Commercial Fisheries</p> <p>Volume 3, Chapter 10 Shipping and Navigation</p> <p>Volume 2, Chapter 2 Consents, Legislation, Policy and Guidance</p> <p>Volume 2, Chapter 6 Project Description</p> <p>Volume 7, Appendix 7.3 Fisheries Mitigation and Management Strategy (FMMS)</p>

Policy	Policy Wording	Response	Related EIAR Chapter
		<p>temporarily paused (and therefore the 500 m safety zone has lapsed). Guard vessels may be in operation to ensure other users do not enter safety zones. An Advisory Safety Zone of 50 m will also be implemented around any offshore O&M activities.</p> <ul style="list-style-type: none"> ▪ The pre-construction surveys will include geophysical and magnetometer surveys that will be able to identify existing assets, including out of service cables, which may be in a different position to their charted location because of past use of outdated locating techniques. Micro siting will be carried out as required in order to avoid, and maintain a safe distance from, existing cables, if required. ▪ Volume 2, Chapter 6 Project Description details the requirement for a Cable Installation Plan (CIP) and Cable Burial Risk Assessment (CBRA) which will be developed upon award of consent and in advance of construction. The CIP and CBRA will provide information on the installation plan for subsea cables. The CBRA, will provide a risk assessment and evaluation for cable protection, unburied or shallow buried cables. The CIP will detail pertinent mitigation measures to be used during cable installation and will be applied throughout the construction phase. The CIP and CBRA will be submitted to the consenting authority in advance of construction phase. Crossing and proximity agreements between Dublin Array and other asset owners/operators (currently limited to an anticipated cable crossing with the proposed Codling Wind Park project) will ensure close communication and planning between both parties to ensure disruption of activities is minimised, and that risks are reduced to acceptable levels. A number of potential methodologies for cable crossings are under consideration, including rock dumping, concrete mattresses, and steel or concrete bridging. The final crossing design will be determined post-consent, in conjunction with the asset owner. Crossing and proximity agreements will include the ability of a cable operator to access their infrastructure during the construction the proposed development as far as practicable, though exclusion from the assets will be required. ▪ One or more guard vessels will be present and maintain a position close to construction vessels. Guard vessels will monitor tracks of passing vessels and any potential interaction with construction vessels. ▪ Prior to the decommissioning of the proposed development, consultation with the relevant authorities (including the Marine Survey Office) and any other relevant bodies will be carried out to determine appropriate safety buffers to be maintained around decommissioning vessels. ▪ All structures associated with the proposed development will be charted on relevant nautical and electronic charts. <p>As such, the proposed development is consistent with Co-existence Policy 1.</p>	
Infrastructure			
Infrastructure Policy 1	Appropriate land-based infrastructure which facilitates marine activity (and vice versa) should be supported. Proposals for appropriate infrastructure that facilitates the diversification or regeneration of marine industries should be supported.	As detailed in Volume 2, Chapter 6 Project Description of the EIAR the proposed development includes all elements required for energy production, transmission and grid connection. The proposed development will also include an operation and maintenance (O&M) base within Dún Laoghaire Harbour, which will support the proposed development by providing office and workshop facilities and storage for maintenance purposes. The O&M base will be located on St Micheal's Pier and will introduce a marine based industry to the Harbour for the operational lifetime of the wind farm (approximately 35 years). The use of St. Michael's Pier for the construction of the O&M base and the provision/use of adjacent mooring opportunities will increase the use of this under-utilised asset in Dún Laoghaire Harbour. Dún Laoghaire-Rathdown County Council appointed Indecon International Economic Consultants to provide independent expert advice to provide a sustainable economic plan for Dún Laoghaire Harbour. The objective was to assist the Council to develop Dún Laoghaire Harbour with a view to maximising the benefit to its citizens and to ensuring the Harbour's financial sustainability. The plan was published in 2021 ¹ and included amongst its strategic recommendations (Recommendation 5) was that the harbour should be developed as an Operations and Maintenance base to support offshore renewable energy.	<p>Volume 2, Chapter 6 Project Description</p> <p>Volume 3, Chapter 11 Marine Infrastructure and Other Users</p>
Access			
Access Policy 1	Proposals, including in relation to tourism and recreation, should demonstrate that they will, in order of preference: a) avoid, b) minimise, or c) mitigate significant adverse impacts on public access.	<p>The EIAR prepared for the proposed development assesses the potential the proposed development to impact public access for other users of the marine area. It is acknowledged that through the construction, operational and decommissioning phases of the proposed development there is the potential for temporary disruption to public access at the proposed landfall, however Volume 3, Chapter 17 Socio-economic, Tourism, Recreation and Land Use concludes no significant impacts at all stages of the development.</p> <p>The duration of construction at landfall and any associated loss of access at Shanganagh Beach is temporary.</p> <p>A number of project design features and avoidance and preventative measures were incorporated as part of the proposed development during the design iterations, in order to avoid, minimise and mitigate against significant adverse impacts on public access. Those measures include:</p> <ul style="list-style-type: none"> ▪ Regular promulgation of information regarding activities associated with the proposed development will ensure that all local operators are aware of any relevant activities associated with the proposed development. The information will take the form of marine notices, navigational aids and marine charting updates. 	Volume 3, Chapter 17 Socio-economic, Tourism, Recreation and Land Use

¹ <https://www.dlrco.ie/business/economic-plan-d%C3%BA-laoghaire-harbour-and-spatial-economic-study-d%C3%BA-laoghaire-town#:~:text=D%C3%BA%20Laoghaire-Rathdown%20County%20Council%20appointed%20Indecon%20International%20Economic>

Policy	Policy Wording	Response	Related EIAR Chapter
		<ul style="list-style-type: none"> Engagement is ongoing and will continue after submission of the Planning Application and throughout the lifetime of the proposed development. Stakeholders in relation to socio-economics, tourism and recreation that will be engaged include: local authorities, landowners, local communities, educational institutions, and local suppliers and businesses, including local accommodation providers. Consultation will also help ensure that management plans are prepared and implemented sufficiently to mitigate any potential impacts. It is the intention of the Applicant to implement an advisory 500 m safety zone around each of the wind turbines, section of cable and offshore substation platform whilst construction activities are ongoing. Advisory safety zones of 50 m will be implemented for incomplete structures where construction activity may be temporarily paused (and therefore the 500 m safety zone has lapsed). Guard vessels may be in operation to ensure other users do not enter safety zones. An Advisory Safety Zone of 50 m will also be implemented around any offshore O&M activities. Prior to the decommissioning of the proposed development, consultation with the relevant authorities (including the Marine Survey Office) and any other relevant bodies will be carried out to determine appropriate safety buffers to be maintained around decommissioning vessels. All structures associated with the proposed development will be charted on relevant nautical and electronic charts. <p>In all instances, restrictions to public access during construction and maintenance will be put in place where required, to ensure the safety of other marine area users. Temporary restricted access, particularly onshore to ensure the adequate provision of health and safety measures for the protection of the public will be introduced where necessary, and will be temporary and short-term in nature. EIAR Volume 3, Chapter 17: Socio-economics, Tourism, Recreation and Land Use considers the impacts on enjoyment of marine and coastal recreational and visitor assets arising from construction of offshore infrastructure. Relevant avoidance and preventative measures include use of a Vessel Management Plan during the construction phase. The assessment within Volume 3, Chapter 17 finds no significant effects on the enjoyment of marine and coastal recreational and visitor assets.</p> <p>As such, the proposed development is consistent with Access Policy 1.</p>	
Access Policy 2	Proposals demonstrating appropriate enhanced and inclusive public access to and within the maritime area, and that consider the future provision of services for tourism and recreation activities, should be supported, subject to the outcome of statutory environmental assessment processes and subsequent decision by the competent authority, and where they contribute to the policies and objectives of this NMPF.	Access Policy 2 is not applicable to the proposed development as it will not provide any additional public access to the nearshore or maritime area. There will be no change to public access arrangements to St. Michael's Pier at Dún Laoghaire Harbour, as such no public access is provided at the proposed O&M base in the interest of construction and operational health, safety and security.	Volume 3, Chapter 17 Socio-economic, Tourism, Recreation and Land Use
Employment			
Employment Policy 1	Proposals should demonstrate contribution to a net increase in marine related employment in Ireland, particularly where the proposals are <ul style="list-style-type: none"> in line with the skills available in Irish coastal communities adjacent to the maritime area, improve the sustainable use of natural resources, diversify skills to enable employment in emerging industries. 	<p>Employment impacts divided by offshore/onshore and the construction, operational and decommissioning phases are assessed in the EIAR Volume 3, Chapter 17 Socio-economics, Tourism, Recreation and Land Use. This includes consideration of long term high skilled roles created at the O&M base. Many of the jobs created, directly and indirectly, will assist in the decarbonisation of energy generation in Ireland (as they will play an important role in the transition to a sustainable economy) operating in the marine area and will be created in the emerging Irish offshore wind industry. It is recognised that through the course of the construction, operational and decommissioning phases of the proposed development there will be a positive impact on employment in communities along the Irish coastline. The proposal includes certain activities which are in line with the skills available in Irish coastal communities adjacent to the maritime area, with aspects of the proposal aimed at improving the sustainable use of natural resources.</p> <p>The proposed development will result in the creation of jobs across Greater Dublin, the rest of Ireland and further afield as the proposed development will utilise local, regional and global supply chains. Whilst it is acknowledged that employment impacts will occur during construction, operation and maintenance, and during decommissioning, the greatest impact to employment will likely occur during the construction phase, peaking toward the end of construction. It is considered that there will be a moderate beneficial impact on employment arising from construction of offshore infrastructure, with impacts on employment at operational and decommissioning phases deemed not significant. As a result, there are no additional measures proposed relating to employment thus no significant beneficial residual effects occur.</p> <p>The proposed development is consistent with Employment Policy 1.</p>	Volume 3, Chapter 17 Socio-economic, Tourism, Recreation and Land Use

Policy	Policy Wording	Response	Related EIAR Chapter
Heritage Assets			
Heritage Assets Policy 1	<p>Proposals that demonstrate they will contribute to enhancing the significance of heritage assets will be supported, subject to the outcome of statutory environmental assessment processes and subsequent decision by the competent authority, and where they contribute to the policies and objectives of this NMPF. Proposals unable to contribute to enhancing the significance of heritage assets will only be supported if they demonstrate that they will, in order of preference:</p> <ol style="list-style-type: none"> avoid, minimise, or mitigate harm to the significance of heritage assets, and if it is not possible, to mitigate harm, then the public benefits for proceeding with the proposal must outweigh the harm to the significance of the heritage assets. (see definition of 'Public Benefits' in the Glossary) 	<p>The proposed development does not commit to being able to contribute to enhancing the significance of heritage assets, however the proposed development avoids direct impacts on known or recorded marine heritage assets through the implementation of a number of avoidance, preventative and additional mitigation measures, as outlined in Volume 3, Chapter 13 Marine Archaeology Section 13.13. Where previously unrecorded heritage assets are identified the mitigation measures outlined below detail how these assets will be avoided and protected during all phases of the proposed development.</p> <p>Environmental constraints and alternative locations relating to the array area and Offshore export cable corridor have been considered as part of the site selection and consideration of alternatives during the iterative design of the proposed development. This is documented in Volume 2, Chapter 5 Consideration of Alternatives of the EIAR. A number of measures have been identified and adopted as part of the evolution of the project design to ensure avoidance, minimisation and mitigation of the potential for harmful impacts to marine heritage assets. These commitments are based on guidance outlined in the Framework and Principles for the Protection of Archaeological Heritage (DAHG, 1999a) and the Archaeological Written Schemes of Investigation for Offshore Wind Farm Projects (The Crown Estate, 2021). Various archaeological Codes of Practice from onshore development were also consulted, including the most recent reference, Code of Practice for Archaeology agreed between the Minister for Arts, Heritage, Rural and Gaeltacht Affairs and Transport Infrastructure Ireland (Transport Infrastructure Ireland, 2017). Continued investigation through survey and the specifications for investigation and reporting set out in the Archaeological Management Plan (AMP) and Protocol for Archaeological Discoveries (PAD) documents, respectively, work to enforce these avoidance and preventative measures for use throughout the lifetime of the proposed development.</p> <p>Chapter 13 Marine Archaeology (Volume 2 of the EIAR) has applied additional mitigation measures and found that there would be no significant residual effects on marine archaeological and heritage receptors. Measures relevant to Marine Archaeology include:</p> <ul style="list-style-type: none"> ▪ All geophysical surveys, geotechnical surveys, archaeological dive surveys, ROV surveys, hand-held metal detection surveys and intertidal surveys will be licensed under the National Monuments Acts 1930-2014, results will be assessed and reported by a suitably qualified archaeologist. ▪ All marine geophysical surveys will be carried out in compliance with the Underwater Archaeology Unit (National Monuments Service) guidelines General Requirements for Geophysical Survey for Archaeological Purposes, and the results will be assessed and reported by a suitably qualified archaeologist. ▪ As part of the continued survey of the development area, geoarchaeological assessments of deposits of archaeological potential, following an approved method statement will be undertaken, results will be assessed and reported by a suitably qualified archaeologist. ▪ Cores collected will be completed in line with archaeological specifications and made available for archaeological assessment, where possible, and additional archaeologically specific cores will be collected. ▪ Archaeological Exclusion Zones (AEZ) around known wrecks and potential receptors, as identified in the archaeological assessment of baseline and geophysical data will be implemented. All activities interfering with the seabed during all project phases must be micro sited to avoid the AEZs. These exclusion zones may be altered, increased, reduced, or removed as more information on the receptor becomes available. ▪ Clear responsibilities and commitments of all parties involved in the protection of marine archaeology will be produced and agreed. ▪ The implementation of a Protocol of Archaeological Discovery (PAD) facilitating dialogue between on-site offshore development contractors, the Applicant, the archaeological curators, and the retained archaeologist mitigating the impact on unexpected archaeological discoveries. ▪ If any project activities are necessary within the established AEZs, the Department for Culture Heritage and Gaeltacht (DCHG) will be informed prior to any works being undertaken, as a detailed archaeological investigation may be required prior to or during such works. In such case, a full method statement detailing any planned developmental and archaeological works will be submitted to the DCHG before any works commence. ▪ Where relevant, and if impact to archaeological receptors is anticipated during intrusive activities or if material will be moved or removed from the seabed, a watching brief (undertaken by an appropriately qualified and approved archaeologist) may be required. ▪ Monitoring activities may be undertaken during, and following construction, in those cases a monitoring plan will be developed, all relevant activities will be licensed under the National Monuments Acts 1930-2014 and the results will be assessed and reported by a suitably qualified archaeologist. ▪ The Decommissioning and Restoration Plan as may be updated to ensure that it is appropriate at the time of implementation. <p>There are no significant adverse residual effects on marine archaeological receptors.</p> <p>The proposed development is consistent with Heritage Assets Policy 1.</p>	<p>Volume 3, Chapter 13 Marine Archaeology</p> <p>Volume 2, Chapter 5 Consideration of Alternatives</p> <p>Volume 3, Chapter 14 Cultural Heritage Settings Assessment (Terrestrial Archaeology and Monuments)</p>

Policy	Policy Wording	Response	Related EIAR Chapter
Rural Coastal and Island Communities			
Rural Coastal and Island Communities Policy 1	Proposals contributing to access, communications, energy self-sufficiency or sustainability of rural coastal and / or island communities should be supported. Proposals should ideally be inclusive of continual education, skills development and training in marine sectors, thus improving the sustainability, social benefits and economic resilience of rural and island communities.	<p>Volume 3, Chapter 17 Socio-economic, Tourism, Recreation and Land Use assesses the potential economic impact of the proposed development. The assessment concludes that there are no significant adverse effects on economic value and/or employment resulting from the development, with the assessment of both receptors resulting moderately beneficial effects.</p> <p>The proposed development will provide a community benefit fund, and in accordance with the ORESS1 Community Benefit Fund Rulebook for Generators and Fund Administrators (January 2023) it is required that the Applicant ensures all funding is used for “the sustainable environmental, economic, social and cultural well-being of the local community”. It is noted that there are no island communities in close proximity to the proposed development to avail of the community benefit fund. The Applicant is required to ensure that all applications for funding under the Community Benefit Fund are assessed in a fair, reasonable, non-discriminatory and transparent manner; and that all funding from the Community Benefit Fund is used for the sustainable environmental, economic, social and cultural well being of the local community. Due and careful consideration will be given to funding opportunities for all stakeholders in the local community including, but not limited to, local fishers, seafood culture, tourism, the wider blue economy, and maritime heritage communities.</p>	Volume 3, Chapter 17 Socio-economic, Tourism, Recreation and Land Use
Seascape and Landscape			
Seascape and Landscape Policy 1	<p>Proposals should demonstrate how the likely significant impacts of a development on the seascape and landscape of an area have been considered. Proposals will only be supported if they demonstrate that they, in order of preference:</p> <ol style="list-style-type: none"> avoid, minimise, or mitigate significant adverse impacts on the seascape and landscape of the area. <p>If it is not possible to mitigate significant adverse impacts, proposals must set out the reasons for proceeding.</p> <p>This policy should be included as part of statutory environmental assessments.</p>	<p>Both seascape and landscape visual impact assessments were carried out as part of the EIAR in Volume 3, Chapter 15 Seascape, Landscape and Visual Impact Assessment and Volume 5, Chapter 7 Landscape and Visual, for both the offshore and onshore components, respectively.</p> <p>The assessment of Seascape and Landscape Impact Assessment (Volume 3, Chapter 15) relating to the Dublin Array offshore infrastructure concluded that the development will give rise to significant effects and significant cumulative effects on landscape character during the construction and operational phases, albeit contained within the localised extent of approximately 18 km and would give rise to significant effects on visual amenity out to approximately 21 km. While landscape and visual receptors beyond these ranges may be affected by the influence of the Dublin Array offshore infrastructure, these effects will be not significant. Furthermore, not all landscape and visual receptors within these ranges will be significantly affected, for example tracts of landscape enclosed by forest cover or where screening by buildings occurs. All effects during the construction phase of the Dublin Array Offshore infrastructure will be short-term and reversible and all effects during the operational phase will be long-term and reversible. All effects will be adverse in nature.</p> <p>The Landscape and Visual Impact Assessment relating to the Dublin Array onshore infrastructure (Volume 5, Chapter 7) concludes that there will be no significant effects on landscape character or visual amenity as a result of the Dublin Array Onshore Infrastructure. This is largely due to the relatively small scale and contained extent of the onshore infrastructure as well as the location of these elements in areas that are already influenced by urban development.</p> <p>The proposed development has been designed to incorporate avoidance, preventative and additional mitigation measures to avoid and minimise insofar as possible significant effects. In particular, the applicant has sought to reduce the number of WTGs.</p> <p>Reasons for Proceeding It should be noted that whilst an effect may be significant, that does not necessarily mean that such an impact would be unacceptable or should necessarily be regarded as an 'undue consequence' (GLVIA3 (Landscape Institute and IEMA, 2013) para 5.40). The professional judgement of the assessors of the SLVIA concluded that the the proposed development could be accommodated within views experienced by visual receptor groups, residents and visitors to settlements and receptors of key routes. Visual receptors perceived experience of the surrounding environment would not fundamentally change. Having regard to the policy reference to 'span and scope', expansive views would remain out across a large-scale seascape with, due to location, a greater focus on immediate coastal and landscape features. The proposed development has therefore been judged to be capable of being accommodated in SLVIA terms. Please refer to Chapter 15 SLVIA, Section 15.12 – 15.14 Environmental assessment.</p> <p>Strategic, Economic or Social importance to the State As set out in the Planning Report and EIAR, the proposed development is strategic and national importance for the country as a Phase 1 offshore wind farm project. It will support a significant share of the offshore energy targets for 2030 as well as contribute substantially to a reduction of the carbon budget for the electricity sector for 2026-2030. The carbon budget for the electricity sector was prepared on foot of the Climate Action and Low Carbon (Amendment) Act 2021 and is legally binding.</p>	<p>Volume 3, Chapter 15 Seascape, Landscape and Visual Impact Assessment</p> <p>Volume 5, Chapter 7 Landscape and Visual</p>

Policy	Policy Wording	Response	Related EIAR Chapter
		<p>Dublin Array is anticipated to generate electricity with a carbon intensity of 32.0g/kWh for the maximum design scenario and 20.8g/kWh for the minimum design scenario, compared to the current marginal mix in Ireland of gas derived electricity with a carbon intensity of 371g/kWh. Overall, for both MDO and alternative scenarios, Dublin Array is deemed to be of beneficial significance regarding reduction of emissions compared to the baseline scenarios of gas (Combined Cycle Gas Turbine) (CCGT).</p> <p>The Dublin Array MDO Scenario would result in net emission reductions compared to the project baseline scenarios of 35 MTCO₂e (Gas CCGT). Dublin Array ADO Scenario would result in net emission reductions compared to the project baseline scenarios of 39 MTCO₂e (Gas CCGT). Dublin Array will provide a renewable source of electricity which will beneficially contribute to Ireland's goal of achieving net zero carbon emissions by 2050. Consequently, the effects of Dublin Array are deemed to be of beneficial significance regarding the reduction of GHG emissions, when compared to the above-described baseline scenarios, in accordance with the significance matrix in Table 3. This is considered to be significant in EIA terms.</p> <p>The proposed development is consistent with Seascape and Landscape Policy 1.</p>	
Social Benefits			
Social Benefits Policy 1	Proposals that enhance or promote social benefits should be supported. Proposals unable to enhance or promote social benefits should demonstrate that they will, in order of preference: a) minimise, or b) mitigate significant adverse impacts which result in the displacement of other existing or authorised (but yet to be implemented) activities that generate social benefits.	<p>In accordance with the terms and conditions of the Offshore Renewable Electricity Support Scheme (Auction 1), the proposed development must provide a community benefit fund. The community benefit fund will enhance social benefits of local communities in the locality of the proposed development, with access to funding made available during the operational phase, and for a minimal period of 20 years from the commercial operation date.</p> <p>The Applicant is required to ensure that all applications for funding under the Community Benefit Fund are assessed in a fair, reasonable, non-discriminatory and transparent manner; and that all funding from the Community Benefit Fund is used for the sustainable environmental, economic, social and cultural well being of the local community. Due and careful consideration will be given to funding opportunities for all stakeholders in the local community including, but not limited to, local fishers, seafood culture, tourism, the wider blue economy, and maritime heritage communities.</p> <p>An assessment of the potential socio-economic impacts of Dublin Array was conducted in 2021 and subsequently updated in 2023 and 2024 to reflect the changes in key parameters presented in the EIAR (presented in , Volume 3, Chapter 17 Socio-economic, Tourism, Recreation and Land Use - Annex C). Impacts on GVA² and employment (Impacts 1 and 2 in Volume 3, Chapter 17) draw on the assessment presented within Annex C. As summarised in Volume 3, Chapter 17 Socio-economic, Tourism, Recreation and Land Use), the construction of Dublin Array is anticipated to create €62-68 million GVA per annum within the Greater Dublin Area through the construction phase, and €14-€17 million GVA per annum within the Greater Dublin Area through the O&M phase. In addition, the economic modelling suggests that construction may support up to 800-875 FTE person years of employment (assuming a co-ordination port located within Greater Dublin) per annum, many of which would be within the construction sector. For the O&M phase, the assessment states that a total of 200-240 FTE jobs will be created per annum, with around 70-80 of those being direct FTEs. As such, the proposed development will represent an important boost for the economy and employment.</p>	Volume 3, Chapter 17 Socio-economic, Tourism, Recreation and Land Use
Social Benefits Policy 2	Proposals that increase the understanding and enjoyment of the marine environment (including its natural, historic and social value), or that promote conservation management and increased education and skills, should be supported.	<p>The objective of the proposed development is to increase electricity generated by offshore renewables to help achieve the State's commitments to decarbonise the electricity sector, it does not directly seek to provide enjoyment, conservation or management of the marine environment.</p> <p>In accordance with the terms and conditions of the Offshore Renewable Electricity Support Scheme (Auction 1), the proposed development must provide a community benefit fund. The community benefit fund will enhance social benefits of local communities in the locality of the proposed development, with access to funding made available during the operational phase, and for a minimal period of 20 years from the commercial operation date.</p> <p>The Applicant is required to ensure that all applications for funding under the Community Benefit Fund are assessed in a fair, reasonable, non-discriminatory and transparent manner; and that all funding from the Community Benefit Fund is used for the sustainable environmental, economic, social and cultural well being of the local community. Due and careful consideration will be given to funding opportunities for all stakeholders in the local community including, but not limited to, local fishers, seafood culture, tourism, the wider blue economy, and maritime heritage communities.</p> <p>As demonstrated in the Public Consultation and Engagement Report (see Part 1 A Schedule 5 of the planning application) the Applicant has participated in a significant amount of engagement with the public both in-person and electronically throughout the</p>	Volume 3, Chapter 17 Socio-economic, Tourism, Recreation and Land Use

² Gross Value Added (GVA) is an economic productivity metric that measures the contribution of a corporate subsidiary, company, or municipality to an economy, producer, sector, or region. It provides a value for the amount of goods and services produced, minus the cost of all inputs and raw materials directly attributable to that production.

Policy	Policy Wording	Response	Related EIAR Chapter
		preparation of the EIAR. This engagement allowed the Applicant to better understand public concerns relating to the proposed development but also to provide the public with a greater understanding of the marine environment and the emerging blue economy.	
Transboundary			
Transboundary policy 1	Proposals that have transboundary impacts beyond the maritime area, on either the terrestrial environment or neighbouring international jurisdictions, must show evidence of consultation with the relevant public authorities, including terrestrial planning authorities and other country authorities. Proposals should consider transboundary impacts throughout the lifetime of the proposed activity.	Each of the EIAR chapters assess the potential for transboundary impacts associated with the proposed the proposed development. In all instances, the EIAR concludes that no transboundary effects have been identified. Whilst the EIAR has not identified any potential for transboundary effects, at the request of An Bord Pleanála notification of the application has been made to; <ul style="list-style-type: none"> Northern Ireland (Department for Infrastructure) United Kingdom (Department for Levelling Up, Housing and Communities) Isle of Man (Department of Infrastructure) Scotland (Marine Directorate, Scottish Government) Wales (Energy Division, Welsh Government) 	All EIAR chapters
Sectoral Marine Planning Policies			
Aquaculture			
Aquaculture Policy 1	Proposals for sustainable development of aquaculture that: <ul style="list-style-type: none"> demonstrate use of innovative approaches, and / or contribute to diversification of species being grown in a given locality, particularly proposals applying a multi-trophic approach, and / or enhances resilience to the effects of climate change should be supported. 	No aspects of the proposal relate to the development of aquaculture, and therefore Aquaculture Policy 1 is not applicable to the proposed development. However, the Applicant commits, through use of project design features and avoidance and preventative measures, to avoid and minimise the potential for impacts on commercial fishing activities, including aquaculture. Furthermore, there are no aquaculture facilities in the vicinity of the proposed development.	Volume 3, Chapter 9 Commercial Fisheries
Aquaculture Policy 2	Non-aquaculture proposals in aquaculture production areas must demonstrate consideration of, and compatibility with, aquaculture production. Where compatibility is not possible, proposals must demonstrate that they will, in order of preference: <ol style="list-style-type: none"> avoid; minimise; mitigate significant adverse impacts on aquaculture. If it is not possible to mitigate significant adverse impacts upon aquaculture, proposals should set out the reasons for proceeding. 	The EIAR prepared assesses the potential impact commercial fisheries, including aquaculture as set out in Volume 3, Chapter 9 Commercial Fisheries. The assessment identifies that there are no aquaculture facilities located within or in close proximity to the site boundary for the proposed development. As such, it is considered that there is no potential for significant impacts to aquaculture resulting from the proposed development.	Volume 3, Chapter 9 Commercial Fisheries
Aquaculture Policy 3	Land-based coastal infrastructure that is critical to and supports development of aquaculture should be supported, in accordance with	No aspects of the proposal relate to the development of aquaculture and therefore Aquaculture Policy 3 is not applicable to the proposed development. In addition, there is no land-based coastal infrastructure that is critical to/supporting the development of aquaculture which could be impacted by the proposed development.	Volume 3, Chapter 9 Commercial Fisheries

Policy	Policy Wording	Response	Related EIAR Chapter
	any legal requirements and provided environmental safeguards contained within authorisation processes are fully met.		
Defence and Security			
Defence and Security Policy 1	<p>Any proposal that has the potential to interfere with the performance by the Defence Forces of their security and non-security related tasks must be subject to consultation with the Defence Organisation. This includes potential interference with:</p> <ul style="list-style-type: none"> • Safety of navigation and access to naval facilities; • Firing, test or exercise areas; • Communication, and surveillance systems; • Fishery protection functions. <p>Proposals should only be supported where, having consulted with the Defence Organisation, they are satisfied that it will not result in unacceptable interference with the performance by the Defence Forces of their security and non-security related tasks. Any proposal will be subject to the relevant Environmental Assessments, as set out in the introduction to this NMPF.</p>	<p>The EIAR prepared for the proposed development assesses the potential for the proposed development to impact other users of the marine area, including the defence forces, as outlined in Section 12.3 of Volume 3, Chapter 12 Aviation.</p> <p>Consultation was carried out with the Irish Department of Defence (DoD) in November 2020 resulting in the DoD requesting that the position of seabed cables emanating from the Wind Turbine Generators (WTG) to the shore need to be made known to the Naval Service. The Applicant has agreed to this. All proposed cables will be contained within the identified Offshore ECC and once construction has been completed, all installed assets will be charted, and locations made available to the DoD and other relevant bodies who require such information.</p> <p>During the iterative design process, all constraints were considered whilst attempting to minimise impacts to other marine area users. A number of project design features and avoidance and preventative measures were incorporated as part of the proposed development during the design iterations, in order to avoid, minimise and mitigate against significant adverse impacts other users within the marine environment. Those relevant measures include:</p> <ul style="list-style-type: none"> ▪ Regular promulgation of information regarding activities associated with the the proposed development will ensure that all local operators are aware of any relevant activities associated with the proposed development. The information will take the form of marine notices, navigational aids and marine charting updates. ▪ It is the intention of the Applicant to implement an advisory 500 m safety zone around each of the wind turbines, section of cable and offshore substation platform whilst construction activities are ongoing. Advisory safety zones of 50 m will be implemented for incomplete structures where construction activity may be temporarily paused (and therefore the 500 m safety zone has lapsed). Guard vessels may be in operation to ensure other users do not enter safety zones. An Advisory Safety Zone of 50 m will also be implemented around any offshore O&M activities. ▪ Volume 2, Chapter 6 Project Description details the requirement for a Cable Installation Plan (CIP) and Cable Burial Risk Assessment (CBRA) which will be developed upon award of consent and in advance of construction. The CIP and CBRA will provide information on the installation plan for subsea cables. The CBRA, will provide a risk assessment and evaluation for cable protection, unburied or shallow buried cables. The CIP will detail pertinent mitigation measures to be used during cable installation and will be applied throughout the construction phase. The CIP and CBRA will be submitted to the consenting authority in advance of construction phase. ▪ One or more guard vessels will be present and maintain a position close to construction vessels. Guard vessels will monitor tracks of passing vessels and any potential interaction with construction vessels. ▪ Prior to the decommissioning of the proposed development, consultation with the relevant authorities (including the Marine Survey Office) and any other relevant bodies will be carried out to determine appropriate safety buffers to be maintained around decommissioning vessels. ▪ All structures associated with the proposed development will be charted on relevant nautical and electronic charts. <p>It is considered that the proposed development is consistent with Defence and Security Policy 1.</p>	<p>Volume 3, Chapter 12 Aviation</p> <p>Volume 3, Chapter 11 Marine Infrastructure and Other Users</p> <p>Volume 2, Chapter 6 Project Description</p>
Energy – Natural Gas Storage			
Natural Gas Storage Policy 1	Subject to assessments required for the protection of the environment, and only where in keeping with the outcome of the review of the security of energy supply of Ireland's electricity and natural gas systems (which is being carried out by Department of the Environment, Climate and Communications), natural gas storage proposals should be supported.	The proposed development relates to an ORE project and does not comprise of any activity or development related to natural gas storage. This policy is therefore not applicable to the proposed development.	
Energy – Offshore Renewable			
ORE Policy 1	Proposals that assist the State in meeting the Government's offshore	The proposed development, once constructed, will have a potential electrical generation capacity of between 750 - 824 MW of renewable energy (subject to the final layout to be constructed). The lower capacity will provide 21% of Ireland's 5 GW offshore	Part 1 B Planning Report

Policy	Policy Wording	Response	Related EIAR Chapter
	renewable energy targets, including the target of achieving 5GW of capacity in offshore wind by 2030 and proposals that maximise the long-term shift from use of fossil fuels to renewable electricity energy, in line with decarbonisation targets, should be supported. All proposals will be rigorously assessed to ensure compliance with environmental standards and seek to minimise impacts on the marine environment, marine ecology and other maritime users.	<p>renewable energy target for 2030, while to maximum export capacity will provide 24%. In this regard, the proposed development is consistent with ORE Policy 1.</p> <p>Furthermore, the proposed development has been designed to comply with all relevant environmental standards, as detailed with the accompanying EIAR.</p>	Volume 2, Chapter 2 Consents, Legislation, Policy and Guidance
ORE Policy 2	Proposals must be consistent with national policy, including the Offshore Renewable Energy Development Plan (OREDPP) and its successor. Relevant Projects designated pursuant to the Transition Protocol and those projects that can objectively enable delivery on the Government's 2030 targets will be prioritised for assessment under the new consenting regime. Into the future, areas designated for offshore energy development, under the Designated Marine Area Plan process set out in the Maritime Area Planning Bill, will underpin a plan-led approach to consenting (or development of our marine resources) (Note – see Appendix D on Spatial Designation Process).	<p>A comprehensive Planning Report has been prepared to accompany the Planning Application (included in Part 1 B Planning Report) and provides an overview of all relevant national policy, and how the proposed development is in accordance same. Having regard to OREDPP, the planning report notes that "The proposed development is directly aligned with the provisions of the OREDPP in so far as it will provide the infrastructure necessary to connect a proposed offshore renewable energy generation source (offshore wind farm) to the national electricity grid. This will facilitate an increased supply of renewable energy onto Ireland's overall energy resource portfolio, which will in turn facilitate our just transition away from fossil fuels for the purposes of energy generation". An assessment of the proposed development in the context of the OREDPP recommended Project Level Mitigation Measures is included in Appendix A of this report.</p> <p>The proposed development was designated as a Relevant Project under the Transition Protocol legislated for under the Maritime Area Planning Act, 2021 as amended. The Applicant secured a Maritime Area Consent for Dublin Array OWF in December 2022. In this regard the proposed development is aligned with and supported by ORE Policy 2.</p>	<p>Part 1 B Planning Report</p> <p>Volume 2, Chapter 2 Consents, Legislation, Policy and Guidance</p>
ORE Policy 3	<p>Any non-ORE proposals that are in or could affect sites held under a permission or that are subject to an ongoing permitting or consenting process for renewable energy generation (wind, wave or tidal) should demonstrate that they will in order of preference:</p> <ol style="list-style-type: none"> avoid, minimise, mitigate adverse impacts, or if it is not possible to mitigate significant adverse impacts, proposals should set out the reasons for proceeding. <p>Applicants for non-ORE proposals in or affecting ORE sites should engage ORE developers in consultation during the pre-application processes as appropriate.</p>	ORE Policy 3 is not applicable as the proposed development relates to the provision of an ORE development.	

Policy	Policy Wording	Response	Related EIAR Chapter
ORE Policy 4	Decisions on ORE developments should be informed by consideration of space required for other activities of national importance described in the NMPF	<p>The consideration of space requirements for other marine activities of national importance has been considered during the development of the design for the proposed development.</p> <p>Fishing will not be excluded from the array area with infrastructure being located in a manner to maximise spacing to facilitate co-existence wherever possible.</p> <p>The wind farm array (locations of wind turbine generators) has been designed to allow for navigational safety and to make provision for Search and Rescue corridors through the layout. Inter-array and export cables are designed and will be installed in a manner to minimise interference with the majority of fishing effort in the general area.</p> <p>Provisions will be made for advance notification of the specific locations of construction work during this phase of the proposed development as part of the implementation of a Vessel Management Plan, it is considered that any risks of collision or disruption to recreational (boat based) angling activities will be minimised.</p> <p>It is the intention of the Applicant to implement an advisory 500 m safety zone around each of the wind turbines, section of cable and offshore substation platform whilst construction activities are ongoing. Advisory safety zones of 50 m will be implemented for incomplete structures where construction activity may be temporarily paused (and therefore the 500 m safety zone has lapsed). Guard vessels may be in operation to ensure other users do not enter safety zones. An Advisory Safety Zone of 50 m will also be implemented around any offshore O&M activities.</p>	<p>Part 1 B Planning Report</p> <p>Volume 2, Chapter 2 Consents, Legislation, Policy and Guidance</p>
ORE Policy 5	Proposals for activity that may adversely impact ORE test projects by virtue of being within or adjacent to ORE test sites, or between site and landfall of ORE test projects that may adversely impact ORE test site projects, should demonstrate that they will in order of preference: a) avoid, b) minimise, c) mitigate adverse impacts.	The proposed development is not located in the vicinity of any ORE test site and therefore there is no potential for impacts to occur as a result of the proposed development.	<p>Part 1 B Planning Report</p> <p>Volume 2, Chapter 2 Consents, Legislation, Policy and Guidance</p>
ORE Policy 6	Proposals for infrastructure enabling local use of excess energy generated from emerging marine technologies (wave, tidal, floating wind) should be supported.	ORE Policy 6 is not applicable to the proposed development. The proposed development does not provide local infrastructure to capture excess energy generated by the wind turbine array, as all energy generated will be exported to the national electricity transmission system in accordance with the Maritime Area Consent for the offshore wind farm, the grid connection assessment as issued by EirGrid and the obligations on the project as a successful ORESS1 project.	<p>Part 1 B Planning Report</p> <p>Volume 2, Chapter 2 Consents, Legislation, Policy and Guidance</p>
ORE Policy 7	Where potential for ports to contribute to ORE is identified, plans and policies related to this port must encourage development in such a way as to facilitate ORE and related supply chain activity.	This policy relates to the preparation of plans and policies by Dún Laoghaire-Rathdown County who following the enactment of the Harbours Act 2015 are responsible for the governance of the harbour. Within Dún Laoghaire-Rathdown County Development Plan 2022-2028, Policy Objective CA11: Onshore and Offshore Wind Energy and Wave Energy supports ORE development and onshore infrastructure. Similarly, Policy Objective T34: Access and Ports supports the continued development of Dún Laoghaire Port as a marine related asset, while Policy Objective E18: Maritime Economy supports the sustainable development of the maritime economy. The proposed development is thus supported by and equivalently supports these policies through the development of the O&M base within Dún Laoghaire Harbour.	<p>Part 1 B Planning Report</p> <p>Volume 2, Chapter 2 Consents, Legislation, Policy and Guidance</p>
ORE Policy 8	Proposals for ORE must demonstrate consideration of existing cables passing through or adjacent to areas for development, making sure ability to repair and carry out cable-related remedial work is not significantly compromised. This consideration should be included as part of statutory environmental assessments where such assessments are required.	<p>The proposed development will not cross any existing cables. All cables installed as part of the proposed development will be done so to ensure that they are adequately protected.</p> <p>The export cables (2 no.) for the proposed development will cross three proposed export cables for Codling Wind Park (subject to the project securing planning permission), resulting in a maximum of 6 no. cable crossings. Planning permission has been sought to authorise the crossings of the proposed development export cables either under or over the Codling Wind Park export cables to cater for both scenarios. Volume 3, Chapter 11 Marine Infrastructure and Other Users assesses the potential for impacts resulting from the overlap of export cables from both projects.</p> <p>A number of project design features and avoidance and preventative measures were incorporated as part of the proposed development during the design iterations, in order to avoid, minimise and mitigate against significant adverse impacts other users within the marine environment. Those relevant measures include:</p> <ul style="list-style-type: none"> Routing of the offshore cable route (inter array and Offshore ECC) to avoid existing assets vulnerable to cable installation works 	<p>Part 1 B Planning Report</p> <p>Volume 2, Chapter 2 Consents, Legislation, Policy and Guidance</p> <p>Volume 3, Chapter 11 Marine Infrastructure and Other Users</p>

Policy	Policy Wording	Response	Related EIAR Chapter
		<ul style="list-style-type: none"> Installation of cables to an optimum cable burial depth - offshore cables will, where possible, be buried in the seabed to the optimal performance burial depth for the specific ground conditions. Where optimum burial depth cannot be achieved secondary protection measure will be deployed e.g. concrete mattress, rock berm, grout bags or an equivalent in key areas Agreement with Uisce Éireann on separation distances between the Shanganagh Waste Water Treatment Plant outfall and Offshore EEC to ensure no direct overlap with existing long sea outfalls Engagement with Irish Lights on any project vessel activity occurring within 500 m of the centre point of the Kish Tower Cable crossings agreements between the Applicant, CWP and EirGrid to include the following general design principals: <ul style="list-style-type: none"> Vertical separation between cables will be a minimum of 300mm in addition to burial depths of the first cable; The minimum mattress thickness will be 300 mm and constructed of high-density concrete; Pre lay mattress(s) will be installed over the pre-installed (buried) cable perpendicular to the direction of the lay of the crossing cable; Top mattresses or rock armour will be installed (subject to crossing agreement), which will cover approximately 50 m on each side of the first cables; The profile of crossing will not reduce navigable depth by greater than 5% of surrounding charted depths referenced to chart datum; and The horizontal crossing angle will be between 60 – 90° but will endeavor to achieve as close to 90° as possible. Further engagement with telecommunications service providers <p>The EIA concludes that no significant adverse effects are anticipated on marine infrastructure and other users as a result of the proposed development.</p>	
ORE Policy 9	A permission for ORE must be informed by inclusion of a visualisation assessment that supports conditions on any development in relation to design and layout. Where a development consent is applied for in an area already subject to permission, proposals must include a visualisation assessment to inform design and layout. Visualisation assessments should demonstrate consultation with communities that may be able to view the proposal, in addition to any other ORE development, which had received consent to proceed at a given site at the time the consent application is made, with the aim of minimising impact. Visualisation assessments will be informed by specific emerging guidelines (detailed in the actions set out in Annexes to this NMPF). Prior to specific guidelines being available, policy and best practice relating to visualisation assessment should be used. This consideration must be included as part of statutory environmental assessments where such assessment is required.	<p>The EIAR includes in Volume 4, Appendix 4.3.15-1 SLVIA Methodology and Appendix 4.3.15-4 SLVIA Visualisations which supports the assessment of the project. Volume 3, Chapter 15 SLVIA included within the EIAR sets out the assessment of environmental effects. Feedback was sought from local authorities, and from local communities during public exhibition events where visualisations were provided. Feedback was also received from Community and recreational coastline users. Please refer to the Public Consultation and Engagement Report (Part 1 A Schedule 5 of the planning application) which provides details of such engagement.</p> <p>At the time of submitting the Planning Application, no specific LVIA/SLVIA guidelines have been published. The EIAR therefore refers to best practice as evidence in Section 15.4 of Volume 3, Chapter 15 SLVIA, and within Appendix 4.3.15-1 Landscape and Visual Methodology.</p>	<p>Part 1 B Planning Report</p> <p>Volume 2, Chapter 2 Consents, Legislation, Policy and Guidance</p> <p>Volume 4, Appendix 4.3.15-1 SLVIA Methodology</p> <p>Volume 4, Appendix 4.3.15-4 SLVIA Visualisations</p> <p>Volume 3, Chapter 15 Seascape, Landscape and Visual Impact Assessment</p>
ORE Policy 10	Opportunities for land-based, coastal infrastructure that is critical to and supports development of ORE should be prioritised in plans and policies, where possible.	This policy relates to the preparation of statutory plan developments, marine plans or policy statements by coastal authorities, Maritime Area Regulatory Authority or by the Government, and is not related to developing/preparing consent applications by developers, it is therefore not applicable to the proposed development. Nevertheless, the Dún Laoghaire-Rathdown County Development Plan 2022-2028, Policy Objective CA11: Onshore and Offshore Wind Energy and Wave Energy supports ORE development and onshore infrastructure. Similarly, Policy Objective T34: Access and Ports supports the continued development of Dún Laoghaire Port as a marine related asset, while Policy Objective E18: Maritime Economy supports the sustainable development of the maritime economy.	<p>Part 1 B Planning Report</p> <p>Volume 2, Chapter 2 Consents, Legislation, Policy and Guidance</p>

Policy	Policy Wording	Response	Related EIAR Chapter
		The proposed development is thus supported by and supports these policies through the development of the O&M base within Dún Laoghaire Harbour.	
ORE Policy 11	Where appropriate, proposals that enable the provision of emerging renewable energy technologies and associated supply chains will be supported.	<p>The proposed development will comprise of ORE technology which is currently utilised by other offshore wind farms globally and therefore cannot be categorised as emerging technology in general. However, the offshore wind industry is continually innovating and therefore proposed development will provide an opportunity to support the development of indigenous supply chains opportunities. The applicant understands both the opportunities and challenges that the rapidly growing ORE Irish market brings potential indigenous suppliers. Progressing growth and effective engagement requires developers and higher tier suppliers to work ever closer with the broader supplier network to identify opportunities, communicate timelines, challenges and needs and consider innovative solutions. To this very issue, the applicant has already illustrated leadership in this space with strategic supply chain & skills workshops held in Ireland for the first time. Additionally, the applicant has launched the Supplier Transparency and Engagement Programme (STEP) in March 2023 (https://uk.rwe.com/our-energy/offshore-wind/working-in-partnership-with-the-offshore-supply-chain/supplier-transparency-engagement-programme/), taking a more proactive approach aimed at continuously improving our engagement with the supply chain.</p> <p>The Applicant, through its parent company RWE, has been driving innovation as a leader or active participant in many international research programmes. Examples of collaboration include those with key parties such as the <u>Offshore Renewable Energy Catapult (OREC)</u> and <u>The Carbon Trust</u> in the United Kingdom. The Applicant recognises innovation as a crucial component to supplier growth and overall market success and are committed to ongoing collaborative efforts to engage in this way.</p> <p>The Applicant collaborates with a range of universities and R&D institutes, to drive knowledge creation in the offshore sector. Most recently, RWE's state-of-the-art Sofia construction project has been actively involved in OREC's Launch Academy. Through this, small innovative companies are able to address project-specific and wider industry challenges, as identified by RWE. It is the intention of the Applicant to promote such initiatives in Ireland.</p>	<p>Part 1 B Planning Report</p> <p>Volume 2, Chapter 2 Consents, Legislation, Policy and Guidance</p>
Energy - Petroleum			
Petroleum Policy 1	<p>Proposals in areas where petroleum activities or petroleum production infrastructure have already been approved, or where applications consistent with the Government's prohibition on new exploration activity are under consideration, should only be authorised where compatibility with the existing, authorised or proposed activity can be satisfactorily demonstrated or the proposal is clearly of strategic or national importance. Compatibility should be achieved, in order of preference, through:</p> <p>a) avoiding, or b) minimising, or c) mitigating adverse impacts.</p> <p>If it is not possible to mitigate significant adverse impacts, proposals should set out the reasons for proceeding.</p>	<p>Potential impacts of the proposed development on petroleum related infrastructure are assessed as part of the EIAR for the proposed development.</p> <p>Three oil well heads were identified within the 17km study area, which extends 17km from the boundary of the proposed array area and offshore ECC. A fourth oil well head is located just outside the 17km study area. These are defined as 'Dry Holes' by DCCAE (2020)³, and therefore these are historic and no longer active. The proposed development is located within the extents of the Kish Bank Basin - an area that was previously licenced for petroleum industry exploration. However, as of 2020, the Kish Bank Basin is no longer licensed for oil exploration.</p> <p>No approved or active petroleum activities or petroleum production infrastructure have been identified within the study area. Furthermore, the proposed development is not consistent with the types of development restricted under the Government's 2019 commitment to cease issuing of licences for new exploration and extraction activity. As such, there are no predicted adverse significant impacts associated with the proposed development.</p>	<p>Volume 3, Chapter 11 Marine Infrastructure and Other Users</p> <p>Volume 3, Chapter 19 Major Accidents and Disasters</p>
Petroleum Policy 2	Proposals potentially affecting future potential activity in areas (blocks) subject to existing petroleum authorisations should avoid sterilisation of that area for future	<p>Potential impacts of the proposed development on petroleum related infrastructure are assessed as part of the EIAR.</p> <p>Three oil well heads were identified within the 17km study area, which extends 17km from the boundary of the proposed array area and offshore ECC. A fourth oil well head is located just outside the 17km study area. These are defined as 'Dry Holes' by DCCAE (2020), therefore, these are historic and no longer active. The term "dry hole" was originally used in oil exploration to describe a well</p>	<p>Volume 3, Chapter 11 Marine Infrastructure and Other Users</p> <p>Volume 3, Chapter 19 Major Accidents and Disasters</p>

³ DCCAE, 2020, Available online: <https://www.dccae.gov.ie/en-ie/natural-resources/topics/Oil-Gas-Exploration-Production/Pages/home.aspx> (Accessed 06/01/2024)

Policy	Policy Wording	Response	Related EIAR Chapter
	<p>petroleum-related activity consistent with Government policy, and demonstrate how they, in order of preference:</p> <p>a) avoid, or b) minimise, or c) mitigate potential adverse impacts on those activities.</p> <p>If it is not possible to mitigate significant adverse impacts, proposals should set out the reasons for proceeding.</p>	<p>where no significant reserves of oil were found. As such it is considered that there are no oil reserves beneath the proposed the array area or study area thus future petroleum-related activity in the area is deemed unlikely.</p> <p>The proposed development is located within the extents of the Kish Bank Basin - an area that was previously licenced for petroleum industry exploration. However, as of 2020, the Kish Bank Basin is no longer licensed for oil exploration.</p> <p>The proposed development is consistent with Petroleum Policy 2.</p>	
Energy - Transmission			
Transmission Policy 1	<p>Subject to the appropriate environmental assessments, electricity transmission proposals that maintain or improve the security and diversity of Ireland's energy supply should be supported, including interconnectors, relevant EU Projects of Common Interest (PCIs), and projects in receipt of relevant alternative EU priority energy infrastructure classification provided for by the EU TEN-E regulations.</p> <p>This should include development of the offshore transmission system and connection with the onshore transmission system necessary to meet the Government's target of 5 GW of offshore renewables by 2030, as well as development of associated transmission system / interconnector infrastructure for hybrid offshore projects, connecting offshore renewable energy installations with Ireland and one or more other electricity transmission systems.</p>	<p>The proposed development includes electricity transmission infrastructure comprising of an offshore substation platform, two submarine electricity export cables and all onshore electricity transmission infrastructure to facilitate the export of the electricity generated to the national electricity grid. This will help to improve security of supply through indigenous electricity generation and only exporting electricity to the national electricity transmission grid.</p> <p>The proposed electricity transmission infrastructure is necessary for the development of the proposed development and to contribute to meeting the Government target of 5GW offshore renewable electricity connected to the national electricity transmission system by 2030.</p> <p>The proposed development has been subject to appropriate environmental assessment, including assessments required under the EIA and Habitats Directives respectively. This assessment has been included in Part 3 (Environmental Impact Assessment Report) and Part 4(Habitats Directive Assessments) of the planning application. The planning application will also be subject to such assessments by An Bord Pleanála.</p>	
Transmission Policy 2	<p>Proposals for activities that are in or could affect energy transmission proposals in sites held under a permission or that are subject to an ongoing permitting or consenting process for energy transmission proposals should demonstrate that they will, in order of preference:</p> <p>a) avoid, b) minimise, c) mitigate adverse impacts, or d) if it is not possible to mitigate significant adverse impacts, proposals should set out the reasons for proceeding.</p>	<p>The export cables for the subject proposed development and the export cable route for Codling Wind Park overlap (an application for Codling Wind Park was lodged with An Bord Pleanála on 06 September 2024). The export cables for the proposed development will cross three proposed export cables for Codling Wind Park, with six cable crossings identified. The environmental assessment has assessed the overlap of export cables from both projects (see Volume 3, Chapter 11 Marine Infrastructure and Other Users of the EIAR), and no significant adverse impacts were identified.</p> <p>Subject to the terms of planning permission granted for both Dublin Array and Codling Wind Park by An Bord Pleanála, details of the final cable crossing installation design will be confirmed by the Applicant and Codling Wind Park (in consultation with EirGrid, who will be the future asset owner). A crossing agreement will be put in place between all three parties, and will include general design principles, such as vertical separation distances, thickness of protection and profile of crossings.</p>	<p>Volume 3, Chapter 11 Marine Infrastructure and Other Users</p> <p>Volume 3, Chapter 19 Major Accidents and Disasters</p>

Policy	Policy Wording	Response	Related EIAR Chapter
Transmission Policy 3	Decisions on transmission developments should be informed by consideration of space required for other activities of national importance described in the NMPF.	<p>The proposed offshore export cables will be located within the seabed and once laid will not have any impact on available space. All proposed cables will be contained within the identified offshore Export Cable Corridor and once construction has been completed, all installed assets will be charted, and locations made available to the Department of Defence and other relevant bodies request such information.</p> <p>During the iterative design process, all constraints were considered whilst attempting to minimise impacts to other marine area users. A number of project design features and avoidance and preventative measures were incorporated as part of the proposed development during the design iterations, in order to avoid, minimise and mitigate against significant adverse impacts other users within the marine environment. Those relevant measures include:</p> <ul style="list-style-type: none"> Regular promulgation of information regarding activities associated with the proposed development will ensure that all local operators are aware of any relevant activities associated with the proposed development. The information will take the form of marine notices, navigational aids and marine charting updates. It is the intention of the Applicant to implement an advisory 500 m safety zone around each of the wind turbines, section of cable and offshore substation platform whilst construction activities are ongoing. Advisory safety zones of 50 m will be implemented for incomplete structures where construction activity may be temporarily paused (and therefore the 500 m safety zone has lapsed). Guard vessels may be in operation to ensure other users do not enter safety zones. An Advisory Safety Zone of 50 m will also be implemented around any offshore O&M activities. Volume 2, Chapter 6 Project Description of the EIAR details the requirement for a Cable Installation Plan (CIP) and Cable Burial Risk Assessment (CBRA) which will be developed upon award of consent and in advance of construction. The CIP and CBRA will provide information on the installation plan for subsea cables. The CBRA, will provide a risk assessment and evaluation for cable protection, unburied or shallow buried cables. The CIP will detail pertinent mitigation measures to be used during cable installation and will be applied throughout the construction phase. The CIP and CBRA will be submitted to the consenting authority in advance of construction phase. One or more guard vessels will be present and maintain a position close to construction vessels. Guard vessels will monitor tracks of passing vessels and any potential interaction with construction vessels. Prior to the decommissioning of the proposed development, consultation with the relevant authorities (including the Marine Survey Office) and any other relevant bodies will be carried out to determine appropriate safety buffers to be maintained around decommissioning vessels. All structures associated with the proposed development will be charted on relevant nautical and electronic charts. 	<p>Part 1 B Planning Report</p> <p>Volume 2, Chapter 2 Consents, Legislation, Policy and Guidance</p> <p>Volume 2, Chapter 6 Project Description</p>
Transmission Policy 4	Where possible, opportunities for land-based, coastal infrastructure that is critical to and supports energy transmission should be prioritised in plans and policies. Designation of land-based zones for the purposes of co-ordination and integration with relevant Marine Plans must be considered, where appropriate.	<p>The initial section of this policy relates to the preparation of statutory plan development and is not applicable to the planning application for the proposed development.</p> <p>The Planning Report accompanying the Planning Application has considered all land use zoning applicable to the proposed development, which includes the proposed O&M base at Dún Laoghaire Harbour, which is important coastal infrastructure for the proposed development.</p> <p>The Planning Report did not identify any non-compatible land uses, at or adjacent the location of the O&M base at St. Michael's Pier and Wharf within Dún Laoghaire Harbour, which is located within zoning objective W, which seeks "To provide for waterfront development and harbour related uses". The O&M base is aligned with existing uses in the harbour area and the objectives of zoning objective W, as it will provide harbour related uses whilst also providing employment. The proposed development is considered to be consistent with Transmission Policy 4.</p>	<p>Part 1 B Planning Report</p> <p>Volume 2, Chapter 2 Consents, Legislation, Policy and Guidance</p>
Transmission Policy 5	Proposals for construction or operation activities within one nautical mile of either of the two existing natural gas interconnector pipelines shall be avoided. If construction or operation activities are proposed to take place within one nautical mile of either of the two existing natural gas interconnector pipelines, the views of Gas Networks Ireland in relation to how such activities could impact the pipelines shall be taken into account and either appropriate mitigation measures put in place or the proposed activities altered.	This policy is not applicable as there are no gas interconnectors or gas pipelines within one nautical mile of the proposed development.	

Policy	Policy Wording	Response	Related EIAR Chapter
Transmission Policy 6	Subject to required assessments for the protection of the environment, and only where in keeping with the outcome of the review of the security of energy supply of Ireland's electricity and natural gas systems (which is being carried out by Department of the Environment, Climate and Communications), and not involving the importation of fracked gas, additional proposals for natural gas transmission/ import infrastructure should be supported.	The proposed development does not involve the importation of fracked gas nor additional natural gas transmission/import infrastructure. This policy objective is therefore not applicable.	
Fisheries			
Fisheries Policy 1	<p>Proposals that may have significant adverse impacts on access for existing fishing activities, must demonstrate that they will, in order of preference:</p> <p>a) avoid, b) minimise, or c) mitigate such impacts.</p> <p>If it is not possible to mitigate significant adverse impacts on fishing activity, the public benefits for proceeding with the proposal that outweigh the significant adverse impacts on existing fishing activity must be demonstrated.</p>	<p>The Applicant has engaged directly with the local fishing community. This engagement has been supported through the involvement of a Fisheries Liaison Officer and through periodic meetings of a commercial fisheries working group. The Applicant is also an active participant in the National Seafood Offshore Renewable Energy Working Group which is developing good practice guidance relevant to both sectors activities.</p> <p>Fishing is not sought to be excluded from the proposed development area during operation and maintenance activities as the array layout design has considered fishing activity that occurs in the area. Operational safety zones may apply around structures and would usually be up to 50m. However, given the total area of the offshore infrastructure area, it is not expected that the impact would be significant. The design of the inter-array, interconnector and export cables will not present any restriction to the majority of fishing effort in the local area. Volume 3, Chapter 9 Commercial Fisheries of the EIAR describes measures applied to minimise disruption to fishing activity, and avoid significant effects. The EIAR identified effects on the displacement of commercial fisheries which would normally access the array site and offshore export cable corridor (ECC) ranging from imperceptible to moderate adverse as a result of the proposed development. However, following the implementation of appropriate mitigations measures, the residual significance of impact is concluded as Slight adverse which is not significant in EIA terms. A Fisheries Management and Mitigation Strategy (FMMS) accompanies the planning application (Volume 7, Part 3) and outlines potential opportunities for co-existence and co-operation, as well as avoidance and preventative measures.</p> <p>The Applicant is also committed to continuing to liaise with fishermen throughout all stages of the proposed development, by way of:</p> <ul style="list-style-type: none"> ▪ Appointment of a company Fisheries Liaison Officer (FLO) to maintain effective communications between Dublin Array and fishermen; ▪ Appointment of an appropriate liaison with relevant fishing interests to ensure that they are fully informed of development planning and any offshore activities and works; and ▪ Timely issue of notifications including Notice to Mariners (NtMs), navigational warnings to the fishing community to provide advance warning of project activities and associated advisory safe passing distances. <p>A Project Environment Management Plan (PEMP) (see Volume 7, Part 1 of the EIAR) accompanies the planning application to provide details regarding the commitments and the principles to be adopted, and the steps to be completed pre-construction to develop final plans. The PEMP will be finalised and implemented post-consent. The PEMP will be a comprehensive document that outlines the strategies and protocols for minimising and mitigating the environmental impact of the development and will include details of a vessel management plan, to determine vessel routing to and from construction sites and ports, to include a code of conduct for vessel operators.</p> <p>Prior to the decommissioning of the proposed development, consultation with the relevant authorities (including the Marine Survey Office) and any other relevant bodies will be carried out to determine appropriate safety buffers to be maintained around decommissioning vessels.</p> <p>It is envisaged that there will be no significant adverse residual effects on commercial fishing activities, including access, as a result of the proposed development.</p> <p>The proposed development is consistent with Fisheries Policy 1.</p>	<p>Volume 3, Chapter 9 Commercial Fisheries</p> <p>Volume 7 Part 3 Fisheries Management and Mitigation Strategy (FMMS)</p> <p>Volume 7, Appendix 7.1 PEMP (Project Environmental Management Plan)</p>

Policy	Policy Wording	Response	Related EIAR Chapter
Fisheries Policy 2	<p>Where significant impact upon fishing activity arising from any proposal is identified, a Fisheries Management and Mitigation Strategy (FMMS) should be prepared by the proposer of development or other maritime area use, in consultation with local fishing interests and other interests as appropriate. All efforts should be made to agree the FMMS with those interests. Those interests should also undertake to engage with the proposer and provide best available, transparent and accurate information and data in a timely manner to help complete the FMMS. The FMMS should be drawn up as part of readying a proposal prior to submission, with measures identified to be considered in finalising conditions of any authorisations granted. Development of the strategy should be coordinated with other relevant assessments such as EIA where possible.</p> <p>The content of the Fisheries Management and Mitigation Strategy (FMMS) should be relevant to the particular circumstances and could include:</p> <ul style="list-style-type: none"> • An assessment of the potential impact of all stages of the development or other suggested use on the affected fishery or fisheries, both in socio-economic terms and in relation to environmental sustainability. This assessment should include consideration of any impact upon cultural identity within fishing communities, as well as identifying indirect / in-combination matters. • A recognition that the disruption to existing fishing opportunities / activity should be minimised as far as possible. • Demonstration of the public benefit(s) that outweigh the significant impacts identified. • Reasonable measures to mitigate any constraints which the proposed development or use may place on existing or proposed fishing activity. • Reasonable measures to mitigate any potential impacts on sustainability of fish stocks (e.g. impacts on spawning grounds or 	<p>Whilst there are no residual significant (fleet level) impacts predicted in EIAR Volume 3, Chapter 9 Commercial Fisheries, some short term significant impacts were identified during construction that require prevention and avoidance. Therefore, the Applicant has chosen to implement an FMMS thereby reducing residual impact.</p> <p>Assessment of potential impacts of all stages of the proposed development is addressed in EIAR Volume 3, Chapter 9 Commercial Fisheries. Section 7 of the FMMS (Volume 7, Appendix 7.3) recognises the disruption to fishing activity should be minimised as far as possible and outlines the project design features and avoidance and preventative measures to achieve this. The Planning Report outlines the public benefits of the proposed development. Section 7 of this FMMS outlines the measures identified in EIAR Volume 3, Chapter 9 Commercial Fisheries, therefore the Applicant considers the public benefit of the Dublin Array OWF project outweigh the significant impacts identified. Impacts and avoidance and preventative measures associated with the sustainability of fisheries are assessed in EIAR Volume 3, Chapter 4 Fish and Shellfish Ecology. The proposed contents of the FMMS have been consulted on with the fisheries stakeholders. Industry feedback will inform the development of the post-consent FMMS, which will be based on policies and stakeholder feedback relevant at that time.</p> <p>It is envisaged that there will be no significant adverse residual effects on fisheries as a result of the proposed development.</p> <p>The proposed development is consistent with Fisheries Policy 1.</p>	<p>Volume 3, Chapter 9 Commercial Fisheries</p> <p>Volume 7 Appendix 7.3 Fisheries Management and Mitigation Strategy (FMMS)</p> <p>Volume 3, Chapter 4 Fish and Shellfish Ecology</p>

Policy	Policy Wording	Response	Related EIAR Chapter
	<p>areas of fish or shellfish abundance) and any socio-economic impacts.</p> <p>Where it does not prove possible to agree the FMMS with all interests:</p> <ul style="list-style-type: none"> • Divergent views and the reasons for any divergence of views between the parties should be fully explained in the FMMS, and dissenting views should be given a platform within the said FMMS to make their case. • Where divergent views are identified, relevant public authorities should be engaged to identify informal and formal steps designed to enable proposal(s) to progress. 		
Fisheries Policy 3	Proposals that enhance the sustainability of fisheries or support a sustainable fishing industry, including the industry's diversification and or enhanced resilience to the effects of climate change, should be supported provided they fully meet the environmental safeguards contained within authorisation processes.	Impacts associated with commercial fisheries are assessed in EIAR Volume 3, Chapter 9 Commercial Fisheries. The document outlines the impacts during operations and maintenance (O&M), including detail on array layout and cable burial, and confirmation that fishing will not be excluded from the array area or ECC. Project design features and avoidance and preventative measures relevant to the assessment of commercial fisheries are set out in Volume 3, Chapter 9 Commercial Fisheries.	Volume 3, Chapter 9 Commercial Fisheries
Fisheries Policy 4	Infrastructural proposals that enable access to fishing activities should be supported provided they fully meet the environmental safeguards contained within authorisation processes.	Impacts associated with the sustainability of fisheries are assessed in Volume 3, Chapter 9 Commercial Fisheries. The document outlines the impacts during O&M, including detail on array layout and cable burial, and confirmation that fishing will not be excluded from the array area or ECC. Project design features and avoidance and preventative measures relevant to the assessment of commercial fisheries are set out in Volume 3, Chapter 9 Commercial Fisheries. Impacts associated with fish habitat are assessed in Volume 3, Chapter 4 Fish and Shellfish Ecology.	<p>Volume 3, Chapter 9 Commercial Fisheries</p> <p>Volume 3, Chapter 4 Fish and Shellfish Ecology</p>
Fisheries Policy 5	<p>Proposals, regardless of the type of activity they relate to, enhancing essential fish habitat, including spawning, nursery and feeding grounds, and migratory routes should be supported. If proposals cannot enhance essential fish habitat, they must demonstrate that they will, in order of preference:</p> <ol style="list-style-type: none"> avoid, minimise, mitigate <p>significant adverse impact on essential fish habitat, including spawning, nursery and feeding grounds, and migration routes.</p> <p>d) If it is not possible to mitigate significant adverse impact on essential fish habitat, proposals must set out the reasons for proceeding.</p>	<p>The EIAR prepared for the proposed development assesses the potential for the proposed development to impact commercial fisheries and fish habitats, as assessed in Chapter 4 Fish and Shellfish Ecology. It is acknowledged that through the construction, operational and decommissioning phases of the proposed development there is the potential for impacts to fisheries and fish habitats from several potential sources, including;</p> <ul style="list-style-type: none"> ▪ Temporary increase in suspended sediment concentration (SSC) and sediment deposition as a result of construction activities, O&M activities and decommissioning activities. ▪ Temporary damage and disturbance of the seabed during construction activities and O&M activities and decommissioning activities. ▪ Reduction in water and sediment quality through the release of contaminated sediments and/or accidental contamination ▪ Introduction of underwater noise and vibration leading to mortality, injury, TTS, behavioural changes, or auditory masking ▪ Long-term loss of habitat due to placement of subsea infrastructure ▪ Increase in hard substrate and structural complexity due to the placement of subsea infrastructure ▪ Potential barriers to movement through the presence of seabed infrastructure and EMF from cables ▪ Changes to seabed habitats resulting from effects on local hydrodynamic and sediment transport processes <p>Notwithstanding, a number of project design features and avoidance and preventative measures have been incorporated into the proposed development including;</p> <ul style="list-style-type: none"> ▪ Volume 2, Chapter 6 Project Description of the EIAR details the requirement for a Cable Installation Plan (CIP) and Cable Burial Risk Assessment (CBRA) which will be developed upon award of consent and in advance of construction. The CIP and CBRA will provide information on the installation plan for subsea cables. The CBRA, will provide a risk assessment and evaluation for cable protection, unburied or shallow buried cables. The CIP will detail pertinent mitigation measures to be used during cable installation and will be applied throughout the construction phase. The CIP and CBRA will be submitted to the consenting authority in advance of construction phase. A Project Environment Management Plan (PEMP) (see Volume 7, Part 1 of the EIAR) accompanies the planning application and will be further developed post-consent and implemented to cover the construction and operation and maintenance phases of the proposed development. The PEMP will include details of: 	<p>Volume 3, Chapter 9 Commercial Fisheries</p> <p>Volume 3, Chapter 4 Fish and Shellfish Ecology</p> <p>Volume 2, Chapter 6 Project Description</p> <p>Volume 7, Appendix 7.1 PEMP (Project Environment Management Plan)</p>

Policy	Policy Wording	Response	Related EIAR Chapter
		<ul style="list-style-type: none"> – A Marine Pollution Contingency Plan to cover accidental spills, potential contaminant release in relation to all activities carried out below MHWS, and include key emergency contact details (e.g., the Irish Coast Guard (IRCG)) and will comply with the National Maritime Oil/ HNS Spill Contingency Plan (IRCG, 2020). – A chemical risk review to include information regarding how and when chemicals are to be used, stored and transported in accordance with recognised best practice guidance; – Waste management and disposal arrangements; – A Vessel Management Plan, to determine vessel routing to and from construction sites and ports, to include a code of conduct for vessel operators; and – The appointment and responsibilities of a company fisheries liaison officer. – A Scour Protection Management Plan will be developed. It will include details of the need, location, type, quantity and installation methods for scour protection. <ul style="list-style-type: none"> ▪ A Decommissioning and Restoration Plan accompanies the planning application in Volume 7 of the EIAR. <p>It is envisaged that there will be no significant adverse residual effects on fisheries or fish habitats as a result of the proposed development.</p> <p>The proposed development is consistent with Fisheries Policy 5.</p>	
Fisheries Policy 6	<p>Ports and harbours should seek to engage with fishing and other relevant stakeholders at an early stage to discuss any changes in infrastructure that may affect them. Any port or harbour developments should take account of the needs of the dependent fishing fleets with a view to avoiding commercial harm where possible.</p> <p>Where a port or harbour has reached a minimum level of infrastructure required to support a viable fishing fleet, there should be a presumption in favour of maintaining this infrastructure, provided there is an ongoing requirement for it to remain in place and that it continues to be fit for purpose.</p>	<p>The proposed development includes upgrade works proposed at the Operation and Maintenance (O&M) base located at Dún Laoghaire Harbour which is currently used for commercial fishing activities, amongst other uses.</p> <p>Impacts and project design features and avoidance and preventative measures associated with fishing fleets are assessed in EIAR Volume 3, Chapter 9 Commercial Fisheries. The proposed O&M base and associated infrastructure is located in a part of the harbour which is not used for commercial fishing activities. The development of the design to date has been undertaken in detailed consultation with the Dún Laoghaire-Rathdown County Council and the associated harbour operations management team to ensure no impact on existing commercial fisheries activities.</p>	Volume 3, Chapter 9 Commercial Fisheries
Mineral Exploration and Mining			
Mineral Exploration and Mining Policy 1	Only proposals which are in line with national policy on mineral exploration and mining should be considered, provided they fully meet the environmental safeguards contained within the mineral exploration and mining consent processes.	The proposed development is for an offshore wind farm and associated infrastructure. It does not comprise of any activity or development related to mineral exploration. This policy is not applicable to the proposed development.	
Ports, Harbours and Shipping			
Ports, Harbours and Shipping Policy 1	<p>To provide for shipping activity and freedom of navigation the following factors will be taken into account when reaching decisions regarding development and use:</p> <ul style="list-style-type: none"> • The extent to which the locational decision interferes with existing or planned routes used by shipping, access to ports and harbours and navigational safety. This includes commercial anchorages and 	<p>Impacts on shipping and navigation receptors are assessed in the EIAR in Volume 3, Chapter 10 Shipping and Navigation. As outlined in section 10.11 – 10.13 adverse impacts have been avoided and / or mitigated. A Navigation Risk Assessment accompanies the planning application in Appendix 4.3.10-1 Navigational Risk Assessment. The NRA presents information regarding baseline features and activity of relevance to the proposed development and considers potential effects of the wind farm to shipping and navigation users. The findings of the NRA are then used to inform the impact assessment undertaken in Volume 3, Chapter 10 Shipping and Navigation of the EIAR.</p>	<p>Volume 3, Chapter 10 Shipping and Navigation</p> <p>Volume 4, Appendix 4.3.10-1 Dublin Array Wind Farm Navigation Risk Assessment</p>

Policy	Policy Wording	Response	Related EIAR Chapter
	<p>approaches to ports as well as key littoral and offshore routes;</p> <ul style="list-style-type: none"> • A mandatory Navigation Risk Assessment; • Where interference is likely: whether reasonable alternatives can be identified; and • Where there are no reasonable alternatives: whether mitigation through measures adopted in accordance with the principles and procedures established by the International Maritime Organisation can be achieved at no significant cost to the shipping or ports sector. 		
Ports, Harbours and Shipping Policy 2	<p>Proposals that may have a significant impact upon current activity and future opportunity for expansion of port and harbour activities should demonstrate that they will, in order of preference:</p> <ol style="list-style-type: none"> avoid, minimise, or mitigate significant adverse impacts, and if it is not possible to mitigate significant adverse impacts on current activity and future opportunity for expansion of port and harbour activities, proposals should set out the reasons for proceeding. 	<p>The development of the O&M base at Dún Laoghaire Harbour will not impact the current or future activities or any proposed future expansion of the harbour. The proposed O&M infrastructure is located within an existing part of the harbour which has restricted public access for operational control, safety and security reasons. The development of the design to date has been undertaken in detailed consultation with the Dún Laoghaire-Rathdown County Council and the associated harbour operations management team.</p>	Volume 3, Chapter 10 Shipping and Navigation
Ports, Harbours and Shipping Policy 3	<p>Proposals that may have a significant impact upon current activity and future opportunity for expansion of port and harbour activities must demonstrate consideration of the National Ports Policy, the National Planning Framework, and relevant provisions related to the TEN-T network.</p>	<p>As stated in the response to Ports, Harbours and Shipping Policy 2 above, the proposed development will not impact current or future opportunities for expansion of port and harbour activities at Dún Laoghaire Harbour. Due to the absence of any significant impact, there is no specific consideration given to the National Ports Policy, furthermore it is noted that Dún Laoghaire Harbour is no longer governed by the National Ports Policy following the enactment of the Harbours Act 2015. Similarly, Dún Laoghaire Harbour does not form part of the T-TEN network.</p> <p>Planning policy considerations in relation to the O&M base in the context of the National Planning Framework as discussed within Section 3.3.4 of the Planning Report.</p>	<p>Volume 3, Chapter 10 Shipping and Navigation</p> <p>Part 1 B Planning Report</p>
Ports, Harbours and Shipping Policy 4	<p>Proposals within ports limits, beside or in the vicinity of ports, and / or that impact upon the main routes of significance to a port, must demonstrate within applications that they have:</p> <ul style="list-style-type: none"> • been informed by consultation at pre-application stage or earlier with the relevant port authority; • have carried out a navigational risk assessment including an analysis of maritime traffic in the area; and • have consulted Department of Transport, MSO and Commissioners of Irish Lights. <p>Applicants must continue to engage parties identified in pre-application</p>	<p>The development of the O&M base at Dún Laoghaire Harbour will not impact the current or future activities or any proposed future expansion of the harbour. The proposed O&M infrastructure is located within an existing part of the harbour which has restricted public access for operational control, safety and security reasons. The development of the design to date has been undertaken in detailed consultation with the Dún Laoghaire-Rathdown County Council and the associated harbour operations management team.</p>	Volume 3, Chapter 10 Shipping and Navigation

Policy	Policy Wording	Response	Related EIAR Chapter
	processes as appropriate during the decision-making process.		
Ports, Harbours and Shipping Policy 5	Proposals for capital dredging will be supported where it is necessary to safeguard national port capacity and Ireland's international connectivity, and where required compliance assessments associated with authorisations have been carried out and incorporated into subsequent competent authority decision(s).	Ports, Harbours and Shipping Policy 5 is not applicable as no capital dredging works will be required to facilitate the proposed development. Where any dredging is required for the purposes of submarine cable installation it will be subject to a Dumping at Sea Permit from the Environmental Protection Agency as appropriate.	Volume 3, Chapter 10 Shipping and Navigation
Ports, Harbours and Shipping Policy 6	In areas of authorised dredging activity, including those subject to navigational dredging, proposals for other activities will not be supported unless they are compatible with the dredging activity.	The proposed development will not impact upon any dredging works which may be required for the continued operation or development of Dún Laoghaire Harbour.	Volume 3, Chapter 10 Shipping and Navigation
Ports, Harbours and Shipping Policy 7	Proposals for maintenance dredging activity will be supported where: <ul style="list-style-type: none"> • relevant decisions by competent authorities incorporate the outcome of statutory environmental assessment processes, as well as necessary compliance assessments associated with authorisations, including in relation to the planning process; • there will be no significant adverse impact on marine activities or uses or the maritime area. Any potential adverse impact will be, in order of preference, avoided, minimised or mitigated; • dredged waste is managed in accordance with internationally agreed hierarchy of waste management options for sea disposal; • if disposing of dredged material at sea, existing registered disposal sites are used, in preference to new disposal sites; and • where they contribute to the policies and (marine) objectives of this NMPF. 	The proposed development does not require maintenance dredging activity. This policy is not applicable to the proposed development.	Volume 3, Chapter 10 Shipping and Navigation
Ports, Harbours and Shipping Policy 8	Proposals that cause significant adverse impacts on licensed disposal areas should not be supported. Proposals that cannot avoid such impact must, in order of preference" <ul style="list-style-type: none"> a) minimise, b) mitigate, or c) if it is not possible to mitigate the significant adverse impacts, proposals must set out the reasons for proceeding. 	The proposed development is not located within close proximity to any licenced (marine) disposal site. This policy is not applicable to the proposed development.	Volume 3, Chapter 10 Shipping and Navigation

Policy	Policy Wording	Response	Related EIAR Chapter
Ports, Harbours and Shipping Policy 9	Proposals for the management of dredged material must demonstrate that they have been assessed against the waste hierarchy.	Where any dredging is required for the purposes of foundation installation activities or submarine cable installation it will be subject to a Dumping at Sea Permit from the Environmental Protection Agency as appropriate. This policy objective relates to dredging activities undertaken within ports and harbours. This policy is not applicable to the proposed development.	Volume 3, Chapter 10 Shipping and Navigation
Ports, Harbours and Shipping Policy 10	Proposals identifying new dredge disposal sites which are subject to best practice and guidance from previous studies should be supported where: <ul style="list-style-type: none"> • competent authority decisions incorporate necessary compliance assessments associated with authorisations; and • they contribute to the policies and objectives of this NMPF. Proposals must include an adequate characterisation study, be assessed against the waste hierarchy and must be informed by consultation with all relevant stakeholders.	The proposed development will require a Dumping at Sea Permit from the Environmental Protection Agency to dispose of any materials including dredged material to facilitate foundation installations or sub-sea cable laying. This policy is not applicable to the proposed development.	Volume 3, Chapter 10 Shipping and Navigation
Safety at Sea			
Safety at Sea Policy 1	Proposals for installation, operation, and decommissioning of Offshore Wind Farms must demonstrate how they will: <p>Minimise navigational risk between commercial vessels arising from an increase in the density of vessels in maritime space as a result of wind farm layout; and</p> <p>Allow for recreational vessels within the Offshore Wind Farm (including consideration of turbine height) or redirect recreational vessels, minimising navigational risk arising between recreational and commercial vessels.</p>	<p>A Navigation Risk Assessment accompanies the planning application in Volume 4, Appendix 4.3.10-1 Navigational Risk Assessment of the EIAR. The NRA presents information regarding baseline features and activity of relevance to the proposed development and considers potential effects of the wind farm to shipping and navigation users. The findings of the NRA are then used to inform the impact assessment undertaken in Volume 3, Chapter 10 Shipping and Navigation of the Environmental Impact Assessment Report (EIAR).</p> <p>During the iterative design process, all constraints were considered with regard to optimisation of space whilst attempting to minimise impacts to other marine area users and other marine infrastructure. In addition, the layouts of the offshore wind farm array have been designed to allow Search and Rescue (SAR) lanes in at least one line of orientation.</p> <p>It should be noted that in the interest of co-existence, a number of public consultation events were carried out, alongside statutory consultation with a number of prescribed bodies. Issues and concerns arising from these consultations were considered and where possible addressed as part of the iterative design process for the proposed development.</p> <p>The EIAR outlines the project design features and avoidance and preventative measures set out to avoid contribution to adverse impacts on other marine activities, including impacts to commercial and recreation vessels. Those measures aimed at avoiding and minimising impacts include;</p> <ul style="list-style-type: none"> ▪ Regular promulgation of information regarding activities associated with the proposed development will ensure that all local operators are aware of any relevant activities associated with the proposed development. The information will take the form of marine notices, navigational aids and marine charting updates. ▪ The Applicant will engage with the relevant recreational clubs and associations in order to minimise the potential for disturbance, with advanced warning of vessel transits during the construction phase. ▪ Provisions will be made for advance notification of the specific locations of construction work during this phase of the proposed development as part of the implementation of a Vessel Management Plan, it is considered that any risks of collision or disruption to recreational (boat based) angling activities will be minimised. It is the intention of the Applicant to implement an advisory 500 m safety zone around each of the wind turbines, section of cable and offshore substation platform whilst construction activities are ongoing. Advisory safety zones of 50 m will be implemented for incomplete structures where construction activity may be temporarily paused (and therefore the 500 m safety zone has lapsed). Guard vessels may be in operation to ensure other users do not enter safety zones. An Advisory Safety Zone of 50 m will also be implemented around any offshore O&M activities. ▪ One or more guard vessels will be present and maintain a position close to construction vessels. Guard vessels will monitor tracks of passing vessels and any potential interaction with construction vessels. ▪ Prior to the decommissioning of the proposed development, consultation with the relevant authorities (including the Marine Survey Office) and any other relevant bodies will be carried out to determine appropriate safety buffers to be maintained around decommissioning vessels. ▪ All structures associated with the proposed development will be charted on relevant nautical and electronic charts. 	<p>Volume 3, Chapter 10 Shipping and Navigation</p> <p>Volume 4, Appendix 4.3.10-1 Dublin Array Wind Farm Navigation Risk Assessment</p> <p>Volume 3, Chapter 9 Commercial Fisheries</p> <p>Volume 7 Appendix 7.3 Fisheries Management and Mitigation Strategy (FMMS)</p>

Policy	Policy Wording	Response	Related EIAR Chapter
		<ul style="list-style-type: none"> Project design was completed in compliance with the standard MGN 654. Includes the requirement to consult with MSO and Irish Lights in the event that water depths are reduced by more than 5% as a result of cable protection or other infrastructure, to ensure that navigational risk is minimised. Marking and lighting offshore infrastructure in accordance with relevant industry guidance and as advised by relevant stakeholders including in accordance with IALA G-1162 (IALA, 2021) and Irish Lights requirements. In particular, the use of marine lighting to mark selected peripheral structures. All structures associated with Dublin Array will be adequately marked on nautical and electronic charts. <p>As presented within the EIAR Volume 3, Chapter 9 Commercial Fisheries, a number of measures have been adopted to facilitate co-existence, including the project WTG layout options being developed to avoid or minimise interaction with known areas of high fishing density, where possible. As avoidance is not always possible, the layouts have also been developed to increase the potential for coexistence. The EIAR identified effects on the displacement of commercial fisheries which would normally access the array site and offshore export cable corridor (ECC) ranging from imperceptible to moderate adverse as a result of the proposed development. However, following the implementation of appropriate mitigations measures, the residual significance of impact is concluded as Slight adverse which is not significant in EIA terms. A Fisheries Management and Mitigation Strategy (FMMS) accompanies the planning application (Volume 7, Appendix 7.3) and outlines potential opportunities for co-existence and co-operation, as well as project design features and avoidance and preventative measures. The project will facilitate the operational coexistence. Fishing will not be excluded from the array area as the array layout has considered fishing activity that occurs in the area. Infrastructure has been sited appropriately to facilitate coexistence where possible. Operational safety zones may apply around structures and would usually be up to 50m. However, given the total area of the offshore infrastructure, it is not expected that the impact would be significant and will be temporary in nature. The design of the inter-array, interconnector and export cables will not present any restriction to fishing effort in the local area.</p> <p>Impacts on shipping and navigation receptors are assessed in Volume 3, Chapter 10 Shipping and Navigation in section 10.11 – 10.13. as outlined therein, adverse impacts have been avoided and / or mitigated. Project design features and avoidance and preventative measures relevant to shipping and navigation are outlined in section 10.10 of Volume 3, Chapter 10 Shipping and Navigation.</p>	
Safety at Sea Policy 2	Proposals for infrastructure that have the potential to significantly reduce under-keel clearance must demonstrate how they will, in order of preference: a) avoid, b) minimise, c) mitigate adverse impacts, or d) if it is not possible to mitigate significant adverse impacts, proposals should set out the reasons for proceeding.	Volume 2, Chapter 6 Project Description details the requirement for a Cable Installation Plan (CIP) and Cable Burial Risk Assessment (CBRA) which will be developed upon award of consent and in advance of construction. The CIP and CBRA will provide information on the installation plan for subsea cables. The CBRA, will provide a risk assessment and evaluation for cable protection, unburied or shallow buried cables. The CIP will detail pertinent mitigation measures to be used during cable installation and will be applied throughout the construction phase. The CIP and CBRA will be submitted to the consenting authority in advance of construction phase. The developed plans will include consideration of under keel clearance and appropriate cable protection applied based upon the outcomes and will include consideration of requirements for monitoring of the protection.	Volume 2, Chapter 6 Project Description
Safety at Sea Policy 3	All proposals for temporary or permanent fixed infrastructure in the maritime area must ensure navigational marking in accordance with appropriate international standards and ensure inclusion in relevant charts where applicable	A Lighting and Marking Plan has been prepared for the proposed development in consultation with the Commissioners of Irish Lights. This plan has been included in Volume 7 of the EIAR. It has been prepared in accordance with the International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA) G1162 (IALA, 2021a). The proposed development complies with Safety at Sea Policy 3.	Volume 7, Appendix 7.5 Lighting and Marking Plan
Safety at Sea Policy 4	Establishing, changing or disestablishing Aids to Navigation (AtoN) must be sanctioned, in advance of works, by the Commissioners of Irish Lights.	Lighting and marking of the array will comply with the requirements of the Commissioners for Irish Lights and with International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA) G1162. 6.4.81. Statutory Sanctions from the Commissioner of Irish Lights [under Section 653(2) of the Merchant Shipping Acts 1894 to 2015] will be obtained to establish Aids to Navigation and licences to operate AIS [under the Wireless Telegraphy (Radiodetermination, Air Traffic and Maritime Services) Regulations, 2009] will be obtained from the Commission for Communications Regulation as appropriate.	Volume 7, Appendix 7.5 Lighting and Marking Plan
Safety at Sea Policy 5	Proposals must identify their potential impact, if any, on Maritime Emergency Response (Search and Rescue (SAR), Maritime Casualty and Pollution Response) operations. Where a proposal may have a significant impact on these	<p>Impacts associated with Maritime Emergency Response have been addressed in Volume 3 Chapter 10 Shipping and Navigation, of the Environmental Impact Assessment Report.</p> <p>During the iterative design process, all constraints were considered with regard to optimisation of space whilst attempting to minimise impacts to other marine area users and other marine infrastructure. In addition, the layouts of the offshore wind farm array have been designed to allow Search and Rescue (SAR) lanes in at least one line of orientation. The EIAR outlines the project design features and</p>	<p>Volume 3 Chapter 10 Shipping and Navigation</p> <p>Volume 7, Appendix 7.5 Lighting and Marking Plan</p>

Policy	Policy Wording	Response	Related EIAR Chapter
	operations it must demonstrate how it will, in order of preference: a) avoid, b) minimise, c) mitigate adverse impacts, or d) if it is not possible to mitigate significant adverse impacts, proposals should set out the reasons for proceeding, supported by parties responsible for maritime SAR	<p>avoidance and preventative measures set out to avoid contribution to adverse impacts on other marine activities, including impacts to Maritime Emergency Response operations. Those measures aimed at avoiding and minimising impacts include;</p> <ul style="list-style-type: none"> Observe SAR lanes between discrete rows of wind farm structures of a minimum of 500 m width on a consistent line of orientation. Navigational safety measures including: <ul style="list-style-type: none"> Compliance with COLREGs Marine coordination; Charting; Temporary lighting and marking; Operational lighting and marking; Use of guard vessels; Advisory safe passing distances; Emergency Response Cooperation Planning. Appropriate health and safety including IMO conventions and Health and Safety Authority (HSA) requirements, and suitable vessel certification in line with MSO requirements Applicant will implement the following, in line with the Sea Pollution Act 1991 and MARPOL convention where relevant : Marine Pollution Contingency Plan to cover accidental spills, potential contaminant release and include key emergency contact details (e.g., the Irish Coast Guard (IRCG) and will comply with the National Maritime Oil/ HNS Spill Contingency Plan (IRCG, 2020) Measures include storage of all chemicals in secure designated areas with impermeable bunding (up to 110% of the volume); and double skinning of pipes and tanks containing hazardous materials to avoid contamination. Project design was completed in compliance with the standard MGN 654. Includes the requirement to consult with MSO and Irish Lights in the event that water depths are reduced by more than 5% as a result of cable protection or other infrastructure, to ensure that navigational risk is minimised. Marking and lighting offshore infrastructure in accordance with relevant industry guidance and as advised by relevant stakeholders including in accordance with IALA G-1162 (IALA, 2021) and Irish lights requirements. In particular, the use of marine lighting to mark selected peripheral structures. All structures associated with Dublin Array will be adequately marked on nautical and electronic charts. Minimum WTG blade clearance of 28m above MHWS (exceeds minimum requirement of 22m). Provision for reporting and recovery of dropped objects where they pose a potential hazard to other marine users. Installation of cables to an optimum cable burial depth - offshore cables will, where possible, be buried in the seabed to the optimal performance burial depth for the specific ground conditions. Where optimum burial depth cannot be achieved secondary protection measure will be deployed e.g. concrete mattress, rock berm, grout bags or an equivalent in key areas. Agreement of Emergency Response Plans with relevant parties (IRCG) in the form of an Emergency Response Cooperation Plan in IRCG template. Promulgation of Information via Notice to Mariners and other appropriate media including Fisheries Liaison Officer (FLO). Includes circulation relevant Leisure Almanac. Commitment to undertake vessel traffic validation by AIS during the construction phase as required under MGN 654 to ensure the NRA for the project is accurate for all phases and that predictions made in the NRA with regards to traffic patterns are accurate. <p>The assessment of potential impacts on Maritime Emergency Response operations concludes that the residual impacts are Tolerable with Mitigation and ALARP, therefore no significant adverse residual effects on emergency response capabilities as a result of the proposed development.</p>	
Sport and Recreation			
Sport and Recreation Policy 1	Proposals that promote sustainable development of water-based sports and marine recreation, while enhancing community health, wellbeing and quality of life, should be supported, provided that due consideration is given to environmental carrying capacities and tourism pressures.	<p>The proposed development is for an offshore wind farm and associated infrastructure. Its purpose is not for the promotion of sustainable water-based sports and marine recreation and therefore this policy objective does not apply. The design of the proposed Operations and Maintenance (O&M) base has been completed following detailed consultation with Dún Laoghaire-Rathdown County Council to ensure that the proposed construction and operational phase activities are conducted in a manner which does not affect current or future water-based sports and marine recreation within the harbour or its environs.</p> <p>The proposed O&M base is located within a part of the harbour which has restricted public access for operational control, safety and security reasons.</p> <p>In accordance with the terms and conditions of the Offshore Renewable Electricity Support Scheme (ORESS1), Dublin Array must provide a community benefit fund. The community benefit fund will enhance social benefits of local communities in the locality of the proposed development, with access to funding made available during the operational phase, and for a minimal period of 20 years from the commercial operation date.</p>	Volume 3, Chapter 17 Socio-economic, Tourism, Recreation and Land Use

Policy	Policy Wording	Response	Related EIAR Chapter
		<p>The Applicant is required to ensure that all applications for funding under the Community Benefit Fund are assessed in a fair, reasonable, non-discriminatory and transparent manner; and that all funding from the Community Benefit Fund is used for the sustainable environmental, economic, social and cultural well being of the local community. Due and careful consideration will be given to funding opportunities for all stakeholders in the local community including, but not limited to, local fishers, seafood culture, tourism, the wider blue economy, and maritime heritage communities.</p>	
Sport and Recreation Policy 2	<p>In relation to potential impact on recreation and tourism:</p> <ul style="list-style-type: none"> • The extent to which the proposal is likely to adversely impact sports clubs and other recreational users, including the extent to which proposals may interfere with facilities or other physical infrastructure. • The extent to which any proposal interferes with access to and along the shore, to the water, use of the resource for recreation or tourism purposes and existing navigational routes or navigational safety. • The extent to which the proposal is likely to adversely impact on the natural environment. 	<p>The EIAR prepared for the proposed development assesses the potential for the proposed development to impact a number of socio-economic topics, including marine recreational activities and tourism (see Volume 3, Chapter 17 Socio-economics, Tourism, Recreation and Land Use of the EIAR).</p> <p>This chapter identifies sports clubs and other recreational users within the marine and coastal recreation baseline. The assessment therein concludes that the significance of effect from changes in enjoyment of marine and coastal recreational and visitor assets arising from construction, operation or decommissioning of the offshore infrastructure is not significant in EIA terms. As such, existing watersports clubs and other recreational activities at the Dún Laoghaire harbour and marina or at the landfall location will not be impacted. Furthermore, the assessment of impacts on enjoyment of marine and coastal recreational and visitor assets, including divers, sailing and cruising, and non-commercial fishers, arising from all stages of the development concludes no significant effect on these receptors. It is the intention of the Applicant to implement an advisory 500 m safety zone around each of the wind turbines, section of cable and offshore substation platform whilst construction activities are ongoing. Advisory safety zones of 50 m will be implemented for incomplete structures where construction activity may be temporarily paused (and therefore the 500 m safety zone has lapsed). Guard vessels may be in operation to ensure other users do not enter safety zones. An Advisory Safety Zone of 50 m will also be implemented around any offshore O&M activities; however, these are expected to be intermittent and temporary during the operational phase. Whilst impacts on recreation and tourism are deemed not significant in EIA terms, a number Project Design Features and Avoidance and Preventative Measures have been implemented as part of the iterative design process reduce potential impacts to levels that are acceptable to local stakeholders. Those measures include:</p> <ul style="list-style-type: none"> ▪ Regular promulgation of information regarding activities associated with the proposed development will ensure that all local operators are aware of any relevant activities associated with the proposed development. The information will take the form of marine notices, navigational aids and marine charting updates. ▪ The Applicant will engage with the relevant clubs and associations in order to minimise the potential for disturbance, with advanced warning of vessel transits during the construction phase. ▪ It is the intention of the Applicant to implement an advisory 500 m safety zone around each of the wind turbines, section of cable and offshore substation platform whilst construction activities are ongoing. Advisory safety zones of 50 m will be implemented for incomplete structures where construction activity may be temporarily paused (and therefore the 500 m safety zone has lapsed). Guard vessels may be in operation to ensure other users do not enter safety zones. An Advisory Safety Zone of 50 m will also be implemented around any offshore O&M activities. It is noted that current Irish legislation does not allow for statutory safety zones, and as such the use of advisory safe passing distances as opposed to “prohibiting” vessel access is proposed as an Avoidance and Preventative Measures. One or more guard vessels will be present and maintain a position close to construction vessels. Guard vessels will monitor tracks of passing vessels and any potential interaction with construction vessels. ▪ All structures associated with the proposed development will be charted on relevant nautical and electronic charts and shared with relevant parties/bodies. ▪ A Project Environment Management Plan (PEMP) (EIAR Volume 7, Appendix 7.1) and Construction Environmental Management Plan (CEMP) (EIAR Volume 7, Appendix 7.8) accompany the planning application, with finalised documents developed post-consent and implemented to cover the construction and operation and maintenance phases of the proposed development and will include details of a vessel management plan, to determine vessel routing to and from construction sites and ports, to include a code of conduct for vessel operators. ▪ Prior to the decommissioning of the proposed development, consultation with the relevant authorities (including the Marine Survey Office) and any other relevant bodies will be carried out to determine appropriate safety buffers to be maintained around decommissioning vessels. ▪ All structures associated with the proposed development will be charted on relevant nautical and electronic charts. <p>It is not anticipated that there will be any residual significant adverse effects on tourism and recreation.</p> <p>The proposed development is consistent with Sport and Recreation Policy 2.</p>	<p>Volume 3, Chapter 17 Socio-economic, Tourism, Recreation and Land Use</p> <p>Volume 3, Chapter 11 Marine Infrastructure and Other Users</p> <p>Volume 7, Appendix 7.1 PEMP (Project Environmental Management Plan)</p> <p>Volume 7, Appendix 7.8 CEMP (Construction Environmental Management Plan)</p>
Sport and Recreation Policy 3	Opportunities to promote inclusive development of water-based sports and marine recreation should be	<p>The proposed development does not involve the development of water-based sports and recreation facilities, and therefore Sports and Recreation Policy 3 does not apply. However, through the use of avoidance, preventative and additional mitigation measures, the</p>	Volume 3, Chapter 17 Socio-economic, Tourism, Recreation and Land Use

Policy	Policy Wording	Response	Related EIAR Chapter
	supported, where appropriate and at the applicable scale, with a focus on facilities for people with disabilities.	proposed development aims to ensure no harmful or adverse impacts upon existing water-based sports and marine recreation facilities.	
Sport and Recreation Policy 4	Proposals that improve access to marine and coastal resources for tourism activities, and sport and recreation should be supported, where appropriate, at the applicable scale and aligned with existing development plans.	<p>The proposed development does not aim to improve access to marine and coastal resources for tourism activities, and sport and recreation. The proposed development is for an offshore wind farm and associated infrastructure. Its purpose is not for the promotion of sustainable water-based sports and marine recreation and therefore this policy objective does not apply. The design of the proposed Operations and Maintenance (O&M) base has been completed following detailed consultation with Dún Laoghaire-Rathdown County Council to ensure that the proposed construction and operational phase activities are conducted in a manner which does not affect current or future water-based sports and marine recreation within the harbour or its environs.</p> <p>The proposed O&M base is located within a part of the harbour which has restricted public access for operational control, safety and security reasons.</p>	Volume 3, Chapter 17 Socio-economic, Tourism, Recreation and Land Use
Sport and Recreation Policy 5	Proposals should seek to enhance water safety through provision of appropriate International Organization for Standardization (ISO) and European Committee for Standardization (CEN) compliant safety signage. In general the safety of persons should be a key consideration for planners and due consideration should be given to best practice guidance for marine and coastal recreation areas endorsed by the Visitor Safety in the Countryside Group.	Safety in design, construction and operation are key factors for the Applicant in the development and operation of the proposed offshore wind farm. A Project Supervisor Design Process and Project Supervisor Construction Stage are statutory appointments which will be employed on the proposed development in accordance with the Safety, Health and Welfare at Work (Construction) Regulations, 2013.	Volume 3, Chapter 17 Socio-economic, Tourism, Recreation and Land Use
Telecommunications			
Telecommunications Policy 1	Proposals that guarantee existing and future international telecommunications connectivity which is critically important to support the future needs of society, Government, the provision of Public Services and enterprise in Ireland, should be supported.	This policy is not applicable to the proposed development which is for an offshore wind farm. Telecommunications cabling is required for the purpose of data transfer between the wind farm array/OSP and onshore transition joint bays and onshore substation and is also required for cable condition monitoring. The telecommunications cabling required for the proposed development is for project specific use only and does not provide international connectivity.	
Telecommunications Policy 2	Preference should be given to proposals where evidence is provided of an integrated approach to development and activity, such as the bundling of cables (electricity and communications) where suitable, as well as pipelines for multiple activities, to minimise impacts on the marine environment, infrastructures and other users. Compatibility should be achieved, in order of preference, through: a) avoiding, or b) minimising, or c) mitigating adverse impacts, or d) If it is not possible to mitigate significant adverse impacts, proposals should set out the reasons for proceeding.	The export cables and fibre optic cables for the proposed development will be combined into a single cable bundle. There are no third-party cables which will be bundled with those of the proposed development. There are no pipelines associated with the proposed development.	

Policy	Policy Wording	Response	Related EIAR Chapter
Telecommunications Policy 3	Preference should be given to proposals that protect submarine cables whilst achieving successful seabed user coexistence, such as the bundling of cables (electricity and communications) as well as pipelines for multiple activities where suitable. Proposals should specify if separate access to cables for the purposes of repair and maintenance is required. With regard to decommissioning redundant submarine cables, a risk-based approach should be applied with consideration given to cables being left in situ where this would minimise significant impacts on the physical, natural, societal, historic, and economic value of the area.	The proposed development does not involve the delivery of third party telecommunications infrastructure, nor does it involve the crossing of third party telecommunications infrastructure. This policy is not applicable to the proposed development.	
Telecommunications Policy 4	Proposals that ensure and enhance connectivity of Ireland's rural and island communities to high quality telecommunications networks should be supported.	The proposed development relates to the delivery of an offshore wind farm project and will not provide telecommunications networks to rural or island communities. This policy is not applicable to the proposed development.	
Tourism			
Tourism Policy 1	Where appropriate, proposals enabling, promoting or facilitating sustainable tourism and recreation activities, particularly where this creates diversification or additional utilisation of related facilities beyond typical usage patterns, should be supported.	The proposed development does not aim to enable, promote or facilitate sustainable tourism and recreation activities. Volume 3, Chapter 17 Socio-economic, Tourism, Recreation and Land Use assesses the impacts of the construction and O&M phases of the development on tourism.	Volume 3, Chapter 17 Socio-economic, Tourism, Recreation and Land Use
Tourism Policy 2	Proposals must identify possible impacts on tourism. Where a potential significant impact upon tourism is identified it should be demonstrated how the potential negative consequences to tourism in communities will be minimised. This must include assessment of how the benefits of proposals are not outweighed by potential negative impacts.	<p>The EIAR prepared for the proposed development assesses the potential the proposed development to impact tourism. Volume 3, Chapter 17 Socio-economic, Tourism, Recreation and Land Use assesses the impacts of the development on tourism. The EIAR includes a comprehensive assessment of how the benefits of the proposal are not outweighed by potential negative impacts. Based on the assessment it is anticipated that impacts on tourism and recreation receptors during the operational phase will be relatively limited and therefore no significant effects are predicted during the operational phase. However, during the construction and decommissioning phases there is greater potential for negative impacts on onshore socio-economic, tourism and recreation receptors. However, all impacts were deemed not significant.</p> <p>Notwithstanding, a range of project design features and avoidance and preventative measures have been implemented as part of the iterative design process reduce potential impacts.</p> <p>Measures to avoid and minimise impacts on tourism include:</p> <p>Regular promulgation of information regarding activities associated with the proposed development will ensure that all local operators are aware of any relevant activities associated with the proposed development. The information will take the form of marine notices, navigational aids and marine charting updates.</p> <p>The Applicant and their contracted parties will engage with the relevant clubs and associations in order to minimise the potential for disturbance, with advanced warning of vessel transits during the construction phase.</p> <p>It is the intention of the Applicant to implement an advisory 500 m safety zone around each of the wind turbines, section of cable and offshore substation platform whilst construction activities are ongoing. Advisory safety zones of 50 m will be implemented for incomplete structures where construction activity may be temporarily paused (and therefore the 500 m safety zone has lapsed). Guard vessels may be in operation to ensure other users do not enter safety zones. An Advisory Safety Zone of 50 m will also be implemented around any offshore O&M activities. It is noted that current Irish legislation does not allow for statutory safety zones, and</p>	<p>Volume 3, Chapter 17 Socio-economic, Tourism, Recreation and Land Use</p> <p>Volume 7, Appendix 7.1 PEMP (Project Environment Management Plan)</p> <p>Volume 7, Appendix 7.8 CEMP (Construction Environmental Management Plan)</p>

Policy	Policy Wording	Response	Related EIAR Chapter
		<p>as such the use of advisory safe passing distances as opposed to “prohibiting” vessel access is proposed as an Avoidance and Preventative Measures. One or more guard vessels will be present and maintain a position close to construction vessels. Guard vessels will monitor tracks of passing vessels and any potential interaction with construction vessels.</p> <p>All structures associated with the proposed development will be charted on relevant nautical and electronic charts and shared with relevant parties/bodies.</p> <p>A Project Environment Management Plan (PEMP) (EIAR Volume 7, Appendix 7.1) and Construction Environmental Management Plan (CEMP)(EIAR Volume 7, Appendix 7.8) have been submitted with the planning application and include details of a vessel management plan, to determine vessel routing to and from construction sites and ports, to include a code of conduct for vessel operators.</p> <p>Prior to the decommissioning of the proposed development, consultation with the relevant authorities (including the Marine Survey Office) and any other relevant bodies will be carried out to determine appropriate safety buffers to be maintained around decommissioning vessels.</p> <p>All structures associated with the proposed development will be charted on relevant nautical and electronic charts.</p> <p>With regard to tourism specifically, the assessment identifies that for the vast majority of visitors, the addition of an offshore wind farm to the coast is not likely to have any impact on where they visit in the study area, whether they visit the study area or how much they spend in the study area.</p> <p>It is not anticipated that there will be any residual significant adverse effects on tourism or recreation resulting from the proposal.</p> <p>The proposed development is consistent with Tourism Policy 2.</p>	
Tourism Policy 3	Proposals for tourism development should seek to optimise facilities and use of space by taking a cross-sectoral development approach that provides for multiple activities, whilst minimising the extent to which the proposal is likely to adversely impact on the natural environment.	The proposed development does not involve tourism development, and therefore Tourism Policy 3 is not applicable.	Volume 3, Chapter 17 Socio-economic, Tourism, Recreation and Land Use
Wastewater Treatment and Disposal			
Wastewater Treatment and Disposal Policy 1	Proposals by Irish Water related to the treatment and disposal of wastewater that: <ul style="list-style-type: none"> i. service the social and economic development of the country under the National Planning Framework; ii. resolve environmental issues at priority areas identified by the EPA; iii. contribute to the realisation of the objectives of: Ireland’s River Basin Management Plan 2018 – 2021 The Water Services Policy Statement 2018 – 2025 Marine Strategy Framework Directive 2012 - 2020 should be supported, provided they fully meet the environmental safeguards contained within relevant authorisation processes.	This policy is not applicable to the proposed development, it is not a wastewater treatment disposal project by/on behalf of Uisce Eireann (Irish Water).	

Policy	Policy Wording	Response	Related EIAR Chapter
Wastewater Treatment and Disposal Policy 2	<p>Proposals that have the potential to significantly adversely affect existing and planned wastewater management and treatment infrastructure where a consent or authorisation or lease has been granted or formally applied for by Irish Water should not be authorised unless:</p> <p>compatibility with the existing, authorised, proposed or otherwise identified in consultations with Irish Water activity, can be satisfactorily demonstrated;</p> <p>the proposal is clearly of strategic or national importance.</p> <p>Where possible, proposals that may affect Irish Water activities or plans should engage with Irish Water at the earliest available opportunity. Compatibility should be achieved, in order of preference, through:</p> <p>a) avoiding adverse impacts on those activities; and / or</p> <p>b) minimising impacts where they cannot be avoided; and / or</p> <p>c) mitigating impacts where they cannot be minimised.</p>	<p>The proposed export cables will make landfall in close proximity to Shanganagh-Bray Wastewater Treatment Plant (WWTP). The routing of the export cables has had due regard to location of the existing long sea outfall and stormwater outfall assets related to the WWTP, and thus have been avoided. There will be no impact on any existing Uisce Éireann wastewater assets at the landfall site.</p> <p>The onshore cable route will encounter water services infrastructure along its route; however, locations of any existing utility assets have been obtained to ensure appropriate management during the construction phase and the avoidance of damage to existing utility infrastructure, including wastewater pipes.</p> <p>The onshore substation and O&M base will connect to the local wastewater drainage infrastructure, however, there will be no adverse impacts from proposed connections.</p> <p>The proposed development will not result in any significant adverse impacts to existing or planned Uisce Éireann wastewater treatment or disposal assets. The proposed development is therefore in accordance with Wastewater Treatment and Disposal Policy 2.</p>	Volume 7, Appendix 7.1 PEMP (Project Environmental Management Plan)

