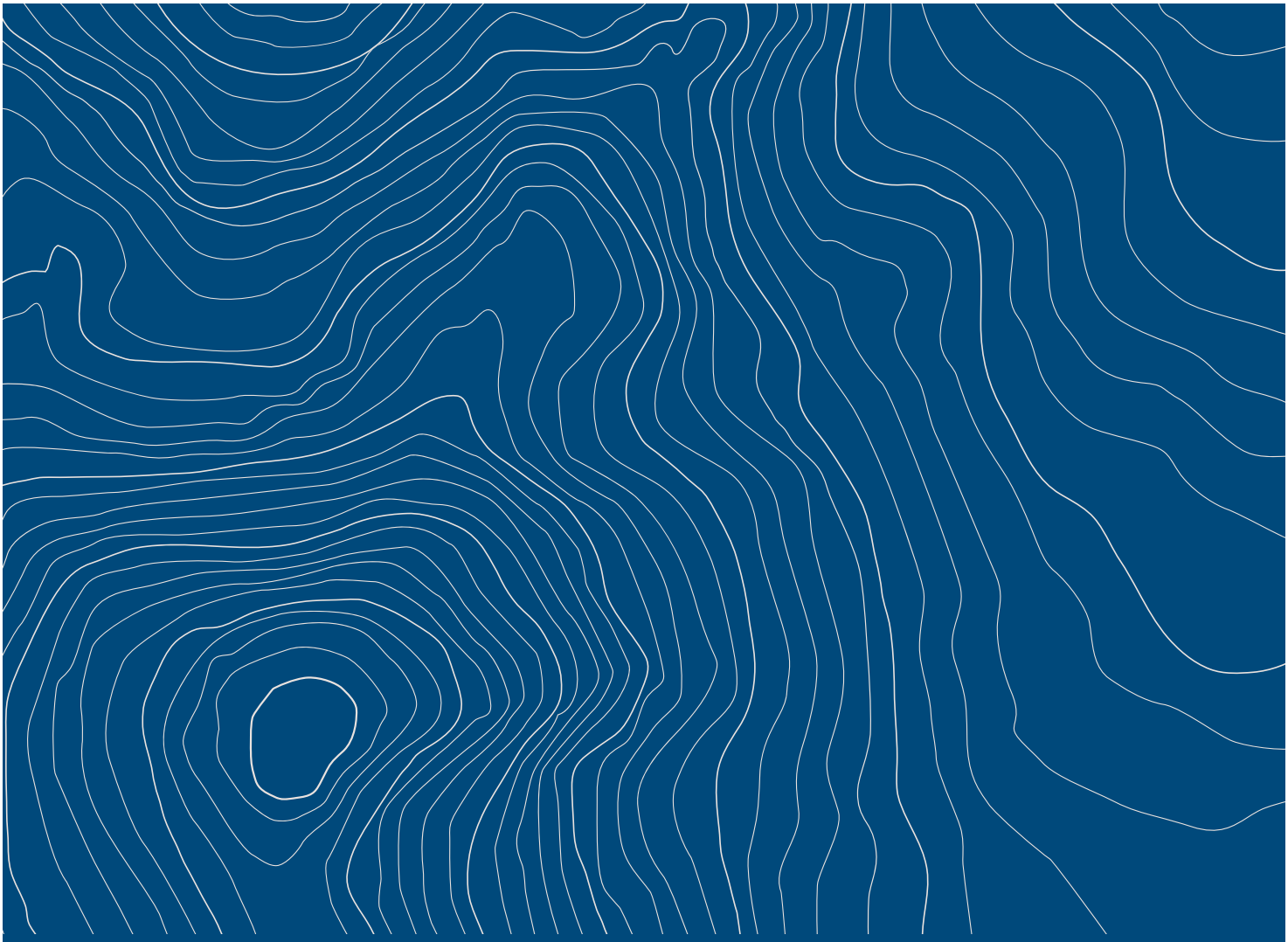

DublinArray
Generation for generations

EIAR Volume 2: Offshore Infrastructure Assessment Chapters
Chapter 17: Socio-Economics, Tourism, Recreation and Land Use

Kish Offshore Wind Ltd.

RWE SLR GoBe APEM Group

www.dublinarray-marineplanning.ie

Dublin Array Offshore Wind Farm

Environmental Impact Assessment Report

Volume 3, Chapter 17: Socio-Economics, Tourism, Recreation and Land Use

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Glossary

Term	Definition
An Bord Pleanála	Competent authority as defined by the Planning Acts to determine the application for development consent for Dublin Array and carry out the EIA and AA of the proposed development.
Applicant	Kish Offshore Wind Limited. Kish Offshore Wind Limited is making the application on behalf of and/or with the consent of the joint holders of the MACs for the maritime area to which the proposed development relates: Kish Offshore Wind Limited, Bray Offshore Wind Limited and DLRCC.
Array area	That part of the maritime area specified by MAC Reference 2022-MAC-003 and 004 within which it is proposed to locate the wind turbine generators (WTGs) and Offshore Substation Platform (OSP).
Crew transfer vessel (CTV)	A vessel used to transport crew members to and from offshore wind farms or other offshore installations.
Cumulative Effects Assessment (CEA)	The assessment of potential cumulative effects that may arise when effects arising from Dublin Array act cumulatively with impacts from other projects considered in the assessment.
Economic impact assessment	A study to evaluate the economic effects of a project, including job creation, gross value added (GVA), and other economic benefits.
Economic multiplier	A factor used to estimate the indirect and induced economic impacts of a project, representing the additional economic activity generated by direct spending.
Environmental Impact Assessment (EIA)	Assessment of the likely significant effects of a proposed project on the environment. The EIA will be carried out by An Bord Pleanála in this instance.
First-tier supply chain	First tier supply chain refers to suppliers who provide goods or services directly to the company or project. These suppliers have a direct contractual relationship with the company and are essential in delivering the primary components, materials, or services needed for the project or production.
Full-time equivalent	A unit that indicates the workload of an employed person in a way that makes workloads comparable across various contexts, often used to measure employment impacts.
Gross value added (GVA)	A measure of the value of goods and services produced in an area, industry, or sector of an economy.
Indirect jobs	Employment opportunities created in the supply chain and supporting industries as a result of a project.
Induced jobs	Employment opportunities created by the spending of incomes earned directly or indirectly from a project.
Marine and coastal recreation	Activities such as sailing, diving, fishing, and beach use that take place in marine and coastal areas.
Offshore infrastructure	Wind turbine generators, offshore substation platform, inter array cables, and offshore export cables.
Offshore substation platform (OSP)	Offshore substation, which is necessary to connect the WTGs with the Offshore Export Cable.
Onshore substation	Part of the OES, the substation is required to facilitate the connection to the existing national electricity transmission system.

Term	Definition
Onshore Electrical System (OES)	Collective term for all onshore infrastructure from the landfall/TJB to the grid connection point which is likely to be necessary to connect the project to the national grid.
Phase 1 Projects	These are the offshore wind farm projects awarded a MAC in 2022 and include Dublin Array, North Irish Sea Array (NISA), Oriel Offshore Wind Farm, Codling Wind Park (CWP), Arklow Phase 2 and Sceirde Rocks. With the exception of Sceirde Rocks these Projects may also be referred to as the East Coast Phase 1 Projects.
Receptor group	A group of individuals or entities that may be affected by a project, such as local communities, businesses, or environmental features.
Socio-economic baseline	The initial socio-economic conditions of a study area, including demographics, employment, and economic activity.
Supply chain	The network of businesses and activities involved in producing and delivering goods and services.
Temporary Construction Compound (TCC)	A temporary site established to support construction activities, including storage of materials and equipment.
Transition Joint Bay (TJB)	The proposed infrastructure at the Landfall location where the offshore and onshore cables connect.
Zone of Theoretical Visibility (ZTV)	A map showing areas from which a project (e.g. wind turbines) may be visible, based on topography and other factors.

Acronyms

Term	Definition
ADO	Alternative Design Option
BIM	Bord Iascaigh Mhara
CAPEX	Capital Expenditures
CEA	Cumulative Effects Assessment
CEMP	Construction Environmental Management Plan
CSO	Central Statistics Office
CTMP	Construction Traffic Management Plan
CTV	Crew Transfer Vessel
DART	Dublin Area Rapid Transit
DBSC	Dublin Bay Sailing Club
DCCAE	Department of Communications, Climate Action and Environment
DLRCC	Dún Laoghaire-Rathdown County Council
DECC	Department of Energy and Climate Change
DEVEX	Development Expenditures
ECC	Export cable corridor
EIA	Environmental Impact Assessment
EIAR	Environmental Impact Assessment Report
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
EU	European Union
FLO	Fisheries Liaison Officer
FMMS	Fisheries Management and Mitigation Strategy
FTE	Full-time equivalent
GDP	Gross Domestic Product
GIS	Geographical Information System
GVA	Gross value added
GW	Gigawatts
HDD	Horizontal Directional Drilling
HSE	Health Service Executive
IAIA	International Association for Impact Assessment

Term	Definition
IFI	Inland Fisheries Ireland
IRCG	Irish Coast Guard
ISORA	Irish Sea Offshore Racing Association
ITIC	Irish Tourism Industry Confederation
Km	Kilometres
LAT	Lowest Astronomical Tide
M1F2	High International Migration
M3F2	Low International Migration
MAC	Maritime Area Consent
MDO	Maximum Design Option
MHWS	Mean high water springs
MORI	Market & Opinion Research International
MW	Megawatts
NACE	Nomenclature Statistics on the European Activities of the European Community
NIS	Natura Impact Statements
NISA	North Irish Sea Array
NMPF	National Marine Planning Framework
NNR	National Nature Reserve
NPS	National Policy Statement
NPWS	National Parks and Wildlife Service
OES	Onshore Electrical System
OPEX	Operational Expenditures
OSP	Offshore Substation Platform
OSS	Onshore Substation
OWF	Offshore wind farm
O&M	Operation & maintenance
PEMP	Project Environmental Management Plan
QA	Quality Assurance
RMS	Royal Mail Ship
RWE	Rot-Weiss Essen
SAC	Special Areas of Conservation
SDZ	Strategic Development Zone

Term	Definition
SEA	Strategic Environmental Assessment
SIA	Social Impact Assessment
SLR	SLR Consulting Ltd
SLVIA	Seascape Landscape Visual Impact Assessment
SOLAS	Safety of Life at Sea
SPA	Special Protection Areas
TJB	Transition joint bay
UK	United Kingdom
UNESCO	United Nations Educational, Scientific and Cultural Organisation
US	United States
WTG	Wind turbine generator
ZTV	Zone of theoretical visibility

17 Socio-Economics, Tourism, Recreation and Land Use

17.1 Introduction

17.1.1 This chapter of the Environmental Impact Assessment Report (EIAR) presents the results of the Applicant's Environmental Impact Assessment (EIA) for the potential impacts of the construction, operation and decommissioning phases of the Dublin Array Offshore Wind Farm (OWF) (hereafter referred to as Dublin Array) on socio-economics, tourism, recreation and land use. This assessment includes the offshore infrastructure, operations and maintenance (O&M) base, landfall infrastructure and the onshore electrical system (OES).

17.1.2 This chapter has been prepared by Hatch, a consultancy with experience of undertaking a range of socio-economics, tourism and recreation EIAs across UK OWFs. In addition, supporting preparation of the recreation baseline has been informed by an assessment of the offshore and onshore study areas completed by SLR. SLR has experience of preparing numerous planning applications and EIAR productions for renewable energy, including OWFs.

17.1.3 This EIAR chapter should be read in conjunction with the following documents:

- Volume 2, Chapter 5: Consideration of Alternatives (hereafter referred to as the Consideration of Alternatives Chapter);
- Volume 2, Chapter 6: Project Description (hereafter referred to as the Project Description Chapter);
- Volume 3, Chapter 2: Marine Water and Sediment Quality (hereafter referred to as the Marine Water Quality Chapter);
- Volume 3, Chapter 9: Commercial Fisheries (hereafter referred to as the Commercial Fisheries Chapter);
- Volume 3, Chapter 10: Shipping and Navigation (hereafter referred to as the Shipping and Navigation Chapter);
- Volume 3, Chapter 11: Marine Infrastructure and Other Users Water (hereafter referred to as the Other Users Chapter);
- Volume 3, Chapter 15: Seascape, Landscape and Visual Assessment (hereafter referred to as the SLVIA Chapter);
- Volume 5, Chapter 5: Noise and Vibration (hereafter referred to as the Noise and Vibration Chapter);
- Volume 5, Chapter 6: Traffic and Transport (hereafter referred to as the Traffic and Transport Chapter); and
- Volume 5, Chapter 7: Landscape and Visual Assessment (hereafter referred to as the Landscape and Visual Assessment Chapter).

17.2 Regulatory background

17.2.1 The full list of legislation, policy and guidance relevant to the whole planning application is set out in Volume 2, Chapter 2: Consents, Legislation, Policy and Guidance. The principal legislation, policy and guidance relevant to this chapter is set out in Annex A.

17.2.2 Where specific Irish guidance is not available, given the infancy of offshore wind in Ireland, a number of other guidance documents specific to the consideration of socio-economics, tourism, recreation and land use are available from jurisdictions/countries with established offshore renewable energy sectors where comprehensive guidance has been developed. The methodology used in this assessment is based on the authors and the Applicant's experience in undertaking EIAs of socio-economic, tourism and recreation impact across numerous OWF projects. UK guidance for EIA has supplemented the existing Irish guidance on the basis of both countries close geographical and economic links, as well as recent increases in offshore renewable wind projects fully incorporating socio-economic, tourism, recreation and land use studies in the UK consenting process. It should be noted that, even in the UK, there is limited guidance on assessing the socio-economic, tourism, recreation and land use effects of major infrastructure projects.

17.2.3 The assessment of potential impacts upon socio-economics has been made with reference to the National Marine Planning Framework (NMPF) as well as other useful guidance such as the overarching National Policy Statement (NPS) for Energy (EN-1) (UK Government, Department for Energy Security and Net Zero, 2023). This guidance has informed the assessment approach, including which impacts and receptors were assessed.

17.2.4 The proposed OES is located within the functional area of Dún Laoghaire-Rathdown County Council (DLRCC) facilitating a connection of the existing national electricity transmission grid at Carrickmines 220 kV susbtation. As such the DLRCC Development Plan 2022-2028 (DLRCC, 2022) is a key statutory land-use plan detailing the development policies and objectives of the local planning authority.

17.2.5 The assessment of potential impacts upon socio-economics, tourism, recreation and land use has been made with specific reference to the relevant regulations, guidelines and guidance, which include:

- Guidance on Environmental Impact Statement (EIS) and Natura Impact Statements (NIS) Preparation for Offshore Renewable Energy Projects (Department of Communications, Climate Action and Environment (Department of Communications, Climate Action and Environment (DCCAE)), 2017);
- EIAR Guidelines for the Consideration of Tourism and Tourism Related Projects (Fáilte Ireland, 2023), including:
  - Section 4: Assessing Tourism;
  - Section 6: Consideration of Competency and Qualifications;
  - Section 7: EIAR Requirements;

- Overarching National Policy Statement (NPS) for Energy (EN-1) (UK Government, Department for Energy Security and Net Zero, 2023);
- Dún Laoghaire-Rathdown County Development Plan 2022-2028 (DLRCC, 2022);
- Ireland National Development Plan 2021-2030;
- The National Marine Planning Framework, 2021;
- Dublin City Development Plan 2022-2028;
- Dún Laoghaire 2040: A Spatial and Economic Study for Dún Laoghaire Town;
- Economic Plan for Dún Laoghaire Harbour;
- People, Place and Policy: Growing Tourism to 2025;
- Dublin Regional Tourism Development Strategy 2023-2027;
- Embracing Ireland's Outdoors: National Outdoor Recreation Strategy 2023-2027; and
- Appropriate Assessment of Plans and Projects in Ireland: Guidance for Planning Authorities.

17.2.6 The key NMPF policy points which are relevant to the assessment of socio-economic tourism and recreation effects are set out in Table 1.

Table 1 Key NMPF policy points relevant to the assessment of socio-economics, tourism, recreation and land use

NMPF Policy	Policy Description	Section addressed
Co-existence Policy 1	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: a) minimise significant adverse impacts, b) mitigate significant adverse impacts, or c) if it is not possible to mitigate significant adverse impacts, proposals should set out the reasons for proceeding.	Effects on socio-economics, tourism, recreational users, and land use are described in sections 17.12, 17.13 and 17.14. This includes the wider economic impacts from disruptions to commercial fishing during construction and operation.
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.	The construction of Dublin Array will create direct employment opportunities. Full Time Equivalent (FTE) jobs will be supported to facilitate the

NMPF Policy	Policy Description	Section addressed
		operation of the proposed development. Further information on the benefits the proposed development will bring to Irish marine industries is provided in sections 17.12, 17.13 and 17.14.
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.	Effects to tourism and recreation are described in sections 17.12, 17.13 and 17.14 and project design features measures are described in section 17.11.
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.	Effects on the co-existence of marine tourism and recreational users are described in sections 17.12, 17.13 and 17.14. The assessment concluded that there are no significant residual effects on the co-existence of the proposed development and marine tourism or recreational users.
Employment Policy 1	Proposals should demonstrate contribution to a net increase in marine related employment in Ireland, particularly where the proposals are: ▪ 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.	The gross direct, indirect and induced impacts are assessed in Annex 0. Many of the direct and indirect jobs created will be in the maritime economy and may be filled by people based locally and therefore the project will contribute to a net increase in marine related employment. The project will also contribute to the diversification of skills in the green economy.
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.	A Community Benefit Fund will be put in place. It is estimated that the funding will be worth up to €6.5 million, depending on the final installed capacity of the project. The decisions on how these funds will be spent will be made by a committee of local representatives who will be appointed by an independent fund administrator.

NMPF Policy	Policy Description	Section addressed
		The Applicant through its parent company (RWE) has over 25 years experience in delivering Community Benefit Funds, tailored to meet the individual needs of the different communities.
Sport and Recreation Policy 2	Proposals should demonstrate the following in relation to potential impact on recreation and tourism: ▪ 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.	The effects on sports clubs and other recreational users, access to coastal resources and any impacts on the natural environment are described in sections 17.12, 17.13 and 17.14.
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.	A detailed assessment on the effects on tourism is provided in sections 17.12, 17.13 and 17.14.

17.3 Consultation

17.3.1 As part of the EIAR for Dublin Array, non-statutory consultation has been undertaken with various statutory and non-statutory bodies. A Scoping report (RWE, 2020) was made publicly available and issued to statutory consultees on 9th October 2020.

17.3.2 Table 2 presents a summary of the consultation for socio-economics, tourism, recreation and land-use received throughout the pre-application process.

Table 2 Summary of consultation relating to socio-economics, tourism, recreation and land use

Date	Consultation and key issues raised	Section where provision is addressed
Scoping responses		
23/10/2020	In their correspondence dated 23rd November 2020, Inland Fisheries Ireland (IFI) suggested that section 6.10 (Socio-economic, Tourism, Recreation and Land-use) section 6.10.8 Direct Offshore Effects and the focus of Offshore Recreation, should not be limited to Dublin Bay but also include recreational angling along the east coast to Greystones. A useful reference for recreational fishing is 'A Guide to Sea Angling on the East Coast'.	Information within a Guide to Sea Angling on the East Coast is considered in section 17.6. The impact on sea angling is considered as part of the assessment of tourism set out in sections 17.11.2 and sections 17.12-17.15.
Informal consultation		
30/06/23	In consultation with the Planning and Environment Manager at Fáilte Ireland, the following points were noted: Literature and evidence of impact: Fáilte Ireland and Hatch (set out in section 17.6) have both conducted independent literature reviews and both reached the conclusion that there is no evidence that OWFs impact tourism negatively. It was also noted that distance from the shore could determine the scale of impact, if any. Community concerns: No consultation responses have raised concerns around the impact that the project will have on tourists' desirability to visit the area. Public perceptions of OWFs: Public perception is overall favourable. EIA: When evaluating the impact of the project on tourism it was highlighted that it's crucial to also consider how the project will affect the visual aspects of the environment. Specifically, the seascape (the view of the sea), the landscape (the natural scenery), and the overall visual impact (how the project changes the appearance of the area) are important factors. These elements can influence tourists' perceptions and experiences, so they need to be carefully assessed as part of the EIA.	Considered as part of the assessment of tourism set out in sections 17.11.2 and sections 17.12-17.15.

Date	Consultation and key issues raised	Section where provision is addressed
	Opportunities: It was highlighted that community benefit funds, which are financial contributions made by the project developers to support local community projects, can have a positive impact on the community. It was also noted that not all OWF projects are obligated to provide these funds.	
18th January 2024	In a second consultation with Planning and Environment Manager at Fáilte Ireland, the following points were noted: From a tourism perspective, the following areas were considered most relevant and important: ▪ Socio-Economic, Tourism, Recreation and Land Use; ▪ Seascape, Landscape and Visual Amenity; ▪ Shipping and Navigation; and ▪ Cultural Heritage. The importance of considering impacts on beautiful scenery and natural attractions was highlighted. Additionally, the EIAR Guidelines for the Consideration of Tourism and Tourism Related Projects were highlighted by Fáilte Ireland. Fáilte Ireland provided the following additional comments: ▪ 'Distance to shore – we are aware of work which has been carried out regarding the need for buffers between coastal areas and OWFs, which vary depending on the size of the turbines and the sensitivity of the coastal receptors. The EIAR should clearly demonstrate how the buffer proposed for this scheme has been calculated, given the sensitivity of the coastal area. ▪ Tourism Strategies – Fáilte Ireland prepared the Regional Tourism Development Strategy 2023-2027 for Dublin and Ireland's Ancient East and associated SEA Environmental Reports which includes under 'Strategic Objective 3' that 'Initial reviews have been undertaken by Fáilte Ireland regarding the development of The Irish Seaway to understand the existing infrastructure. This is a long-term	The Seascape, Landscape and Visual Amenity Impact Assessment is included in Part 1, Volume 3: Chapter 16. The Shipping and Navigation assessment is included in Part 1, Volume 3: Chapter 11. The Cultural Heritage Settings Assessment (Terrestrial Archaeology and Monuments) is included in Part 1, Volume 3: Chapter 15. EIAR Guidelines for the Consideration of Tourism and Tourism Related Projects are considered within section 17.2 and Annex A. The distance to shore buffer for Dublin Array is discussed in the Consideration of Alternatives Chapter and the Project Description Chapter. The buffer was determined based upon as assessment of regulatory guidelines, technical feasibility, environmental impact, and economic considerations. The chosen distance, within 12 nautical miles, balances these factors while minimising impacts on sensitive coastal receptors and marine ecosystems. This ensures the buffer is appropriate for the sensitivity of the coastal area.

Date	Consultation and key issues raised	Section where provision is addressed
	investment project that will require dedicated Government investment to deliver. In the meantime, we will ensure that coastal trails are integrated into the visitor offering and seek to influence a connected network of trails where possible. It is recommended that consideration be given to this proposed seaway and any impacts on the existing network of coastal trails also including the Dublin Coastal Trail.' Fáilte Ireland provided a list of additional studies and guidance that may be useful. Conclusion ▪ 'Fáilte Ireland recognises the importance of developing the State's renewable energy sector and transition to a low carbon energy. It is the policy of Fáilte Ireland to support the sustainable development of electricity generation by sustainable and renewable sources and support its contribution towards a sustainable energy supply at appropriate locations and in accordance with proper planning and sustainable development. We trust that the above will provide additional insights which will ensure that tourism and the potential impacts on tourism are adequately considered in the future steps/phases of the project.'	

17.4 Methodology

Study area

17.4.1 The methodology as to how this EIAR was prepared is presented in Volume 2, Chapter 3: EIA Methodology. In addition to this generic methodology, the methodology specific to this chapter has been used.

17.4.2 The selection of study areas for the socio-economic, tourism, recreation and land-use impact analysis takes account of the spatial scale at which impacts upon different receptors are likely to materialise. An overview of the receptor groups and study areas is presented in Table 3.

Table 3 Summary of receptor groups and study areas

Receptor	Greater Dublin	Coastal counties within Greater Dublin	South East/ South of Ireland	Marine and coastal study area	OES local study area
Economy (jobs and Gross Value Added (GVA))	Y	N	Y	N	N
Tourism (volume and value)	N	Y	N	N	N
Users of marine and coastal tourism and recreation assets	N	N	N	Y	N
Marine and coastal tourism assets	N	N	N	Y	N
Onshore tourism, recreation and social community infrastructure receptors	N	N	N	N	Y

17.4.3 In addition to the study areas above, the assessment of the wider economic impacts from disruptions to commercial fishing has heavily drawn on the findings of the Commercial Fisheries Chapter. The study areas used for the assessment of commercial fishing are therefore relevant to this assessment also and are fully set out in the Commercial Fisheries Chapter (Figure 1 – Commercial fisheries study areas).

17.4.4 A summary of the key statistical areas referred to in the assessment is set out in Table 4.

Table 4 Geographical areas summary

Area	Region	County
Greater Dublin	Dublin (also known as County Dublin)	Dublin City
		Dún Laoghaire–Rathdown
		Fingal
		South Dublin
	Mid East	Meath
		Kildare
		Wicklow
Outside Greater Dublin		Louth

Please note that Louth is located within Mid East but is located outside of Greater Dublin.

Study area and scenarios – modelling economic impacts

17.4.5 In relation to the construction and operation phases, different assembly/marshalling port and co-ordination base scenarios have been defined below to reflect the potential for socio-economic impacts that may occur within the areas where construction and O&M ports are located.

Construction phase:

- **Option 1: Assembly/marshalling port and co-ordination base scenario**: The assembly/marshalling port will be located within Republic of Ireland (but outside of Greater Dublin) and the co-ordination base will be located locally, within Greater Dublin. The most likely assembly/marshalling port option for Republic of Ireland will be use of two Republic of Ireland ports (Cork and Rosslare) in combination within the south of Ireland.
- **Option 2: Co-ordination base scenario**: The co-ordination base will be located locally. This will occur if the assembly/marshalling port is located outside of Republic of Ireland.

17.4.6 It is important to note that the Applicant has not confirmed any of the construction phase port scenarios at this stage.

Operation phase:

- **Local O&M port** – proposed at Dún Laoghaire Harbour.

17.4.8 Economic impacts are assessed for the following local impact areas, which are also set out in Figure :

- **Greater Dublin** – This will be the location of the operations base and most likely location of the co-ordination port, while the assembly/marshalling port is assumed to be located outside of Greater Dublin.
- **Southeast/South of Ireland**[1] – This area is the most likely Republic of Ireland based assembly/marshalling port location.

Other study areas

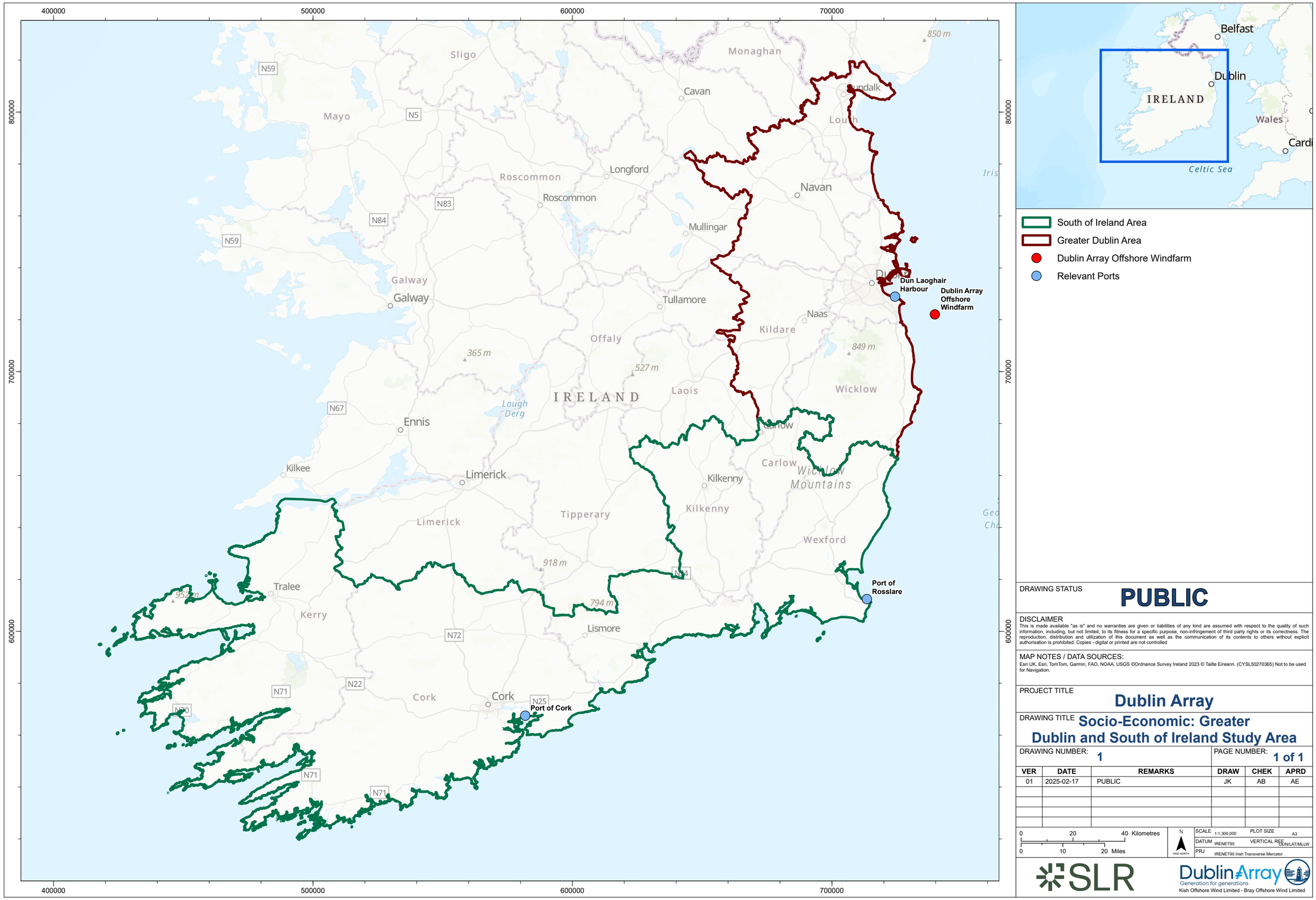
17.4.9 A marine and coastal study area is defined below, where offshore infrastructure could potentially lead to tourism and recreation effects over the construction, operational and decommissioning phases:

- **Marine and coastal study area** – The marine and coastal study area covers the extent of visibility of the offshore infrastructure, this is based on the Zone of Theoretical visibility (ZTV) and therefore captures any tourism and recreation assets that will potentially have a view of the wind farm during the development lifecycle. This area is shown on Figure . It should be noted that the project will not be visible within large areas of the onshore parts of this zone, as the ZTV assumes bare ground and no vegetation or buildings.

OES local study area

17.4.10 The OES for Dublin Array includes the landfall at Shanganagh Cliffs, onshore export cables to a new substation at Ballyogan, a transition joint bay (TJB), and the grid connection at Carrickmines 220 kV substation, along with associated engineering works. The OES local study area encompasses the local area for which potential socio-economic, tourism, recreation and land use effects will occur over construction, operation and decommissioning phases. The impact of the development on onshore socio-economic, tourism, recreation and land use receptors will likely be concentrated in locations in close proximity to the construction/operation and maintenance port and along onshore cable corridor(s) with a zone of influence generally set at 500 m from the OES element of the EIA project boundary. This is selected because it is the area which will likely experience the largest impact as a result of the onshore construction, operation and maintenance and decommissioning activity related to Dublin Array.

1 Note this area corresponds to the administrative regions of the south west and south east of the Republic of Ireland.



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PROJECT TITLE

Dublin Array

DRAWING TITLE

Socio-Economic: Greater Dublin and South of Ireland Study Area

DRAWING NUMBER: 1

PAGE NUMBER: 1 of 1

VER	DATE	REMARKS	DRAW	CHEK	APRD
01	2025-02-17	PUBLIC	JK	AB	AE

0 20 40 Kilometres

0 10 20 Miles

N (GRID NORTH)

SCALE 1:1,300,000 PLOT SIZE A3

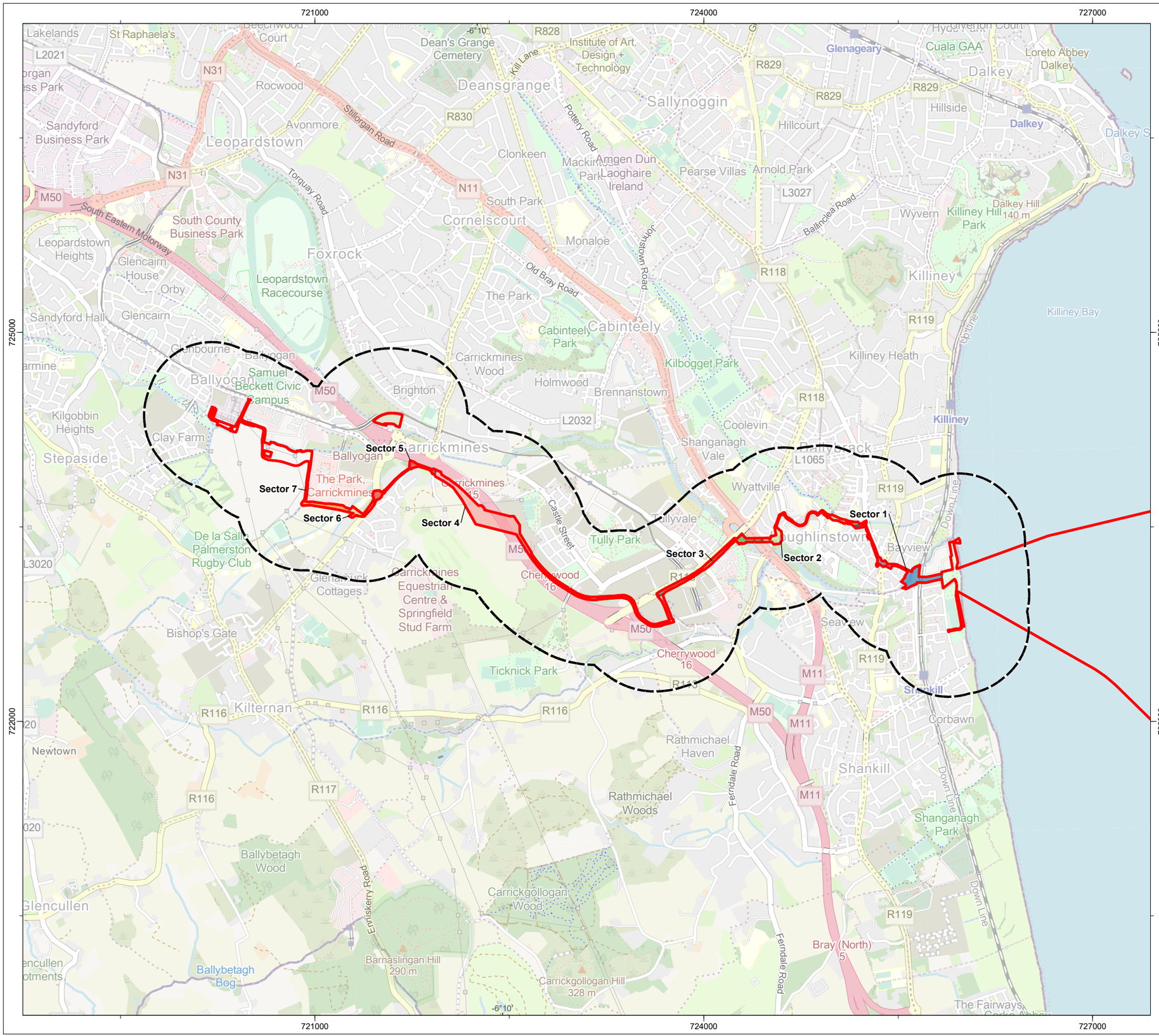
DATUM IRENET95 VERTICAL REF CDN/LAT/MLLW

PRJ IRENET95 Irish Transverse Mercator

SLR

Dublin Array Generation for generations

Kish Offshore Wind Limited - Bray Offshore Wind Limited



Application Site Boundary

Onshore Electrical System (OES) 500 m Study Area

Onshore Electrical System (OES) Sectors

- Sector 1
- Sector 2
- Sector 3
- Sector 4
- Sector 5
- Sector 6
- Sector 7

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PROJECT TITLE

Dublin Array

DRAWING TITLE

Socio-Economic: OES Local Study Area

DRAWING NUMBER: **2**

PAGE NUMBER: **1 of 1**

VER	DATE	REMARKS	DRAW	CHEK	APRD
01	2025-02-17	PUBLIC	JK	SW	AE

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0 0.13 0.25 0.38 0.5 Miles

SCALE 1:30,000 PLOT SIZE A3

DATUM IRENET95 VERTICAL REF DDN/LAT/MLLW

PRJ IRENET95 Irish Transverse Mercator

SLR

Dublin Array Generation for generations

Kish Offshore Wind Limited - Bray Offshore Wind Limited

Baseline data

17.4.11 The study area for the baseline assessment of socio-economics is based on the Greater Dublin area which comprises of the following local areas:

- Dublin City;
- Dún Laoghaire–Rathdown;
- Fingal;
- South Dublin;
- Meath;
- Kildare; and
- Wicklow.

17.4.12 These areas are chosen as they capture the majority of the localised socio-economic benefits that have potential to occur as a result of the Dublin Array.

17.4.13 Where data is available, at the local district level, the assessment also provides a breakdown for the Greater Dublin Local Authority Districts within the Dublin Region (corresponds to Fingal, Dublin City, South Dublin and Dún Laoghaire-Rathdown). Data for the Republic of Ireland is also presented as a wider comparator to provide additional context to the various indicators.

17.4.14 In some instances, data (e.g. Labour Force Survey data) is only available at the national and regional level. The Dublin Region refers to the area compromising of Fingal, Dublin City, South Dublin and Dún Laoghaire-Rathdown and is smaller than the Greater Dublin area. Meath, Kildare and Wicklow are located within the Mid East Region which also includes Louth (Louth sits outside of Greater Dublin).

17.4.15 Where data is only available at regional and national levels both the Dublin Region and Mid East regions are presented.

17.4.16 Baseline data for tourism and recreation receptors is tailored to the study areas presented above.

Table 5 Baseline data sources

Source	Date	Summary	Coverage
Labour Force Quarterly Series	2022	Employment characteristics of persons aged 15 and over, including: Employment Unemployment Persons employed Sectoral Breakdown	Ireland, Region, County
Census Labour Force	2011 and 2022	Employment characteristics of persons aged 15 and over, including: Employment	Ireland, Region, County

Source	Date	Summary	Coverage
		Unemployment	
GVA	2022	Current position in: Total GVA GVA per head	Ireland, Region
Census Population	2022	Current position and long-term trends in: Total population Core working age population Young people People aged 65+	Ireland, Region, County
Population Projections	2022	Anticipated population change for: Total population Core working age population Young people People aged 65+	Ireland, Region
Annual Earnings	2022	Income estimates for workplace-based earnings.	Ireland, Region
Fáilte Ireland	2018-2022	Tourism economy baseline	Ireland, Region
Literature review of tourism perception of offshore wind	Various	Academic articles and other studies	International, Ireland
Sea Fisheries Protection Authority, BIM Ireland's Seafood Development Agency and Council Journal	2015-2022	Fishing economy data including landings statistics data for Irish-registered vessels	Ireland Irish vessels Irish imports and exports
Local policy documents such as the Dún Laoghaire-Rathdown Green Infrastructure Strategy and Dublin Bay Biosphere Partnership	Various	Recreational assets and spaces	OES
Google maps/Open Street Maps	2024	Recreational assets	OES

17.4.17 Baseline data collection has been undertaken to obtain information about the study areas identified above. The current baseline conditions are based on the data sources outlined below, which have been collated and used to inform the assessment.

17.4.18 A desk-based assessment of data was used to collect information about the OES local study area level. The description of the receiving environment for the OES local study area covers the following receptor groups:

- Recreational assets and spaces;
- Tourism assets; and
- Social community infrastructure.

17.4.19 Information collected for each receptor group is described below.

Recreational assets and spaces

17.4.20 Receptors in this category include beaches, parks, playgrounds and play areas, community gardens and allotments, and informal open amenity spaces such as small, wooded areas, pocket parks and/or left-over green spaces within housing and other forms of development, as well as grassed road verges. There are several receptors within this category located either inside the cable corridor or within the OES local study area level earlier in this section.

17.4.21 Receptors were defined by using the typology definitions sets out Annex 14 of the Dún Laoghaire-Rathdown Green Infrastructure Strategy contained in the DLRCC Development Plan 2022–2028.

17.4.22 Data and relevant descriptors were acquired through a review of the relevant County and City Development and Local Area Plans (such as the Dún Laoghaire-Rathdown Green Infrastructure Strategy). A significant proportion of data points and relevant descriptors were acquired from the Green Infrastructure Strategies contained within the respective Development Plans. The data points were then inputted into Geographical Information System (GIS) software to generate mapping this was verified through a review of Google Maps.

Institutional grounds green space

17.4.23 The grounds of institutions, such as schools, universities, colleges, hospitals, nursing homes, and commercial or industrial premises, often feature green spaces that include expanses of grass, scattered trees, hedgerows, and shrubs. These institutional grounds are common in Dún Laoghaire-Rathdown and DLRCC views them as both an opportunity and a challenge for Green Infrastructure. On one hand, they offer potential to provide multiple environmental and social benefits through the enhancement of Green Infrastructure. On the other hand, these areas can also present barriers to accessibility, as sometimes access is limited. Outdoor sports facilities are not included in this category.

Outdoor sports facilities

17.4.24 Outdoor sports facilities include sports pitches, school and other institutional playing fields, golf courses and other outdoor activities. These usually consist of vegetated sports surfaces and boundary shrubbery, trees and hedges. These can be publicly or privately owned and often occur within parks.

Allotment, community garden or urban farm allotments

17.4.25 Allotment, community garden or urban farm allotments are small plots which collectively make up a larger green space. These plots are available for members of the public to rent for the cultivation of fruit, vegetables, and flowers. Community gardens and urban farms are community-managed projects ranging from wildlife gardens, to fruit and vegetable plots on housing estates, community polytunnels, to large city farms.

Green networks

17.4.26 Green networks comprise networks of parks and open spaces; existing and proposed greenways; biodiversity corridors; cycle routes; waterways and river valleys; and coastal areas and the mountains that are features of the County. They can provide for long distance pedestrian and cycle routes and can link the parks and open spaces with other green infrastructure. DLRCC recognises that once they are formally identified, mapped and developed they can become an extremely valuable resource for the region.

Tourism assets

17.4.27 Receptors in this category include tourism related infrastructure, assets, places or activities as listed by Fáilte Ireland, the national tourism development authority.

Community facilities

17.4.28 This group includes community facilities such as special or further education centres, libraries, hospitals or public health clinics, and schools and their adjoining playing pitches and/or sports grounds.

17.4.29 Data for community facilities, hospital and schools was obtained from Open Street Map and requested from the An Post Geodirectory Designated Activity Company[2]. The data points and locations of each building and/or facility were subsequently validated through a review of Google Maps.

Assessment methodology

17.4.30 The assessment of effects uses established methods for assessing the socio-economic, tourism, recreation and land use impacts of offshore windfarms. This draws on the guidance set out in section 17.2. The consideration of economic impacts uses multipliers and levels of sourcing, as is the typical approach for an economic impact assessment on energy infrastructure. An economic impact model, which follows industry best practice approaches, has been developed to quantify the core economic impacts, while wider economic impacts are noted qualitatively (within Annex C).

17.4.31 The assessment of effects on the volume and value of tourism considers the latest evidence on impacts on tourism resulting from development of offshore wind as well as the local context in which the development is proposed.

17.4.32 The assessment considers the tourism and recreation assets in the marine and coastal study area and the potential for users' enjoyment to be affected by Dublin Array.

Temporal scope

17.4.33 The assessment of tourism and recreation for the Dublin Array project encompasses the following phases:

2 An Post is the Irish postal service, and the An Post Geodirectory Designated Activity Company manages and maintains the Geodirectory, a comprehensive address database of buildings and locations across Ireland.

- Construction Phase – The construction phase is anticipated to last up to 2 years;
- Operations Phase – The operations phase is expected to span approximately 35 years; and
- Decommissioning phase – The decommissioning phase, which includes disassembling, demolishing, and removing wind turbine components and related infrastructure, as well as conducting restoration activities, may take up to 2 years.

Estimating the core economic impacts

17.4.34 For effects on the local economy there are no formalised technical guidance and/or criteria when assessing the scale (and therefore significance) of socio-economic effects. The assessment of the likely effects is primarily based on professional judgement and considers the sensitivity of the receptor group in addition to the magnitude of change to the receptor brought about by the proposed development. The assessment draws on best practice approaches to economic modelling and the results of economic modelling provided by Hatch consultants working on behalf of the Applicant.

17.4.35 Hatch conducted an assessment of the potential socio-economic impacts of Dublin Array in 2021. This was updated in 2023 and 2024 to reflect the changes in key parameters presented in the EIAR (presented in Annex C). Impacts on GVA[3] and employment (Impacts 1 and 2) heavily draw on the assessment presented within Annex C.

17.4.36 The assessment of economic impacts for the proposed Dublin Array relies on information regarding the following:

- Costs: How much Dublin Array will cost to construct and operate and how this is split between different cost categories; and
- Sourcing: What proportion of the supply will be sourced from each of the impact areas for the construction and operational phases.

17.4.37 The core economic impacts presented in this assessment are calculated using a tailored economic model. The modelling exercise drew upon the economic multipliers used in the Economic Impact of Onshore Wind in Ireland, prepared for Wind Energy Ireland (KPMG, 2021). Their assessment provides a reasonable evidence base of Irish economic multipliers when compared to economic multipliers used in UK windfarms. The Republic of Ireland Supply and Use Input-Output tables were also used in the economic model.

3 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.

17.4.38 A key aspect of the economic modelling was to identify the expenditure categories for each phase and match them to the appropriate sector categories in the input-output table. For example, expenditure which is heavily reliant on the construction sector will be matched to the construction sector within the model. Each sector within the input output table has different economic multipliers which vary based on the different interdependencies across sectors.

17.4.39 Figure shows the relationship between expenditure, direct, indirect, and induced economic effects. The level of retained expenditure within the impact areas is key to driving the core economic impacts of Dublin Array.

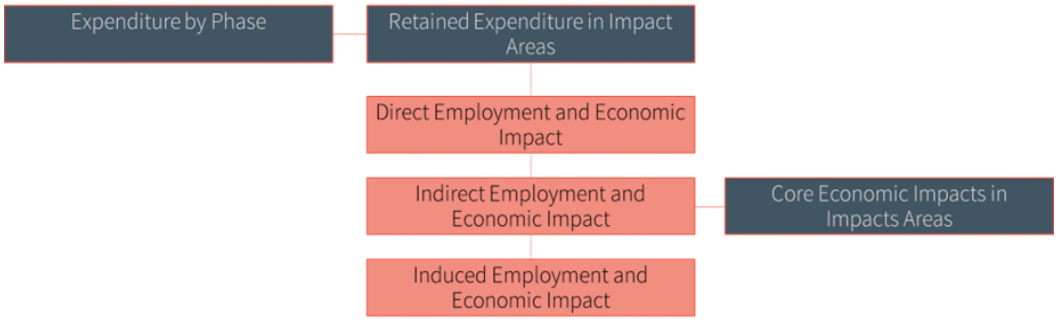


Figure 3 Economic assessment approach

Source: Hatch, 2022

17.4.40 Direct impacts capture the economic activity that is provided directly through the delivery of Dublin Array. This includes direct staff employed and all first-tier supply chain[4] expenditure.

17.4.41 Indirect impacts measure the supply chain impact of the additional output generated by companies in the supply chain supporting the first-tier suppliers. The additional economic activity in these companies is passed down through their supply chains and generates additional, indirect benefits for many other companies across the respective economies.

17.4.42 Induced impacts capture the knock-on benefits that additional employment supported directly and indirectly will have on the Irish economy as salaries, earned by those employed in additional jobs, are spent on goods and services elsewhere in the economy.

17.4.43 To derive the total economic benefits, direct, indirect, and induced employment and economic impacts are aggregated.

Economic impact assessment and lengths of construction, operational and decommissioning phases

17.4.44 For the purposes of the economic assessment the assessment of construction effects on employment and GVA include both development and construction activities. The time periods of the assessment align with those set out above in paragraph 17.4.33.

4 First tier supply chain refers to suppliers who provide goods or services directly to the company or project. These suppliers have a direct contractual relationship with the company and are essential in delivering the primary components, materials, or services needed for the project or production.

17.4.45 It should be noted that some of the development activity and therefore average annual impact on jobs and GVA during the construction phase may in reality occur before the construction period, but this is only a small proportion of the benefit and therefore makes no difference to the significance of effect assessment.

Assessing tourism economy impacts

17.4.46 For this assessment, tourists are defined as people taking a trip to a destination outside of their usual environment whose stays are time-limited, including both overnight stays and day trips. Visitors are defined as anyone who comes to spend time temporarily at a particular place and encompass both tourists and recreational users who are residents of the local area and use local assets for their leisure (United Nations, 2008). Thus, the tourism economy is considered a subset of the visitor economy. Visiting behaviours of both tourists and residents have associated economic impacts, although it can be reasonably assumed that tourists contribute to a larger portion of the visitor economy than residents do. Any expenditure by residents in the local economy linked to their visits is likely to have occurred in the local area anyway and as a result displacement effects are likely to be large.

17.4.47 The assessment of the impact on the tourism economy utilised desk-based research about the impact of primarily OWFs, but also considers evidence from onshore wind farms, on tourist visitor numbers and the tourism economy. The assessment then applied the evidence to the proposed Dublin Array, visitor characteristics and the nature of the study area. The steps undertaken to assess Dublin Array's impact on the tourism economy, drawing on the professional judgement of the assessors, include:

- Consideration of the findings of published research (presented in section 17.6) assessing the impact of OWFs on visitors and visitor economies in Ireland and a limited number of studies abroad. The authors are not aware of any empirical evidence for existing offshore windfarms in Ireland (i.e. Arklow Bank) which considers visitors' attitudes before and after the OWF was built;
- Examination of the characteristics of the tourism sector within the defined study area, including visitor centres, types of visiting activity, and types of visitors (subject to the availability of specific and up to date information);
- Stakeholder discussions; and
- Assessment of the scale, location and nature of the proposed infrastructure, and proposed construction methods in relation to the main centres of tourism and types of visitors. This includes drawing on other aspects included in the EIA, such as noise and vibration, traffic and transport, air quality, landscape and visual impact and seascape, landscape and visual assessment.

17.4.48 The effect on the tourism economy is assessed qualitatively. Potential effects on tourism have been guided by the method depicted in Figure 3.4 of the EPA Guidelines (2022) Chart Showing Typical Classifications of the Significance of Effect. Other relevant topics assessed in the EIAR (Shipping and Navigation, Seascape, Landscape and Visual Impact, Noise and Vibration, Traffic and Transport, Landscape and Visual) are considered to help inform the assessment on tourism and recreation impacts.

17.4.49 Dublin Array has potential to (positively or negatively) impact local tourism economies through the development lifecycle of the wind farm. The primary indicators for assessing these impacts are assessing any changes to the volume of tourists, the value they generate for the local area and assessing any localised impact on tourism areas or facilities.

17.4.50 During the construction phase, there is the potential impact on tourism as the wind farm is constructed (for example by movement of construction vessels in the offshore study area and visual impacts of offshore infrastructure). This may potentially impact the perception of the area to tourists.

17.4.51 Throughout the operational phase, the offshore infrastructure has the potential to effect the local tourism economy by impacting visual amenity, which may shape tourists' perception of the area, potentially deterring visits.

17.4.52 The assessment against the receptors is conducted through:

- Consideration of the findings of published research assessing the impact of offshore windfarms on visitors and visitor economies;
- Examination of the characteristics of the tourism sector in the defined study areas, including the main visitor centres, types of visiting activity, and types of visitors; and
- Assessment of the scale, location and nature of the proposed offshore infrastructure and proposed construction methods in relation to the tourism economy in the impact areas.

17.4.53 The assessment takes the position that the tourism economy is driven by tourism demand, which is defined as how much visitors spend whilst in an area. Tourism supply meets this demand through the provision of goods and services by businesses including hotels, restaurants, and museums. It is considered that a change in demand leads to a change in supply (i.e. fewer tourists would spend less money and businesses would experience a fall in revenue). However, this has not been financially quantified in this assessment due to the speculative assumptions needed at the current stage. Therefore, the assessment focusses on factors that have the potential to reduce the number of tourists visiting or returning to an area.

17.4.54 Recreational assets such as cycle networks and coastal paths may be enjoyed by both tourists and local users. However, it is assumed that local users will not contribute the same degree of expenditure to the visitor economy as tourists i.e. locals are unlikely to stay in hotels but may visit a sailing club. Therefore, effects to recreational assets are considered with regards to how such effects will change the users' experience of the asset e.g. high noise levels would reduce the enjoyment of a natural area and thus its amenity value.

17.4.55 The baseline has been developed by examining data at the county, region, and local level. Firstly, a broad overview of the tourism sector in Dublin and the Greater Dublin area is presented to understand the main character and trends in tourism and recreation, particularly in areas within Dublin City and Dún Laoghaire–Rathdown.

17.4.56 Patterns used to assess the baseline include tourism trends such as the expenditure and number of trips recorded, secondary benefits from tourism in the form of induced spending, the local accommodation stock, and the nature of tourism and recreational activities.

Assessing impacts on the enjoyment of recreational assets

17.4.57 There are no specific statutory guidelines that inform the assessment of how OWF development effects upon users of recreation. The approach taken uses expert judgement informed by evidence from the offshore wind industry and is based on best practice for social impact assessments (SIAs).

17.4.58 Recreation assets include but are not limited to:

- Natural assets such as national parks or coastal areas;
- Coastal paths;
- Cultural, religious, or historic assets such theatres, churches or castles; and
- Sports or recreational assets such as amusement parks, cycling networks or sports venues.

17.4.59 Real or perceived effects on these assets may lead to a reduction in tourist numbers, length of stay, and expenditure. Therefore, the assessment considers the users of these assets as the main tourism receptors.

17.4.60 The same recreational assets enjoyed by tourists can also be enjoyed by the local population, but this is more associated with quality of life of the local population rather than economic benefit although these concepts are interrelated. In other words, tourism assets are considered on the basis of their ability to attract or supply tourists, while recreational assets are examined from the perspective of all visitors and the amenity provided by such assets.

17.4.61 Recreation effects are considered on the proximity of recreational assets to the footprint of the project and the nature and duration of impact. Spatial datasets are used to understand where the project may disturb spaces that have been assigned for recreation such as coastal paths.

17.4.62 The assessment identifies recreational receptors within the relevant study area that have the potential to be affected (i.e. an impact pathway connects the source to the receptor) and characterises the degree of sensitivity and value. A systematic approach is subsequently implemented to describe the various impact pathways and the overall magnitude of impact on the receptors. Finally, the significance of the effect is evaluated by integrating information on receptor sensitivity with the magnitude of impact.

17.4.63 The sensitivity and value of receptors, the magnitude of impact, and the significance of effect are described with a standard semantic scale and are assessed using expert judgment. These expert judgements are guided by the conceptual understanding of the baseline conditions.

Assessing impacts on tourism, recreation and social and community infrastructure assets in the OES

17.4.64 The effect on tourism and recreation, and social and community facilities from the development of the OES is assessed qualitatively, guided by the EPA Guidelines (2022).

17.5 Assessment criteria

17.5.1 The approach considers the sensitivity of each receptor based on the baseline position and performance against benchmark areas, in addition to the likely magnitude of impact.

17.5.2 It should be noted that the impacts on tourism and recreation are based on qualitative assessments, which predict how local residents and tourists might perceive and change their activities in response to the proposed development, particularly during construction. This can be difficult to predict as different individuals will have different perceptions. Professional judgment has been exercised when defining the sensitivity and magnitude of impact for a given receptor.

Sensitivity of receptor criteria

17.5.3 The sensitivity of a receptor criteria is presented in Table 6 and is dependent upon its:

- Adaptability: The ability of the receptor to change in order to suit different conditions and avoid adverse impacts that will otherwise arise;
- Tolerance: The extent to which the receptor can withstand or absorb an impact;
- Recoverability/reversibility: A measure of a receptor's ability to return to a state at, or close to, that which existed before the impact caused a change; and
- Value: A measure of the receptor's importance, rarity and worth.

Table 6 Receptor sensitivity/importance

Receptor sensitivity	Definition
High	Receptor is defined as being of high sensitivity where it is identified as policy priority as a result of economic potential and/or need. There is evidence of considerable socio-economic challenges and/or opportunities for the receptor within the study area. **Adaptability:** The receptor cannot avoid or adapt to an impact. **Tolerance:** The environment has no capacity to accommodate the proposed form of change. **Recoverability/reversibility:** The effect on the receptor is anticipated to be permanent or long-lasting (over 15 years). **Value:** The receptor is designated a high level of local/national/international importance in policy terms and/or of high socio-economic value.
Medium	Receptor is defined as being of medium sensitivity where it is not identified as a policy priority (as a result of economic potential and/or need). There is, however, evidence of socio-economic challenges and/or opportunities for the receptor within the study area. Receptors may have some alternatives with available capacity within its catchment area **Adaptability:** The receptor has a normal/average level of adaptability to avoid or adapt to an impact. **Tolerance:** The environment has an average to low capacity to accommodate the proposed form of change. **Recoverability/reversibility:** The effect on the receptor is anticipated to be medium term (1 – 15 years) then return to baseline conditions. **Value:** The receptor is designated in policy terms but is not of high importance and/or medium socio-economic value.
Low	Receptor is defined as being of low sensitivity where it is not identified as a policy priority (as a result of economic potential and/or need). There is evidence that the receptor is resilient within the study area. **Adaptability:** The receptor has a high level of adaptability to avoid or adapt to an impact. **Tolerance:** The environment has a high capacity to accommodate the proposed form of change. **Recoverability/reversibility:** The effect on the receptor is anticipated to be short-term (1 month to 1 year) then return to baseline conditions. **Value:** The receptor may be designated in policy terms and has limited socio-economic value.
Negligible	Receptor will be of negligible sensitivity where it is not identified as a policy priority (as a result of economic potential and/or need). **Adaptability:** The receptor has a very high adaptability to avoid or adapt to an impact. **Tolerance:** The environment has a very high capacity to accommodate the proposed form of change.

Receptor sensitivity	Definition
	Recoverability/reversibility: The effect on the receptor is anticipated to be short-term (less than 1 month) then return to baseline conditions. **Value:** The receptor is not designated in policy terms and has very limited socio-economic value.

Magnitude of impact criteria

17.5.4 The magnitude of impact (Table 7) is dependent upon its:

- Magnitude and extent – The area, the number of sites and/or the proportion of a population affected over which an impact occurs, the nature, transboundary nature, intensity/complexity and probability;
- Duration – The expected onset and time for which the impact occurs;
- Frequency – How often the impact occurs;
- Probability – How likely the impact is to occur; and
- Consequences – The degree of change relative to the baseline level, whether it is reversable and the change in character.

Table 7 Magnitude of the impact

Magnitude	Definition
High	Proposals will cause a large change to the scale and/or quality of the receptor when compared with existing baseline conditions. **Magnitude and extent:** High level of change on existing environment across the near-field and far-field areas beyond the study area within a geographic area e.g. Greater Dublin and the rest of Ireland. **Duration:** The impact is anticipated to begin in 2025 and to be permanent. **Frequency:** The impact will occur constantly throughout the relevant project phase. **Probability:** The impact can reasonably be expected of occurring. **Consequences:** Permanent changes across the near and far-field environment to key characteristics or features of the particular environmental aspect's character or distinctiveness. When considering economics impacts (jobs and GVA) a high level of change can be considered to be a change over 1% on the existing baseline.
Medium	Proposals will cause a moderate change to the scale and/or quality of receptor when compared with the existing baseline conditions. **Magnitude and extent:** Medium level of change on the existing environment across the study area. **Duration:** The impact is anticipated to be long-term (over 15 years).

Magnitude	Definition
	Frequency: The impact will occur with high but not constant ffrequency throughout the relevant project phase. **Probability:** The impact has a medium probability of occurring. **Consequences:** Temporary changes across the near and far-field environment to key characteristics or features of the particular environmental aspect's character or distinctiveness. Permanent changes across the near and far-field environment to characteristics or features of the study area that have lower importance. When considering economics impacts (jobs and GVA) a medium level of change can be considered to be a change of 0.5%-1% on the existing baseline.
Low	Proposals will cause slight change to the quality and/or integrity of the receptor when compared with existing conditions. **Magnitude and extent:** Low level of change on existing environment across the study area. **Duration:** The impact is anticipated to be short-medium term (1 to 15 years). **Frequency:** The impact will occur with a low frequency throughout the relevant project phase. **Probability:** The impact has a low probability of occurring. **Consequences:** Temporary changes across the near and far-field environment to characteristics or features of the study area that have lower importance. When considering economics impacts (jobs and GVA) a low level of change can be considered to be a change of -0.1%-0.5% on the existing baseline.
Negligible	Proposals will cause no discernible change to the baseline conditions. **Magnitude and extent:** Negligible level of change on existing environment across the study area. **Duration:** The impact is anticipated to be short-term (less than 1 year). **Frequency:** The impact will occur throughout the relevant project phase. **Probability:** The impact has a very low probability of occurring. **Consequences:** Very low level of temporary changes across the near and far-field environment to characteristics or features of the study area that have lower importance. When considering economics impacts (jobs and GVA) a negligible level of change can be considered to be a change below 0.1% on the existing baseline.

Defining the significance of effect

17.5.5 Assessment of the significance of potential effects is described in Table 8 and can be reviewed in detail in the EPA guidelines.

Table 8 Significance of potential effects

Description of Impact - Magnitude			Existing Environment - Sensitivity			
			High	**Medium**	**Low**	**Negligible**
	Adverse impact	**High**	Profound or Very Significant (significant)	Significant	Moderate*	Imperceptible
		Medium	Significant	Moderate*	Slight	Imperceptible
		Low	Moderate*	Slight	Slight	Imperceptible
	Neutral impact	**Negligible**	Not significant	Not significant	Not significant	Imperceptible
	Positive impact	**Low**	Moderate*	Slight	Slight	Imperceptible
		Medium	Significant	Moderate*	Slight	Imperceptible
		High	Profound or Very Significant (significant)	Significant	Moderate*	Imperceptible

*Moderate levels of effect have the potential, subject to the assessor's professional judgement, to be considered as significant or not significant in EIA terms, depending on the sensitivity and magnitude of change factors evaluated. These evaluations are explained as part of the assessment, where they occur.

17.6 Receiving environment

Socio-economic baseline

Population and labour force

17.6.1 In 2022 the labour force in Dublin consisted of 813,400 people aged 15 and over, while the Mid East region had 406,000 people in the same age group. There were noticeable declines in the labour force during Q2 of 2020 and Q1 of 2021 (see Figure 4), likely due to the impacts of the Covid-19 pandemic and the subsequent restrictions. Between 2015 and 2022 the Republic of Ireland saw an overall increase of 17% in the labour force, Dublin region had a 19% increase, and the Mid East increased by 20% (Central Statistics Office (CSO), 2023a).

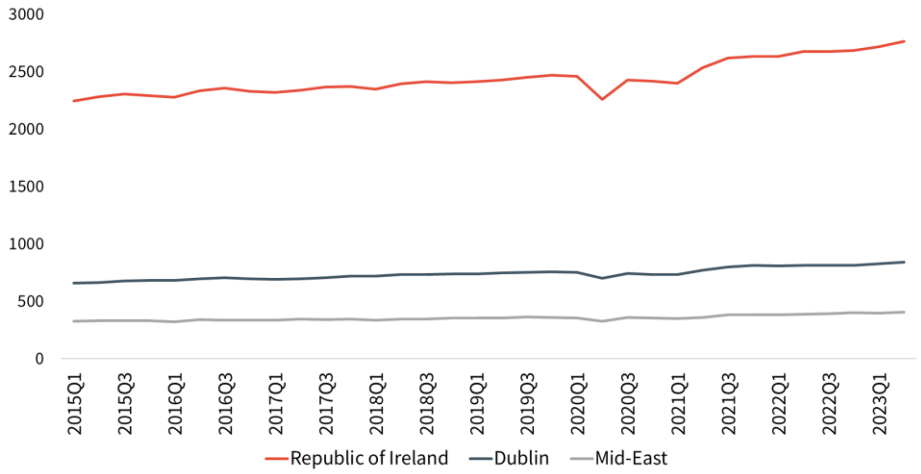


Figure 4 Labour force (headcount)2015-2023

17.6.1 The Republic of Ireland's estimated population was approximately 5.28 million as of April 2023, following its rise above 5 million in 2022 for the first time since the 1800s. Dublin[5] represented a significant proportion of this population with approximately 1.5 million residents, accounting for 28.4% of the total population (CSO, 2023b).

17.6.2 Age-based population data at the county level available from the 2022 Census shows that in 2022, the Greater Dublin area had a total population of around 2.1 million people, of whom 68% were of a core working age i.e. aged 15-64. Nationally, the proportion of core working age residents is slightly lower at 65%. Within County Dublin – which comprises Dublin City and the surrounding administrative areas of Dún Laoghaire–Rathdown, Fingal, and South Dublin – the highest proportion of working aged population is seen in Dublin City, where 73% fall within this age group (CSO, 2022b).

Table 9 Population and working aged population

Area	Population census (000s), 2022	Population census (000s),2016	Working aged population census in 2022 (aged 15-64) as a % of total population (%)	Working aged population in 2016 census (aged 15-64) as a % of total population (%)
Republic of Ireland	5,150	4762	65%	65%
Greater Dublin	2,080	1,907	67%	67%
County Dublin	1,458	1,347	68%	68%
▪ Dublin City	592	555	72%	72%
▪ Dún Laoghaire-Rathdown	234	218	65%	66%

5 The figure of approximately 1.5 million residents refers to the population of County Dublin, which includes Dublin City and its surrounding areas: Fingal, South Dublin, and Dún Laoghaire-Rathdown.

Area	Population census (000s), 2022	Population census (000s),2016	Working aged population census in 2022 (aged 15-64) as a % of total population (%)	Working aged population in 2016 census (aged 15-64) as a % of total population (%)
▪ Fingal	331	296	67%	66%
▪ South Dublin	301	279	66%	66%

Source: CSO, 2023b

17.6.3 According to the CSO (2023), the Greater Dublin area had an estimated labour force of approximately 1.04 million people in 2022, up from approximately 898,000 in 2011, marking a 16% increase. Within this region, both Dublin City and Fingal experienced significant growth in their labour forces, each increasing by 17% between 2011 and 2022.

Table 10 Population aged 15 years and over in the labour force 2011 to 2022

Area	2011 (000s)	2022 (000s)	% change
Republic of Ireland	2184	2444	12%
Greater Dublin	898	1040	16%
Dublin	642	742	16%
▪ Dublin City	275	322	17%
▪ Dún Laoghaire-Rathdown	96	109	14%
▪ Fingal	140	164	17%
▪ South Dublin	131	146	12%

Source: CSO, 2023c and CSO, 2012. Labour Force Participation Rate

17.6.4 Within the Dublin region the labour force participation rate varied from a low of 71.7% in -Dún Laoghaire-Rathdown to a high of 73.3% in Fingal (CSO, 2023c).

Table 11 Labour force participation rate

Area	Labour Participation Rate (% of population aged 15-64), 2011	Labour Participation Rate (% of population aged 15-64), 2022
Republic of Ireland	69.2	71.9
Greater Dublin	70.0	72.6
Dublin	70.1	72.9
▪ Dublin City	70.2	73.6
▪ Dún Laoghaire-Rathdown	68.6	71.7
▪ Fingal	71.2	73.3
▪ South Dublin	70.5	73.2

Source: CSO, 2023c and CSO, 2012.

Employment

17.6.5 Employment data is available at the regional and national levels (CSO, 2023c). Nationally, approximately 2.6 million people were employed in the second quarter of 2023. County Dublin (Fingal, Dublin City, South Dublin and Dún Laoghaire-Rathdown) accounted for 798,200 of those jobs and the Mid East (Louth, Meath, Kildare and Wicklow) accounted for 392,900 jobs. The two regions combined therefore account for the provision of over 1 million jobs. Over the past ten years, data indicates strong growth across all areas, with Dublin's employment increasing by 38% from 2013 to 2023, surpassing the national growth rate of 34% and closely aligning with Mid East's growth of 39%.

Table 12 Number of people in employment, 2013 to 2023

Area	Employment 2013 Q4 (000s)	Employment 2023 Q2 (000s)	Employment % change 2013-2023
Republic of Ireland	1,970	2,643	34%
Dublin	579	798	38%
Mid East	283	393	39%
Dublin and Mid East	861	1,191	38%

Source: CSO, 2023c.Labour Force

GVA

17.6.6 The Dublin region contributed approximately €149 billion GVA to the Republic of Ireland economy in 2020 (CSO, 2022a). GVA data is only presented at the national and regional level. The Mid East Region contributed €28.8 billion in GVA.

Table 13 GVA and GVA per head, 2020

Area	Total GVA (€ Billions)	GVA per head (€)
Republic of Ireland	353.2	71,000
Dublin	149.0	105,800
Mid East	28.8	40,000
▪ Dublin and Mid East	177.7	72,900

Source: CSO, 2022a.Labour Force Sectoral Profile

17.6.7 Table 14 provides an overview of the employment distribution across various sectors in the Republic of Ireland, Dublin, and the Mid East Region for the second quarter of 2023 (for persons aged 15-89 years). The data is presented in thousands and includes the percentage of the total labour force for each sector. The sectors are categorised according to the Nomenclature Statistics on the European Activities of the European Community (NACE). The table highlights the employment figures and their respective shares in the labour force, offering insights into the economic landscape and sectoral employment trends within these regions.

17.6.8 Within the region of Dublin, there were 41,400 people employed in construction related work[6]. There were also 28,00 people employed in the construction sector in Mid East. In comparison to the Republic of Ireland where 6% of the labour force was employed in the construction industry, the Dublin Region had a lower proportion with 5% of its labour working in the construction industry. The Mid East had a larger proportion of its labour employed in the construction industry, with 7% (CSO, 2023a).

17.6.9 The Dublin region had 57,900 people employed in industry sectors[7], accounting for 7% of the labour force. In comparison, the Republic of Ireland and the Mid East region had a higher proportion of their labour force employed in industry sectors, both at 12%. The Mid East region had 28,900 people employed in industry sectors. Notably, Dublin's economy that was more focused on the service sector[8], with 87% of employment in this area (CSO, 2023a).

Table 14 Employment sector analysis for Ireland, Dublin and Mid East (thousands)

Sector	Republic of Ireland		Dublin		Mid East	
	2023 Q2	% of total labour force	2023 Q2	% of total labour force	2023 Q2	% of total labour force
Agriculture, forestry and fishing (A)	99.2	4%	0	0%	21%	3%
Industry* (B to E)	**317.2**	**12%**	**57.9**	**7%**	**15.4**	**12%**
Construction (F)	**170.2**	**6%**	**41.4**	**5%**	**28.9**	**7%**
Wholesale and retail trade, repair of motor vehicles (G)	337.3	13%	86.8	11%	54.8	14%
Transportation and storage (H)	114.8	4%	42.5	5%	20	5%
Accommodation and food service (I)	176.5	7%	49	6%	25.1	6%
Information and communication (J)	173.4	7%	87.1	11%	21.7	6%
Financial, insurance and real estate (K,L)	136.5	5%	71.2	9%	21.5	5%
Professional, scientific and technical (M)	175.6	7%	68	9%	24.2	6%

6 'Construction-related work' refers to employment in the construction sector, which encompasses activities such as building, civil engineering, and specialised construction services. This includes roles like construction workers, project managers, architects, and surveyors whose work is directly tied to the physical construction process or construction-related activities.
7 Industry sectors refer to categories of businesses and economic activities that produce goods or provide essential services. These typically include manufacturing, construction, mining and quarrying, and utilities.
8 Service sector is the segment of the economy that provides intangible goods and services rather than physical products. This includes industries such as retail, hospitality, finance, healthcare, education, and professional services.

Sector	Republic of Ireland		Dublin		Mid East	
	2023 Q2	% of total labour force	2023 Q2	% of total labour force	2023 Q2	% of total labour force
Administrative and support services (N)	110.8	4%	42.2	5%	20.3	5%
Public administration (O)	141.5	5%	44.4	6%	26.7	7%
Education (P)	217.5	8%	65.7	8%	18.2	8%
Human health and social work (Q)	349.7	13%	101.9	13%	45	11%
Other activities (R to U)	118.2	4%	36.8	5%	16.9	4%
Total (economic sectors)	**2643**	**100%**	**798.2**	**100%**	**392.9**	**100%**

Source: CSO, 2023a.

Unemployment

17.6.10 Unemployment data from the Labour Force Survey (CSO, 2024) shows that in Q2 of 2021, approximately 56,700 people in Dublin were unemployed, with an unemployment rate of 7.3%. This was higher than the pre-pandemic rate of 4.5% in Q4 of 2019 and 4.7% in Q1 of 2020, as reflected in Table 15. The unemployment rate for the Mid East region at that time was 6.7%

17.6.11 By Q3 of 2022, the unemployment rate in Dublin had decreased to 5.1%, indicating recovery from the higher rates observed in earlier years. More recent data for Q2 of 2023 shows that the unemployment rate in Dublin was 5% and as at Q3 of 2024, reduced to 4.9%, reflecting a continued recovery, though still not back to pre-pandemic levels (CSO, 2024).

17.6.12 In the Mid East and nationally, the unemployment rates in Q3 of 2024 were 3.9% and 4.5% respectively, which are lower than the pre-pandemic levels recorded in Q4 2019 and Q1 2020.

Table 15 Unemployment trends by quarter (2019-2024)

Quarter	Unemployment					
	Republic of Ireland		Dublin		Mid East	
	No. (000s)	Rate (%) (Persons aged 15-74)	No. (000s)	Rate (%) (Persons aged 15-74)	No. (000s)	Rate (%) (Persons aged 15-74)
Q4 2019	111.6	4.5	33.7	4.5	15.8	4.3
Q1 2020	115.7	4.7	34.8	4.7	15.6	4.3
Q2 2020	122.6	5.4	38.7	5.5	15.5	4.7
Q3 2020	181.4	7.4	64.0	8.7	25.6	7.0

Quarter	Unemployment					
	Republic of Ireland		Dublin		Mid East	
	No. (000s)	Rate (%) (Persons aged 15-74)	No. (000s)	Rate (%) (Persons aged 15-74)	No. (000s)	Rate (%) (Persons aged 15-74)
Q4 2020	143.4	5.9	47.4	6.5	18.8	5.2
Q1 2021	172.8	7.1	57.1	7.8	23.5	6.5
Q2 2021	186.4	7.3	56.7	7.3	24.4	6.7
Q3 2021	151	5.7	49.5	6.2	24.0	6.1
Q4 2021	130.1	4.9	44.0	5.4	20.8	5.3
Q1 2022	128.1	4.8	47.2	5.8	18.8	4.8
Q2 2022	121.1	4.5	37.9	4.6	19.5	4.9
Q3 2022	120.5	4.4	41.5	5.1	16.5	4.1
Q4 2022	112.6	4.1	38.4	4.7	16.2	4
Q1 2023	111.3	4.0	42.4	5.1	16	4
Q2 2023	122.2	4.4	42.2	5.0	13.6	3.3
Q3 2023	129.9	4.6	42	5.0	16.2	3.9
Q4 2023	117.7	4.2	39.7	4.7	14.9	3.6
Q1 2024	115.2	4.1	39.2	4.6	13.4	3.3
Q2 2024	131.2	4.6	40.8	4.7	14.8	3.6
Q3 2024	129.5	4.5	42.8	4.9	16.5	3.9

Source: CSO, 2023a

Earnings

17.6.13 County Dublin has greater median annual earnings than the Republic of Ireland and the Mid East achieving a total of €46,100 in 2022 compared to €41,800 in the Mid East and €43,100 nationally. Dublin also saw the greatest increase in earnings over the 5 years between 2017 and 2022 (+22%) (CSO, 2023d).

Table 16 Annual earnings

Area	2017 median annual earnings (€)	2022 median annual earnings (€)	% Change (2017-2022)
Republic of Ireland	€34,700	€41,800	21%
Dublin	€37,900	€46,100	22%
Mid East	€35,600	€43,100	21%

Source: CSO, 2023d, (workplace based - part time and full-time employees)

Future population change

17.6.14 The Central Statistics Office (CSO) of Ireland has developed population projections to estimate the potential growth of the country's population from 2016 to 2036. These projections consider a variety of scenarios influenced by factors such as internal migration (movement of people within Ireland) and international migration (movement of people into or out of Ireland). Depending on the scenario, the national population is expected to grow from a baseline of just under 5 million in 2016 to somewhere between 5.33 million and 5.81 million by 2036.

17.6.15 The projections also highlight how population growth may differ by region, particularly in Dublin. In the 'Dublin Outflow' scenario, where more people migrate from Dublin to other parts of Ireland, the city's population is still expected to grow. Under this scenario, Dublin's population could increase by 254,000 (a 19% increase), reaching approximately 1,589,900 by 2036. This projection assumes high levels of international migration (referred to as the M1F2 scenario). Conversely, if international migration is low (M3F2 scenario), Dublin's population growth will be significantly smaller, increasing by just 65,000 (4.9%) to a total of 1,400,900 by 2036.

17.6.16 Another scenario, known as 'Dublin Inflow,' assumes that traditional patterns of migration resume, with more people moving to Dublin from other regions in Ireland. In this case, Dublin would experience the highest population growth. Under the M1F2 scenario (high international migration), Dublin's population could grow by 39.3%, increasing from 1,335,900 in 2026 to 1,860,700 by 2036. In a more moderate projection (M2F2), the population would increase by 31.9% to 1,762,400. Under the low international migration scenario (M3F2), the population would still grow by 25.1%, reaching 1,671,900 by 2036.

Offshore wind sector

17.6.17 Ireland's offshore wind industry is in the early stages of development but holds significant potential to contribute to the country's renewable energy targets and economic growth. In March 2020, the Irish Wind Energy Association (IWEA) and Carbon Trust released a report outlining how Ireland can harness its potential to become a leader in offshore wind, detailing the necessary investments and the projected creation of jobs within the sector (IWEA, 2020). This report highlights opportunities for the development of a domestic supply chain, with a focus on engaging Irish businesses in the delivery of offshore wind projects.

17.6.18 A detailed review of this report is provided in Annex B, which explores its findings and relevance to Dublin Array's offshore wind project. The information from the review has been integral to the assumptions used in the economic modelling process, particularly regarding the extent to which Irish businesses can participate in Dublin Array's supply chain. This analysis underpins the broader economic impact projections for the offshore wind sector and the potential for job creation and regional development.

Commercial fishing economy

17.6.19 The fishing industry in Dublin Bay is reasonably diverse and of significant size. There are around 16,000 people employed in the seafood industry in Ireland (BIM, 2022), with 2,660 of those specifically employed in fishing and aquaculture (CSO, 2023). Donegal, Cork, and Galway are the main hubs for Ireland's Seafood industry.

17.6.20 Howth is home to Dublin's only Fishery Harbour Centre, one of six state-owned harbours in Ireland designated to support the fishing industry and related maritime activities. These centres, located in Howth (Co. Dublin), Dunmore East (Co. Waterford), Castletownbere (Co. Cork), Ros an Mhíl (Co. Galway), An Daingean (Dingle, Co. Kerry), and Killybegs (Co. Donegal), are managed and operated under the Fishery Harbour Centres Acts 1968 (as amended). The centres provide essential infrastructure and services for fishing vessels, seafood processing, and marine-related activities.

17.6.21 Howth Fishery Harbour Centre, Dublin's primary fishing port, accounted for fish landings valued at approximately €12.9 million in 2021 (Council Journal, 2023). This underscores Howth's importance to both the local and national seafood sectors, contributing significantly to economic activity and employment in the area.

17.6.22 In 2022, a new fishing pier was opened at Howth Fishery Harbour Centre to address increasing congestion caused by the shared use of the harbour by fishing vessels, marine tourism operators, and recreational boaters. The expansion aims to improve safety and efficiency by separating fishing operations from leisure and tourism activities, ensuring smoother day-to-day functioning of the harbour (Council Journal, 2023a).

17.6.23 The key fishing ports/harbours located in the vicinity of Dublin Array, which are separate from the six Fishery Harbour Centres above, are (from north to south): Howth, Dún Laoghaire, Greystones, Wicklow, Arklow and Kilmore Quay.

17.6.24 Whelks are among the most economically important catches for Ireland's inshore fisheries, which are typically smaller-scale fishing operations. The whelk fishery plays a key role in local economies, especially for smaller fishing vessels. According to recent data from the Sea Fisheries Protection Authority and the 2023 Business of Seafood report, the value of the whelk catch in this area is significant. Potting for whelks is the principal fishing activity undertaken in the Commercial Fisheries Chapter local study area. Data collected as part of the commercial fisheries baseline assessment indicates that in 2022, landings of Irish vessels fishing in the Irish Sea had the following total first sales values (Sea Fisheries Protection Authority, 2023):

- Howth: Approximately €8.1m;
- Kilmore Quay: Approximately €6.5m;
- Wicklow: Approximately €3.0m;
- Arklow: Approximately €0.8m; and
- Dún Laoghaire: Approximately €0.5m.

17.6.25 More recent data from the 2023 Fish Landings report (Sea Fisheries Protection Authority, 2024) shows the total landing value of Irish vessels landing into the Irish Sea:

- Howth: Approximately €13.4m;
- Kilmore Quay: Approximately €13.1m;
- Wicklow: Approximately €3.4m;
- Arklow: Approximately €0.9m; and
- Dún Laoghaire: Approximately €2.5m.

17.6.26 In 2022, landings of whelk by Irish vessels fishing in the Irish Sea had a total first sales value of €8.3 million (4,483 tonnes), with €4.5 million (2,583 tonnes) of this landed into Howth, Dún Laoghaire, Wicklow, Arklow and Kilmore Quay.

17.6.27 Approximately 24 potting[9] vessels target whelk across the array area with an additional five potting vessels that target a mixture of whelk, brown crab and lobster. The distribution of potting grounds for Irish vessels under 15 m in length has been mapped for different target species of whelk, lobster, crab and shrimp, as presented on Volume 3, Chapter 9: Commercial Fisheries, Figure 9. Based on the data it has been calculated that the array area overlaps with 3.2% of the whelk fishing grounds that extend along the eastern Irish coast out to 12 NM (Table 6 in the Commercial Fisheries Chapter). The average annual whelk value landed from the array area has been estimated to be €432,000 (see Table 6 of Commercial Fisheries Chapter for more information).

Tourism economy baseline

Volume and value

Volume and value – national picture

17.6.28 Tourism in the Republic of Ireland has experienced a strong recovery since the Covid-19 pandemic, with visitor numbers and economic contributions rebounding significantly. By 2022, growth in tourism exceeded expectations, though it had not yet returned to pre-pandemic levels (The Irish Times, 2022). In 2023, Ireland welcomed approximately 6.3 million foreign visitors, generating an estimated €7.3 billion in revenue—reflecting a recovery of over 46% from 2020 (CSO, 2024a). Visitor exports amounted to €11.4 billion in 2022, and international tourist arrivals are forecasted to total 16.5 million by 2033 (WTTC, 2024).

17.6.29 Domestic tourism has also shown strong performance. In 2023, Irish residents took 14.3 million domestic trips, spending €3.1 billion—up from 13.3 million trips and €2.9 billion in 2022 (CSO, 2024a). While domestic day trips increased from 15.4 million in 2023 to 16.2 million in 2022, expenditure on these trips declined from €856 million in 2022 to €717 million in 2023 (CSO, 2024a).

9 Potting: A fishing method involving baited traps or pots placed on the seabed to catch marine species such as crabs, lobsters, and whelks. This method is considered selective and sustainable as it allows non-target species to be released unharmed.

17.6.30 Despite this overall recovery, challenges remain in certain sectors, including activity providers, restaurants, pubs, and bars, which have reported lower visitor numbers compared to 2022. Businesses face pressures from rising operational costs, energy price hikes, reduced disposable income, adverse weather conditions, and shortages of tourist accommodation in some areas (Fáilte Ireland, 2023b). However, 68% of businesses had more visitors in 2022 compared to 2021, and over half saw further increases in 2023 (Fáilte Ireland, 2022a; 2023b).

17.6.31 The number of overseas tourist visits to Ireland grew every year from 2012 to 2019 from 6.3 million in 2012 to 9.7 million in 2019 (Statista, 2020). The average spend by an overseas tourists and holidaymakers was €518/£451 and €598/£520 respectively (Tourism Ireland, 2019a). The average length of stay for an overseas tourist was 7.3 nights, and for a holidaymaker it was 6.2 nights. Overseas Visitors spent €5.17 million in 2019 in the Republic of Ireland (Tourism Ireland, 2019a). Just under 7.6 million visitors to the Island of Ireland were on domestic trips (Irish and Northern Irish vacationers) (Tourism Ireland, 2019a).

17.6.32 In May 2024, Ireland welcomed approximately 1,999,200 passengers on overseas routes, comprising both foreign visitors and Irish residents returning home. This represents a 6.5% increase compared to May 2023, when 1,877,900 passengers arrived, and an 18% increase from May 2022, when 1,592,400 passengers arrived. Notably, passenger arrivals in May 2024 were 10% higher than the pre-pandemic levels of May 2019, which saw 1,818,900 passengers (CSO, 2024b).

17.6.33 Sea travel also saw growth, with ferry passenger numbers on Great Britain routes to and from the island of Ireland in the first quarter of 2024. This is matching the levels of the same period in 2023, indicating a recovery to pre-pandemic levels (Tourism Ireland, 2024a). The recovery in air travel is particularly notable, with transatlantic traffic increasing by 8.6% in May 2024 compared to May 2023, rising from 218,000 to 236,700 passengers (CSO, 2024b).

17.6.34 A survey of Domestic Coastal and Marine Tourism and Leisure Activity in Ireland was conducted in 2019 (University of Galway, 2020). In the survey sample of 1,004 Irish residents, 770 individuals (77%) had actively engaged in marine based activities, on either day or overnight trips, during the previous year, 2018. 401 had participated in water-based activities. The rate of participation in marine activities on just overnight coastal trips was less at 43% and the rate of participation in water-based activities for overnight trips was also less at 24%. The most popular land-based marine related activities are walking/running along the coast/beach/cliffs/etc., beach or seaside trips, and coastal sightseeing. The most popular water-based activities are sea swimming, surfing, recreational boating of different types and sea angling.

17.6.35 Within this survey, the average expenditure per coastal day trip in 2018 was calculated at €95, while the equivalent expenditure for coastal overnight trips was €310. This difference reflects the higher costs associated with overnight stays, including accommodation, meals, and longer-duration activities. Additionally, the estimated expenditure on water-based activities per person per trip was €56 across the sample. For those who actually engaged in water-based activities during their coastal visit, the expenditure rose to €73 per person, highlighting the additional costs for activities such as kayaking, sailing or fishing.

17.6.36 The survey results further reveal that domestic tourists tend to undertake the majority of their marine activities along Ireland's west and south coasts, with a particularly high concentration of visitors in counties like Clare, Galway, Kerry and Cork. This geographic preference is attributed to the diverse range of marine activities available in these areas, from adventure sports to scenic coastal experiences. These regions are also known for their natural beauty, attracting tourists looking for both active and leisurely engagements with the coastline.

17.6.37 There are also notable differences in participation rates based on demographics. Younger tourists (18-34) are more likely to engage in adventure-based activities like surfing and kayaking, while older tourists (55+) prefer less strenuous activities such as walking or coastal dining. Social class also influences activity choice, with higher-income tourists opting for premium experiences like boat tours, and lower-income tourists favouring free activities like beach walks. Family structure plays a role as well, with families with children engaging in family-friendly activities, while adults without children tend to prefer more active pursuits. These differences highlight the need for a wide variety of tourism products to cater to diverse domestic coastal tourists in Ireland.

17.6.38 Total expenditure by domestic tourists in coastal areas was estimated to be €698 million in 2018, which represents 35% of the total expenditure by domestic tourists (using the broader Fáilte Ireland measure for domestic tourists, which includes business trips and other reasons for taking overnight trips) equating to 10.92 million in total trips and €2,006 million in total revenue. The marine related activity expenditure, or what might truly be referred to as domestic marine tourism, is estimated to generate revenue of €381 million with €172 million being spent on water-based activities. Marine tourism made up an estimated 19% of total domestic tourism expenditure in 2018.

Volume and value – local picture

17.6.39 Local data on tourism after 2019 is not available at the same level of detail as national data. This limitation is discussed further in section 17.8. It is important to note that the latest national data (Fáilte Ireland, 2023d) indicates that domestic and international visitor volume and value exceeds pre pandemic levels.

17.6.40 Dublin remains an international destination, serving as a business hub and a gateway to the entire country. It continues to be utilised by international visitors as an entry point and springboard for longer breaks in Ireland, as well as a base for departure afterwards (Fáilte Ireland, 2023d). In 2019, Dublin received approximately 6.6 million overseas visitors, with a total spend of €2.2 billion (Fáilte Ireland, 2019).

17.6.41 The domestic visitors market is more regionally spread with 85% of all domestic trips to destinations outside of Dublin. Activities and trips away from home generated an estimated €296 million revenue during 2019 (Fáilte Ireland, 2019b).

17.6.42 A 2009 survey of overseas visitors to key attractions in Dublin found that the daily average expenditure per person per day was €205 (Technological University Dublin, 2009). Whilst more recent data found for 2019 Average spend per person in Dublin was just over €330 for Northern Irish and Overseas tourists and €168 for domestic tourists.

17.6.43 Dublin generates more than half of the Republic of Ireland's GDP in the tourism and travel sector and is highly reliant on international visitors.

17.6.44 There is limited recent data on the volume and value of tourism in Dublin. However, in 2016 Dublin City Council published a presentation that assessed the economic impact to Dublin of Tourism (Dublin City Council, 2016). This found that 22% of new jobs created in Ireland in the 4 years prior to 2016 were in the Tourism sector and 1 in 9 jobs in Dublin's economy was within the tourism sector (Dublin City Council, 2016).

Table 17 Dublin tourism facts and figures: 2015-2019

	Tourists' residence					
	Overseas		Domestic		Northern Ireland	
	2015	2019	2015	2019	2015	2019
No. of overseas tourists visited Dublin (000s)	4,937	6,600	1,599	1,800	391	283
Average spend per capita in Dublin	n/a	€333	n/a	€168	n/a	€334
Revenue generated (million)	€1,726	€2,200	€264	€296	€82	€95
Average nights	n/a	4.7	n/a	1.9	n/a	1.9

Source: Fáilte Ireland, 2016, Tourism Facts 2015: Dublin & Fáilte Ireland, 2020, Tourism Facts 2019: Dublin.
n/a indicates where data is not available.

17.6.45 In 2016, Wicklow welcomed 329,000 visitors from elsewhere in Ireland. They stayed for a total of 1.5 million nights, with an average length of stay of 4.6 nights, and spent €71 million. This represented 33% of the domestic nights spent in the East and Midlands region and 4% of the total nights in Ireland, which compares well with Wicklow's 23% (regional) and 3% (national) share of the bed stock. Wicklow was visited by 272 thousand overseas visitors, who spent €86 million (Wicklow County Council, 2017).

Visitor attractions

17.6.46 The top fee charging visitor attractions in Dublin and Wicklow (with over 100,000 visitors in 2019) and the visitor numbers for 2019, 2022 and 2023 (Fáilte Ireland, 2023) are shown in Table 18. There were 29 visitor attractions in Dublin and Wicklow which drew in over 100,000 visitors in 2019, 12 of which are free and 17 of which require payment. The top visitor attractions in Dublin are highly concentrated in the Dublin City, with just four of the 25 attractions located in Wicklow, two in Fingal, one located in Dún Laoghaire-Rathdown with none located in South County Dublin.

17.6.47 The COVID-19 pandemic significantly impacted these attractions, leading to a substantial decline in visitor numbers in 2020. Fáilte Ireland postponed the 2020 annual visitor attractions survey and conducted a combined 2020 and 2021 visitor survey starting in February 2022 (Fáilte Ireland, 2023a). All attraction categories experienced an initial drop in visitor numbers in 2020, however some attractions faced larger reductions than others. The number of visitors then increased in 2021 from the previous year but were still 45% less than visitor numbers experienced in 2019.

17.6.48 Data for 2022 indicated that the percentage of international visitors to visitor attractions had yet to return to pre-pandemic numbers however the proportion of international visitors outnumbered domestic visitors for the first time since the pandemic (Fáilte Ireland, 2023b). Indoor attractions saw increases in their visitor numbers from 2021 to 2022 because of the lifting of lockdown restrictions however numbers are not quite at pre-pandemic levels in most cases. Visitor garden visitor numbers continued to grow in 2022 however natural attractions and other attractions with outdoor spaces saw visitor levels closer to pre-pandemic levels after peaking in 2021.

17.6.49 By 2023, although the number of visitors to visitor attractions had yet to return to pre-pandemic numbers, it had increased from the 2022 values. Indoor attractions have continued to experience increases in visitor numbers compared to the 2022 increases. Visitor garden visitor numbers continued to grow in 2023 and are getting closer to pre-pandemic levels.

Table 18 Top visitor attractions in Dublin and Wicklow

Attraction Name	Visitor Nos 2019 (000s)	Visitor Nos 2022 (000s)	Visitor Nos 2023 (000s)	Free or paid	County
Guinness Storehouse	1,700	1,100	1,469	Paid	Dublin City
Dublin Zoo	1,280	1,240	1,161	Paid	Dublin City
Book of Kells	1,140	835	968	Paid	Dublin City
National Gallery of Ireland	761	786	1,014	Free	Dublin City
Glendalough Monument & Site	732	336	362	Free	Wicklow
National Botanic Gardens	685	640	663	Free	Dublin City
St. Patrick's Cathedral	628	444	576	Paid	Dublin City
Powerscourt House, Gardens & Waterfall	487	418	453	Paid	Wicklow
National Museum of Ireland - Archaeology	505	310	510	Free	Dublin City
Irish Museum of Modern Art	504	567	626	Free	Dublin City
Farmleigh Estate	429	318	359	Free	Dublin City
Kilmainham Gaol	405	255	258	Paid	Dublin City
National Museum of Ireland - Natural History	387	138	423	Free	Dublin City

Attraction Name	Visitor Nos 2019 (000s)	Visitor Nos 2022 (000s)	Visitor Nos 2023 (000s)	Free or paid	County
Chester Beatty Library	371	434	490	Free	Dublin City
Old Jameson Distillery	360	249	-	Paid	Dublin City
Science Gallery at Trinity College Dublin	340	-	-	Free	Dublin City
Airfield Estate	304	122	120	Paid	Dún Laoghaire-Rathdown
EPIC The Irish Emigration Museum	272	265	357	Paid	Dublin City
Christ Church Cathedral	260	152	228	Paid	Dublin City
National Museum of Ireland - Decorative Arts & History	231	250	467	Free	Dublin City
Phoenix Park Visitor Centre	209	2,000	1,965	Free	Dublin City
Malahide Castle & Gardens	202	182	166	Paid	Dublin
Russborough House & Parklands	200	200	200	Paid	Wicklow
Dublinia	189	134	188	Paid	Dublin City
Teeling Whiskey Distillery	130	115	122	Paid	Dublin City
Our Lady of Mount Carmel Church	123	80	-	Free	Dublin City
Skerries Mills	119	117	124	Paid	Fingal
The Little Museum of Dublin	118	75	104	Paid	Dublin City
National Sealife Centre	110	124	-	Paid	Wicklow

Source: Fáilte Ireland, 2023a, Annual Visitor Attraction Survey

Visitor characteristics

17.6.50 Fáilte Ireland carries out annual visitor attitude surveys. Fáilte Ireland's Overseas Holidaymakers' Attitudes to Ireland (Fáilte Ireland's 2019) identifies the following, as the reasons tourists visit and enjoy Ireland:

- Interesting history and culture (84%);
- Plenty to see and do (89%);
- Beautiful scenery (91%);
- Natural, unspoilt environment (82%); and
- Good range of natural attractions (84%).

17.6.51 18% of overseas holidaymakers to Dublin visited coastal villages, of which Dalkey and Howth were the most popular (Dublin County Council, 2016).

17.6.52 The latest visitor survey undertaken at the Dublin level (in 2009) reveals information about the characteristics of overseas and Northern Irish visitors to key attractions Dublin (Technological University Dublin, 2009). Key information from the survey included:

- The most popular age group for respondents was 25-34 years, with 35% of respondents. Only 3% of respondents were over the age of 64;
- The main purpose of the visit was 'on holiday away from home' for 78% of respondents;
- 65% of respondents stayed for 4 nights or less;
- 76% of respondents didn't stay overnight in other parts of the Republic of Ireland; and
- 44% of respondents had never been to Dublin before.

Accommodation

17.6.53 In 2016, Dublin faced a significant hotel shortage, with the Irish Tourism Industry Confederation (ITIC) identifying the need for approximately 8,000 new bedrooms by 2020. Despite some progress, the shortfall in hotel accommodation remains a pressing issue. Recent projections indicate that 11,500 additional tourism bedrooms will be required across Ireland by 2032, with a large proportion needed in Dublin (Power, 2023). The shortage has been exacerbated by high construction costs, expensive sites, planning delays, and limited capital, all of which have hindered development. Furthermore, the repurposing of tourism accommodation to house Ukrainian refugees and asylum seekers has placed additional strain on availability. To address these challenges, the ITIC report calls for government interventions, including financial incentives and streamlined planning processes, to stimulate growth and ensure Dublin can meet future tourism demand (Power, 2023). The majority of overseas visitors visiting Dublin stayed in a hotel in 2019 (51%). Many holiday makers also rented (15%), stayed in a guest house/B&B (14%) or stayed in a hostel (13%). A smaller proportion stated with friends or relatives (3%).

17.6.54 In 2023, the hotel and accommodation sector in Dublin and Ireland continued its recovery from the pandemic, although challenges remain in meeting demand. According to a report by the ITIC, while occupancy levels have returned to pre-pandemic figures across various accommodation types such as guesthouses, B&Bs, self-catering units, and caravan and campsites, the sector continues to face pressure due to limited supply in some areas. International visitors have played a significant role in this recovery, with Dublin seeing substantial growth in hotel occupancy, driven by both demand from international tourism and a steady influx of domestic visitors (ITIC, 2023).

Table 19 Accommodation bednights (overseas holiday makers visiting Dublin)

	Hotel	Rented	Guesthouse/ B&B	Hostels	Friends & Relatives	Others
%	51	15	14	13	3	4

Source: Fáilte Ireland, 2020, Tourism Facts 2019: Dublin.

Local tourism

Dún Laoghaire-Rathdown

17.6.55 There are no economic impact studies for the tourism sector available for the Dún Laoghaire-Rathdown area. However, the baseline assessment considers the wider information available on tourism for the county area. The Dún Laoghaire-Rathdown Tourism Strategy 2024-2028 addresses the previously identified gap in visitor data and tourism performance at the Dún Laoghaire-Rathdown level. The new strategy aims to transform the county into a top tourist destination by 2028, with a focus on increasing visitor numbers and safeguarding natural and built heritage, culture, and biodiversity. Estimates using a multiplier for the wider and induced effects of tourism put the 2024 value of tourism to the Dún Laoghaire-Rathdown economy at approximately €350 million, based on conservative estimates of visitors to the area (DLRCC, 2024).

17.6.56 The local tourism market is strongly weighted towards the Irish market and in particular towards Dublin visitors who have traditionally and continue to use key recreational assets such as Dún Laoghaire Pier, the coastal villages, Dublin Mountains or use facilities such as Leopardstown Racecourse.

17.6.57 In 2023 Dún Laoghaire-Rathdown County Council completed cruise ships survey report for 2022 (Dún Laoghaire-Rathdown County Council, 2023). Dún Laoghaire Harbour welcomed almost 70 cruise ships between April and October 2022 and over 90 ships are/were booked for 2023. There are a number of local benefits that occur as a result of these ships, their passengers and crew. The survey found there were visits to premises across a number of sectors that included tourism, retail. Hospitality, health care and leisure with 17% of businesses surveyed indicating that they had received visitation from more than 20 passengers during the visit and almost half of businesses having already increased stock or intending to increase stock to respond to demand from cruise passengers/crew.

Tourism perception of offshore wind

17.6.58 This section provides a review of research examining the relationship between wind farms (both onshore and offshore) and their associated infrastructure, on local visitor economies. Overall, there is a relatively limited body of evidence relating to the extent to OWFs impact upon tourism, with the majority of the research to date being focused on onshore wind farms.

17.6.59 It should be noted that there is limited availability of relevant offshore wind research from Ireland, so this evidence base largely draws on the evidence from the UK and US.

17.6.60 The primary research base can be divided into three broad groups focusing on (1) ex-ante research, (2) ex-post research and (3) wider research.

Ex-ante research

17.6.61 The ex-ante research makes up the majority of the research base, and includes both scheme-specific studies, which tend to focus on impacts on a highly localised area, as well as larger area assessments, which consider the cumulative effect that wind farm developments may have.

17.6.62 The majority of scheme-specific ex-ante studies rely predominantly on perceptions-based survey research to draw conclusions about the potential for wind farm developments to affect visiting behaviour in the future. Although there was variation in the survey methods adopted (including study areas, sampling techniques and questions asked) making it difficult to directly compare the studies on a like-for-like basis, these assessments typically explore two types of effects, including:

- The extent to which the presence of a wind farm has an effect on the visitor experience; and
- Visitors' views on whether the development of a wind farm might affect their future visiting behaviour.

17.6.63 This approach tends to lead to a high level of uncertainty about the scale of potential impacts, particularly as the evidence base is mixed and findings vary across studies.

17.6.64 Furthermore, much of the focus of the research has tended to be on the impact of wind turbines, rather than the onshore transmission and/or grid infrastructure (unless developments are using pylons in areas which have sensitivity to landscape designations or scale of tourism activity). This is due to the concerns of stakeholders typically being around the visual impacts of turbines, with less concern about the transmission infrastructure unless it relies on pylons[10].

Ex-post research

17.6.65 This part of the research base is limited in its coverage. Ex-post studies explore and provide evidence of the actual effects of specific wind farm developments. Relevant studies in this group are focused on assessing the observed changes in visitor behaviour after a wind farm has been built and is operational. These studies explore observed effects as reported by visitors, sector bodies, tourism, and other businesses.

17.6.66 The most helpful UK-based studies of OWF developments are studies carried out in relation to North Hoyle (Arup Economics and Planning, 2002) and Gwynt Y Môr (RWE) and N Power Renewables, 2005) wind farms off the coast of North Wales. These were amongst the first OWF schemes in Wales. Findings indicated minimal impact on tourism, with some visitors appreciating the visual aesthetics and environmental benefits of the wind farms, while others expressed concerns about the disruption of landscape views.

10 A tall tower -like structure used for carrying electricity cables high above the ground.

17.6.67 Similarly, Denmark has explored the effect of the Samsø Island wind farm, operational since 2000. A study by the Danish Energy Agency (2016) found that the wind farm contributed positively to the island's image as a sustainable tourism destination. It attracted eco-tourists interested in renewable energy and eco-friendly initiatives, enhancing the island's appeal without significant negative effects on visitor numbers.

17.6.68 In Germany, research on the Borkum OWF (Lindner et al., 2019) revealed that there was little change in visitor behaviour following its construction. Although some visitors initially expressed concerns about the visual impact of the turbines, these concerns diminished over time, and the wind farm became accepted as part of the landscape. Local tourism operators reported no significant decline in visitor numbers, and some noted that the wind farm even attracted tourists interested in renewable energy.

Wider research

17.6.69 Alongside the thematic groups outlined above, there is also a wider body of literature which encompasses:

- Studies that analyse existing research (e.g. Libourd et al (2024), McGowan and Sauter (2005) and The Tourism Company (2012)) – While some of these reviews are useful, many focus only on selected parts of the available data, which can lead to an incomplete or biased understanding of the evidence.
- Studies from overseas (such as North Carolina State University (2016)) – Research from institutions such as North Carolina State University highlights a broader evidence base, encompassing both pre-development (ex-ante) and post-development (ex-post) studies. These international studies offer lessons on potential environmental, economic, and social impacts, which can inform and enhance the assessment process in the Irish context.
- General perceptions-based studies (such as Research Councils United Kingdom (2009) and Soini et al. (2011)) – Exploring attitudes towards wind farms and associated infrastructure in general (i.e. not in connection to a specific development and/or proposal).
- General tourism surveys (such as Fáilte Ireland (2012) and Cardiff City and County Council (2012) – Which explore what tourists value about a particular tourism destination and factors which enhance or detract from their experience.

17.6.70 It should be noted that across all strands of the research base, there is limited coverage in peer-reviewed academic literature. The lack of peer reviewed academic research in this area does not invalidate the evidence that exists although it does highlight the extent to which the evidence base is not yet well-established. It is therefore necessary, when reviewing the evidence that exists, to consider the reliability of the methodologies used in available studies, particularly where survey research and impact assessment methods are used.

Impact on tourism

17.6.71 Overall, the research typically finds a large majority of visitors and tourism-related businesses in local areas affected by potential developments do not expect any impact. A study for the UK's National Grid (ERM, 2014) states *'A clear finding is that the majority of recreational users on ex-post and ex-ante projects perceive that the project will have 'no impact' on their personal behaviour and spend.'* Likewise, the proportions of visitors reporting that they were more or less likely to visit as a consequence of a wind farm development are typically small. The proportion expecting negative impacts (in terms of the visitor economy and/or their own behaviour) is usually marginally greater than those expecting positive impacts.

17.6.72 Whilst the research points towards potential for some visitors to be discouraged from making future visits to an area affected by a wind farm development, this is usually balanced (and in some cases exceeded) by visitors reporting that they will visit more frequently. This conclusion is reinforced by research studies (such as Gossop (2007) and BiGGar Economics (2008) which have assessed the impacts post development, pointing towards there being no evidence of significant lasting impact of wind farm development and operation (either positive or negative) on tourism. More recently Alem et al., 2020 recognised that there is no proof to suggest there is a negative impact from offshore windfarms on tourism. However, the study notes that there is often significant local concern about tourism impacts and that this evidence should be communicated to the local community as early as possible in the planning phase.

17.6.73 An Ex ante study by the University of Delaware for the US Department of the Interior Bureau of Ocean Energy Management (US Department of the Interior Bureau of Ocean Energy Management, 2018) used a stated-preference survey to estimate the potential impact of offshore wind power on recreational beach use on the East Coast of the United States (US). The study looked at how OWF development might affect people's future visiting behaviour. The findings suggests that an offshore wind power project would affect many beachgoer's experience/enjoyment on beach trips, change trip behaviour, and generate curiosity trips. For wind power projects near shore (closer than 7.5 miles) the study found that these effects are estimated to be negative in economic terms, especially on larger, more popular beaches. At further distances, the study found that the negatives are largely washed out by trip gain and curiosity trips, which, in many instances result in a net positive gain. This was found to be more pronounced on smaller beaches. This is an example of a number of studies that are ex ante survey based and should be treated with a degree of caution when weighing up the evidence base because they look at how people say their visits may change and are often tied to policy decisions which respondents could wish to influence.

17.6.74 A number of studies have been conducted to help inform policy decisions about developing the offshore wind sector. A study by the German Offshore Wind Energy Foundation (Stiftung Offshore-Windenergie and REM Consult, 2013) based on secondary research and evaluation of relevant reports and projects, including the use of questionnaires and interviews, illustrated that there can be a positive correlation between offshore wind energy and tourism. This positive impact is most likely when the development is carefully planned and managed, considering factors such as environmental impact, community involvement, and compatibility with local tourism.

17.6.75 In Scotland, the Sectoral Marine Plan for Offshore Wind Energy's Social and Economic Impact Assessment Scoping Report included an evaluation of tourism impacts (Scottish Government, 2018). A literature review was conducted which noted that there is very little actual evidence relating to the impacts of wind farms on tourism performance (i.e. tourism volume and value further to the construction and operation of OWFs). A study conducted in Denmark in 2009, summarised by the University of Delaware in 2010, found no decrease in the tourism levels or reduction in summer house rental prices one year after the construction of the Horns Rev OWF. In the UK, a public attitude survey towards the operational North Hoyle OWF in North Wales (Arup Economics and Planning, 2002) reported that two thirds of residents (67%) stated the presence of the OWF had no effect on the number of people visiting or using the area, with people more likely to state there had been an increase rather than a decrease in numbers (11% stated increase compared with 4% who stated decrease). 82% of people who took part in the survey did not see any effect on visitor numbers. Overall, the above research demonstrates that wind farms are very unlikely to have any adverse impact on tourist numbers (volume), tourist expenditure (value) or tourism experience (satisfaction).

17.6.76 A study by Fáilte Ireland (2018) on visitor awareness and perceptions of the Irish landscape provides findings on the relationship between large infrastructure projects, tourism and landscape in Ireland. There was 16 popular and long-established tourist sites in Ireland chosen as the study areas to represent a range of types of landscape where this research would occur. The sites were chosen to represent situations where development was visible from those locations (10 locations) – or on the route there (6 locations). The key finding in relation to the perception of Arklow Bank OWF from Brittas Bay (the wind farm sits less than 15 km from Brittas Bay) was that no respondents mentioned any developments standing out at Brittas Bay itself or any changes to be made, however 18% of respondents mentioned wind turbines on the way to the study location. Generally, the findings suggest that the effects of visibility of large infrastructure projects had negligible effects on the viewer's enjoyment of the landscape.

17.6.77 There are a complex range of factors which explain the attitudes of visitors to wind farm development and the consequences upon visiting behaviour. There is a need to be cautious in generalising but the evidence base (see for example Devine-Wright, 2007) points towards a tendency for younger people and those in higher socio-economic groups to be more accepting of wind farm development, in part influenced by their wider attitudes towards renewable energy and its role in addressing climate change. This sentiment is echoed in a 2010 paper (Ladenburg, 2010) which finds an overall positive attitude towards OWFs and suggests that attitudes tend to covariate negatively with household income and, and positively with level of education. In addition, this paper found that attitudes towards OWFs appear to be significantly associated with demographics, but also suggests that attitudes are dependent on type and frequency of usage of the beach and coastal zone. The UK Government public attitude survey finds that older people were more likely to have changed their opinion of the threat of climate change over recent years. This could have an impact on the findings above in relation to the socio-economic characteristics of respondents.

17.6.78 As the offshore windfarm sectors mature there will be more ex-post evidence assessing the impacts of the offshore windfarm on tourism, however currently this is still limited. Smythe et al (2020) conducted a study through which tourism and recreation professionals and participants met in a focus group to discuss experiences with and observations of the 30 Megawatts (MW) Block Island Wind Farm, the first OWF in the US, located several miles offshore from an iconic tourism destination (New Shoreham, Rhode Island). Analysis revealed diverse viewpoints and largely positive encounters, though some negative impacts were identified. Perspectives were shaped in part, by experiences with the planning process. Most participants described the project's appearance in neutral or positive terms. Overall, the wind farm appears to be an attractor of visitors, either as a novel sight or as a recreational fishing destination. Participants felt the wind farm should be promoted for tourism but cautioned that interest may be short-lived and there may be less support for larger offshore developments. Findings support tourism and recreation sector engagement throughout offshore wind project planning and operation.

17.6.79 The evidence from Ireland is limited however, it is useful to consider the general perceptions of the Irish public as many have experienced offshore windfarms through experiences as tourists. In a recent Irish public perceptions study by Cronin et al. (2021) data was collected using an online survey which captured the views of 1,154 people. The study found generally, there is support for addressing climate change and offshore wind investment in Ireland. The results of the study also provide insights into visitor perceptions. In comparison the UK has also shown similar trends from perception-based studies.

17.6.80 In a recent study by the Scottish Government (2023) four in five (80%) national respondents and 83% of coastal respondents either strongly approve or tend to approve of OWFs. The vast majority of all respondents, whether national or coastal, have not avoided visiting an area due to the presence of offshore wind turbines visible from the shore, while just 4% of respondents have done so. Four out of five national respondents (80%) say being able to view turbines from an OWF while on holiday in Scotland would make no difference to their choice of holiday, while 4% would be more likely to choose the holiday if they could see turbines. Around one in ten (11%) of national respondents would be less likely to choose the holiday because they could see turbines from an OWF.

17.6.81 As above, the results indicate that attitudes to planned OWFs change significantly with education levels. Approximately half of respondents had previous experience of OWFs (the majority of whom had experienced OWFs on holiday and their views have therefore been shaped by their perception of offshore wind as tourists).

17.6.82 The results showed that those with experience of OWFs are more positive towards OWF development in Irish waters, than those with no experience of OWFs. In terms of the effect on tourism and aesthetics respondents found OWFs to be relatively unobtrusive and in general a positive addition to the sea scape.

17.6.83 The data would suggest that an opportunity exists to create a public awareness campaign as a next step, to build on the favourable national mood and public understanding of the role of offshore wind in decarbonising the economy. To further investigate the perception of those who are regularly exposed to OWFs, a focus group involving five members of the public with regular exposure to Ireland's only wind farm, Arklow Bank Wind Farm, was held. The scope of sentiment expressed towards the offshore turbines ranged from benign to extremely positive.

17.6.84 In addition, the research also states that visitors and tourism-related businesses usually recognise the potential for positive impacts associated with the extra expenditure in the sector, and the local economy arising from construction activity (or in some instances the additional interest in visiting the development).

17.6.85 In contrast a study by Glasgow Caledonian University (2008) suggests that even where there have been negative effects, these often occur in the form of displaced tourism with visitors diverting to neighbouring areas.

17.6.86 Research by the Prof. Cara Aitchison at the University of Edinburgh on behalf of the Scottish Government's Renewables Inquiry (Aitchison, 2012) concluded by saying that 'the findings from both primary and secondary research relating to the actual and potential tourism impact of wind farms indicates that there will be neither an overall decline in the number of tourists visiting an area, nor any overall financial loss in tourism-related earnings as a result of a wind farm development'.

17.6.87 The literature suggests therefore that wind farm developments will not have a significant effect on the overall volume and value of tourism activity in most instances. Various studies (such as University of the West of England (2004); Ipsos Market & Opinion Research International (MORI) (2014); Glasgow Caledonian University (2008); Ladenburg (2010) and Regeneris Consulting and The Tourism Company (2014)) suggest that the majority of visitors do not expect their behaviour to be influenced (either positively or negatively) by the presence of wind farm developments. A 2022 survey in Scotland found that most respondents did not expect the presence of OWFs to deter them from visiting certain locations, with only a small minority expressing concerns about visual impact (Tethys, 2022).

17.6.88 Overall, the evidence outlined above suggests that OWF developments generate limited, or no negative impact on tourist and recreational users during the construction and operations and maintenance phases. To some extent, this may depend on the circumstances, the nature of the local tourism facilities and offer, the types of visitors they attract, and the relationship between the facilities and the Dublin Array onshore and offshore infrastructure. This is a useful way of thinking about the potential for impact but does not help to define specific thresholds for impact occurring as the evidence is not currently strong enough to allow this.

Tourism in the ZTV

17.6.89 A ZTV was created using a computer-generated model of the wind farm and landform, using Ordnance Survey Ireland terrain data. The ZTV illustrates the theoretical visibility of the wind turbine generators (WTG) indicative layout with the maximum visual impact (see Volume 3, Chapter 15: SLVIA) based on bare ground landform and with sea level set to 0 m AOD. It does not include the screening effect of ground cover features, such as vegetation and buildings, which will significantly reduce the amount of actual visibility of the wind farm and therefore overstates the maximum potential visibility scenario providing an incredibly conservative assessment zone.

17.6.90 A desk-based search of the key sites within Dublin Bay was undertaken. The sites considered to be most sensitive to impacts of offshore windfarm development are as follows:

- Baldoyle Bay;
- Ireland's Eye;
- Howth Head;
- North Dublin Bay including North Bull Island;
- Tolka Estuary;
- South Dublin Bay; and
- Dalkey Island.

17.6.91 A desk-based review of tourist attractions highlighted the following coastal tourism assets/locations[11] within the ZTV that may be impacted visually by the development of Dublin Array. This search has been concentrated on the area from Howth to Wicklow which represents the area that will be most visually impacted:

- Howth Summit and Baily Light House – A summit with panoramic views of Dublin Bay as well as the Baily Lighthouse;
- Bull Island – A nature and wildlife area just north of Dublin Harbour, a place to birdwatch and take in the sealine view. Visitors to Dublin may come here for a more rural part of the trip;
- Poolbeg Lighthouse – A popular attraction to tourists and locals to enjoy as part of a walk. The views of Dublin Bay are enjoyed from this attraction;
- Sandymount Strand – A beach front with views of Dublin Bay which can be enjoyed by locals and visitors to the area;
- Several Seaside parks/gardens including Blackrock Park, Dillon Garden, Shanganagh Park, Bray Beach Seafront Park and Killiney Hill Park;

11 Costal tourism assets are presented as these assets are most likely to have clear views of the wind farm.

- Dún Laoghaire Harbour area which has nearby attractions including Harbour Splash and the National Maritime Museum of Ireland;
- James Joyce Tower and Museum, in Sandycove;
- Beaches including Sandycove Beach and Bray Beach;
- The 'Forty-Foot' bathing area in Sandycove;
- Bulloch and Black Castles, Dalkey and Wicklow Town respectively;
- Dalkey Island – A small Island accessible by boat in which wildlife, historic buildings and attractive views can be enjoyed by visitors;
- Martello towers – Historic Buildings which features a cannon on the roof. 10 towers will have views of the proposed wind farm, with varying degrees of visibility (Volume 3, Chapter 14: Cultural Heritage Settings Assessment (Terrestrial Archaeology Monuments);
- National Sea Life Centre – An aquatic zoo located in Bray with over 1,000 creatures; and
- The Dublin and Wicklow coast is an attractive area for visitors wishing to undertake a seaside walk (for example the Bray Head and Bray Head Cliff Walk).

Marine and coastal recreation baseline

17.6.1 Ireland's coastal waters constitute a significant element of the country's attraction as a tourist destination for both domestic and overseas visitors and water based recreational activities generate significant benefits for the Irish economy. The Dublin and Wicklow coastlines have a well-developed tourist infrastructure and numerous coastal attractions which include coastal walks, water sports, sea angling, recreational beach use and wildlife watching. The shores of the bay are characterised by extensive, shallow sands, known as the North and South Bulls, which are widely used for recreational activities. The coast is also highly valued locally for the vast array of leisure and recreational activities associated with it, including fishing, boating, kitesurfing, swimming, walking, birdwatching, diving, and many more.

Recreational sailing and cruising

17.6.2 There are approximately 16 sailing clubs, two surf schools and two windsurfing schools within Dublin and Wicklow. The Dublin Bay Sailing Club (DBSC) and Irish Sea Offshore Racing Association (ISORA) have been consulted regarding the proposed development. DBSC undertake regular yacht racing in Dublin Bay. ISORA undertake cross channel racing with an offshore programme between Dún Laoghaire to Pwllheli, and Holyhead to Liverpool, and coastal races between January and October. Racing does occur within Dublin Port; however, it is confined to the harbour limits.

17.6.3 A vessel traffic survey was undertaken as part of the Shipping and Navigation assessment (Volume 2, Chapter 10: Shipping and Navigation). There was an average of 58 unique vessels[12] recorded per day in a survey of the offshore during the 14-day winter 2022 study across the shipping and navigation study area. Although larger vessel do not typically frequently transit the offshore array area due to the shallow nature of Bray and Kish banks, smaller vessels racing yachts do frequently use the area. Approximately 36% of vessels passing through the area in summer survey were recreational vessels and 11% in the winter survey (see Chapter 4.3.9-1 Navigational Risk Assessment for more information) demonstrating a high level of seasonality. Recreational races also occur within the study area in the summer. Recreational vessels were generally recorded within coastal regions with many utilising the ports at Dún Laoghaire, Wicklow, and Howth. A limited number of smaller recreational vessels were observed to cross the shallows at Bray and Kish banks.

17.6.4 There are several marinas catering for leisure craft and yachts in the immediate vicinity of Dublin Bay, namely Dún Laoghaire, Clontarf Yacht & Boat Club, Malahide, Howth, Poolbeg, Dublin (City Moorings), Bray and Greystones. Most of these crafts restrict their movements to areas where they can return to their mooring by nightfall. Crafts based in the Dublin Bay area rarely venture south of Killiney Bay or north of Howth.

17.6.5 There is an active cruising route from Carlingford to Wexford. This part of the east coast of Ireland is protected from the prevailing winds and Atlantic swell. Tidal streams are in general slight but increase to the south. Compared with the other coasts, there are few natural anchorages south of Carlingford, but man-made harbours are closely spaced. The cruising routes avoid the shallow banks offshore, including Kish and Bray banks but utilise safe passage inshore.

Scuba diving

17.6.6 Scuba diving is a popular activity in this region, Dublin Bay supports a number of dive sites used by local and visiting dive clubs and dive charter operators. There are approximately six dive clubs with six primary dive spots within 17 km of the array area, with three within the array area and one within the offshore export cable corridor (ECC) route area (Figure). Generally, the diving season is between April to October. Popular dive sites exist around Scotsmans Bay, Dalkey Island, Lambay Island and the Muglins Rock.

17.6.7 A total of eight charted wrecks are located within the array area. The Royal Mail Shipping (RMS) Leinster is also located approximately 7 km east of the array area. It was raised during consultation that dive boats associated with local clubs regularly visit both the wrecks within the array area and the RMS Leinster. Full details of wrecks and other subsea obstructions are provided in Volume 4, Chapter 4.3.14-1: Marine Archaeology Technical Baseline.

12 Unique vessel refers to a distinct, individual ship or boat that was recorded in the study area. This means that each vessel is counted only once per day, regardless of how many times it may have been observed or recorded during that day.

17.6.8 Within Dublin Bay and the surrounding area, there are several other groups using the marine environment, including private boat charters (including Malahide Charter Boat and Howth-Boats), boat-based tours (including Dublin Boat Tour, Dublin Bay Cruises, Skerries Seatours and Cliffs of Moher Day Tour Boat Cruise), ferry routes and independent water sports hire (e.g. City Kayaking, Surfdock Watersports, and Go Sailing).

Recreational fishing/angling

17.6.9 Recreational fishing vessels make up 14% of the vessels in the region during the summer and 19% in the winter (see Chapter 4.3.9-1 Navigational Risk Assessment for more information).

17.6.10 Fishing vessels are more common in the coastal region of the study area, particularly in transit between the harbours on the coast. While most transit through the area, 14 vessels per day were recorded in the summer 2023 survey, and 11 vessels per day were recorded in the winter survey, were actively seen fishing in the area.

17.6.11 Angling is very popular along the south-east coast of Ireland but there is limited activity on the Kish and Bray Banks themselves due to the distance offshore and the effects of tidal currents on small pleasure craft. The angling activity is limited to inshore areas to the west of the bank around Dublin Bay (south), Scotsman's Bay, Dalkey Island, Killiney Bay and south along the Wicklow coast.

17.6.12 A Guide to Sea Angling in the Eastern Fisheries Region (Eastern Regional Fisheries Board, 2016) provides an overview of sea angling within Dublin Bay. The Guide notes that up to four slipways are available in the Dún Laoghaire harbour from which to launch small boats to fish the Burford and Kish Banks in Dublin Bay, where codling, whiting, pollack, coalfish, pouting and ray are fairly common between May and September.

17.6.13 There are a number of launch sites along the coast in Dublin Bay where small boats can be launched to fish, species targeted are mackerel, whiting, codling, pollack, dab, spurdog, mullet, tope and ray, principally from May through to October targeting mainly sand with reef and rock around Islands.

17.6.14 Howth is a major small boat angling centre, and the local club have a headquarters on the west pier. Small boats can be launched from the slipway for general ground fishing around Ireland's Eye and on the Kish Bank. Species to be expected are codling, coalfish, pollack, whiting, dogfish, spurdog, ray, mackerel and flatfish.

17.6.15 Dún Laoghaire Harbour is a popular boat and shore-angling centre, boats can be launched at the slipway for fishing in Scotsmans Bay and around Dalkey Island. Two charter boats operate from the harbour specialising in general ground, wreck and reef fishing off the Kish and Burford Banks. Charter boats operate from the harbour specialising in general ground, wreck and reef fishing. Large spurdog and tope turn up regularly in boat catches.

17.6.16 Further south at Bullock and Coliemore Harbour small boats can be launched from mid water through high tide for general ground fishing around Dalkey Island. Species available include mackerel (in season), dogfish, plaice, dabs, codling and whiting.

Coastal paths

17.6.17 There are a number of coastal paths along the coastline including the Dublin Mountains Way, the Carrickgollogan Lead Mines Way and Dollymount Strand which is along Bull Island in North Dublin. Additionally, there are a number of cycle routes that extend along the coast including the Sandymount to Dún Laoghaire cycle route and the Malahide to Howth Head cycle route north of Howth. As of January 2025, the Tolka Estuary Greenway in Dublin Port is open to the public, offering cyclists and pedestrians new access along the northern perimeter of the port. Construction is ongoing for the second phase of the greenway, which will extend the route to the easternmost point of Dublin Port, with completion expected by summer 2025. Additionally, work is underway on the Liffey-Tolka Project, a 1.4 km dedicated cycle and pedestrian route linking the River Liffey with the Tolka Estuary. This project is anticipated to be finished in 2025. These developments are part of Dublin Port's broader plan to integrate the port into the city's coastal cycling network and enhance public access to Dublin's coastline.

Beaches

17.6.18 The coast is increasingly important for the range of recreational activities it offers (e.g. sailing and swimming) and for its amenities (e.g. beaches). The coast is diverse, varying from rocky headlands with a variety of inlets, long established historical harbours and high-quality beaches. There are also a number of designated blue flag beaches including Killiney, Seapoint, Portmarnock, Balcarrick, Rush South.

Water sports

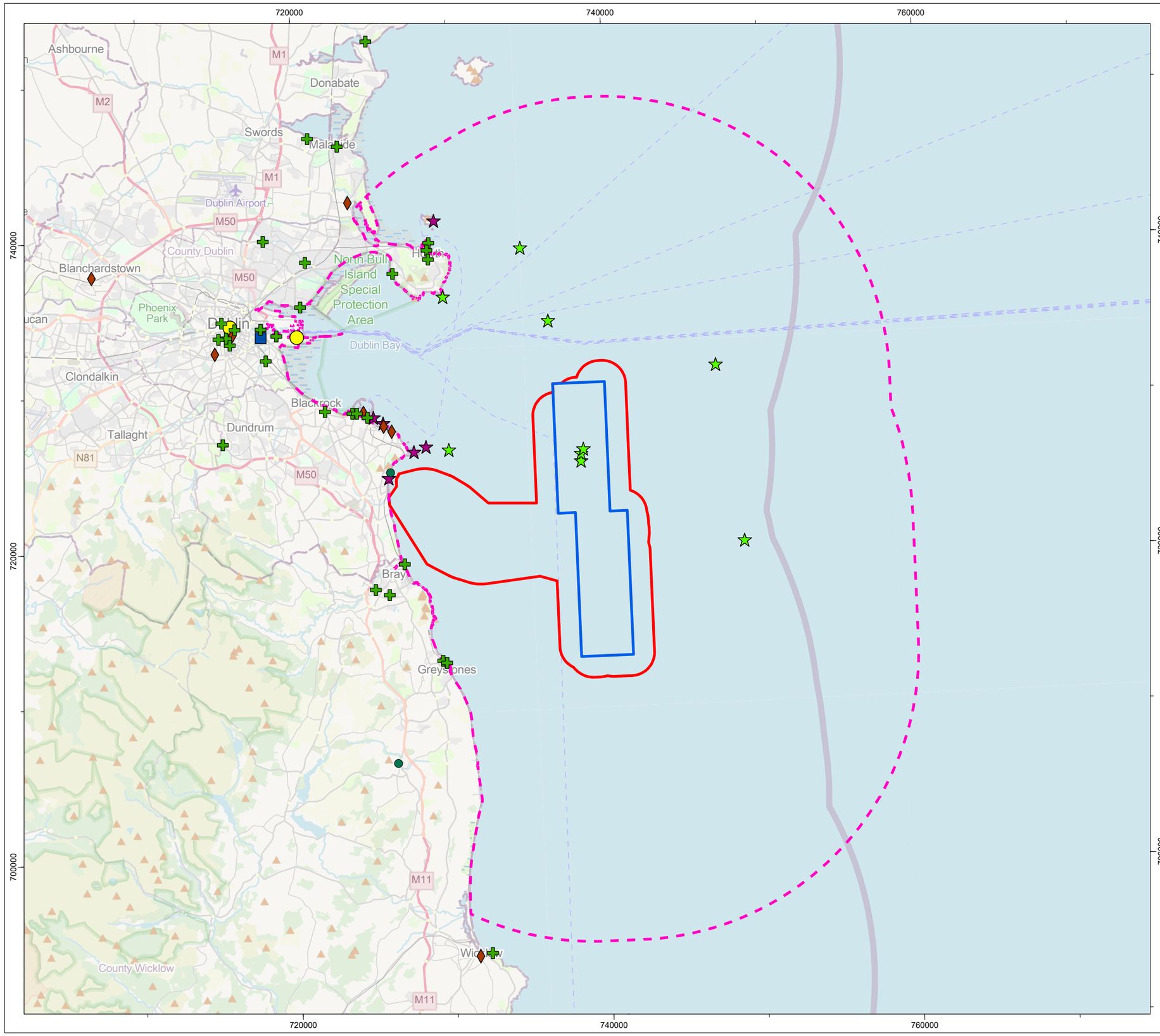
17.6.19 The waters of Dublin are home to a number of marine users including various independent water sports hire facilities which include stand up paddle boarding schools, marine sports facilities centres offering kitesurfing and rafting, and surf schools.

Protected areas

17.6.20 In 1981, UNESCO recognised the importance of Dublin Bay by designating North Bull Island as a biosphere[13] due to its rare and internationally important habitats and species of wildlife. To support sustainable development, UNESCO's concept of a Biosphere has evolved to include not just areas of ecological value but also the areas around them and the communities that live and work within these areas. In 2015 the biosphere was widened to encapsulate the whole of Dublin Bay.

17.6.21 Within Dublin Bay there are a number of Special Areas of Conservation (SAC), Special Protection Areas (SPA)[14] and a proposed natural heritage site (pNHA). Additionally, Bull Island is a significant National Nature Reserve (NNR) with an abundance of wildlife (Dublin Bay Biosphere Partnership, 2022) (see Volume 2, Chapter 8: Nature Conservation).

13 Biosphere: A biosphere is a region recognised by UNESCO for its exceptional natural habitats and biodiversity, which are of global significance. This designation highlights the area's value in terms of conservation and scientific research.
14 SAC: A protected area designated under the EU's Habitats Directive to conserve habitats and species of European Importance. SPA: A designated area under the EU Birds Directive to protect bird species and their habitat.



- Offshore Works Boundary
- Offshore Works Boundary 17 km Buffer
- Windfarm Area
- Marina
- Sailing Club
- Surfing Club
- Diving Club
- Windsurfing School
- Dive Site (Scenic)
- Dive Site (Wreck)

DRAWING STATUS

PUBLIC

DISCLAIMER

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PROJECT TITLE

Dublin Array

DRAWING TITLE

Socio-Economic: Offshore Recreation Baseline

DRAWING NUMBER: 5

PAGE NUMBER: 1 of 1

VER	DATE	REMARKS	DRAW	CHEK	APRD
01	2025-02-17	PUBLIC	JK	AB	AE

0 4 8 Kilometers

0 2 4 Miles

N GRID NORTH

SCALE 1:250,000 PLOT SIZE A3

DATUM WGS 1984 VERTICAL REF ODN/LAT/MLLW

PRJ WGS 1984 UTM Zone 29N

SLR

Dublin Array Generation for generations

Kish Offshore Wind Limited - Bray Offshore Wind Limited

Onshore Electrical System (OES) baseline

17.6.22 This section presents the baseline for the OES local study area (Figure 2). The onshore export cable route (ECR) will predominantly follow the local road network within the extent of the road carriageway or soft verge in publicly accessible areas. Some sections of the onshore ECR traverse privately owned agricultural lands. It should be noted that there are several areas of informal amenity spaces and woodlands in the OES local study area. With the exception of amenity space at Shanganagh (where the landfall installation compound will be located), these assets are scoped out of further assessment in the baseline as the construction works will not directly affect these areas.

Landfall

17.6.23 The landfall is proposed to be at Shanganagh Cliffs adjacent to the wastewater treatment plant at Shanganagh. Killiney beach is a lengthy stony beach that has views towards Bray and the Sugar Loaf Mountain. This is a popular location for tourists and local recreational users for its scenery, swimming and walking. The cable will pass underneath Shanganagh Community Gardens and Dublin Area Rapid Transit (DART) using trenchless techniques and then follow Bayview Crescent and Shanganagh Road.

17.6.24 The following assets are located within close proximity of the landfall and are located within the OES study area:

- Open space at Shanganagh around the proposed temporary construction works area at the TJB and either side of the DART railway; and
- Killiney and Shanganagh beaches: Characterised as linear open spaces and recreational feature of interest.

Sector 1

17.6.25 Sector 1 starts at the access road to the Uisce Éireann Shanganagh-Bray Waste Water Treatment Plant (WWTP) at Shanganagh Cliffs. The Clifton Park TCC will be established in the public greenspace bordered by Loughlinstown River to the west and the DART railway line to the east, supporting the onshore ECR construction phase. The Clifton Park TCC will serve as the launch pit for two trenchless crossings: one under the DART railway line and Shanganagh Community Gardens (TX-01), and another under Loughlinstown Stream (TX-02) into Bayview Crescent. The onshore ECR will then be installed within the road carriageway of Bayview Crescent using standard open-cut trenching techniques. At Bayview Glade, the onshore ECR will cross under the Shanganagh Road/Killiney Hill Road (R119) roundabout (TX-03), with the launch pit located in the green space to the west of the roundabout and the receiver pit in Bayview Glade.

17.6.26 The onshore ECR will proceed west, installed in the pedestrian path to the west of Shanganagh Road using open-cut trench techniques. Two joint bays are proposed in the grass verge between Aran Drive and Shanganagh Road, approximately 200 m north of the roundabout. The onshore ECR will then route west onto Achill Road, cross under the Kill O' the Grange Stream (TX-04), and continue west, progressing into Sector 2. See the Project Description Chapter for further details.

17.6.27 The following assets are located within close proximity of Sector 1 and are located within the OES study area:

- Shanganagh community gardens: The gardens have developed on backlands[15] formerly zoned for housing and are an example of a community gain from infrastructural development (adjoining Shanganagh Wastewater Treatment Works). The gardens were established in 2010 and extended in 2012. The Dún Laoghaire-Rathdown Green Infrastructure Strategy (DLRCC, 2015) sets out that the gardens have been highly successful in building social cohesion and in diminishing crime.
- Shanganagh Cliffs, playing pitches and playground: The open amenity ground is categorised as a local park and serves as a notable recreational feature. The playground offers climbing frame equipment and an open space basketball court for public use. To the south there is a football pitch used by soccer teams and Gaelic Athletic Association teams.
- Cycle infrastructure: A coastal cycle route crosses the OES local study area running to the east of the amenity ground. The coastal cycle route crossing Sector 1 at Shanganagh is a strategic route travelling through south Dublin and provides an important link in the coastal cycle network.

Achill Road to proposed onshore substation (Sectors 2-7)

17.6.28 Sector 2 runs from the Kill o' the Grange Stream in Loughlinstown Linear Park to Cherrywood Park, involving two joint bays and a trenchless crossing under the N11. Sector 3 extends from Cherrywood Park to Wyattville Road, with open-cut trenching and two joint bays. Sector 4 covers Wyattville Road to Beckett Road, including trenching, four joint bays, and a trenchless crossing under the M50. Sector 5 routes from Golf Lane to Old Glenamuck Road, involving open-cut trenching. Sector 6 runs from Glenamuck Road South to the Glenamuck District Distributor Road, featuring trenching and a trenchless crossing. Sector 7 extends from the GDDR to the Onshore Substation (OSS) at Jamestown, with trenching through fields, crossing two watercourses, and two joint bays near the substation.

15 Backlands: Land located behind or to the side of built-up areas, often underutilised or used for purposes such as access, storage, or expansion.

17.6.29 These sectors combine trenching and trenchless techniques for efficient cable installation. See the Project Description Chapter for further details. Attractions/facilities which tourists or people engaging in recreational activity may use/visit which are of note within the OES study area in and within proximity to Sectors 2-7 include:

- Giant's Tomb, Carrickmines: A portal tomb around 10 ft in height situated on the north bank of the Carrickmines River.
- The Carrickmines Golf Club: A golf course with views over Dublin Bay, the Hill of Howth and Bray Head.
- Loughlinstown Pitch & Putt Club: A members only pitch and putt golf club.

17.6.30 Leopardstown racecourse is approximately 1 km to the north of the cable corridor planning application boundary and is a significant attraction for visitors to the county. Many significant horse racing events are held here, with racing takes place all year round with up to 22 meetings per year. In 2019 Leopardstown racecourse was the most popular racecourse in Ireland with 175,000 visitors (Statista, n.d). In 2024, Leopardstown Racecourse continued to be a popular destination, hosting a total of 23 meetings throughout the year

17.6.31 There are numerous businesses located within the OES local study area focussed around several neighbourhood clusters. These businesses also serve visitors to the area. In addition, there are several areas of critical infrastructure within the local study area. Business clusters exist around the following areas:

- Loughlinstown Drive, Glenageary: Comprising of shops, food, drink and services such as hairdressers. The area also includes a leisure centre.
- Wyattville Road/Shanganagh Road/Military Road: A similar composition to Loughlinstown Drive, however without the leisure centre but including a funeral home.
- Churchview Road, Ballybrack: A neighbourhood centre comprising the Ballybrack Shopping Centre, serving a district function.
- Cherrywood Business Centre: A neighbourhood centre forming part of the Cherrywood SDZ serving residential properties and offices. Businesses comprise shops, food and drink, childcare facilities, a gym and several offices some of which house multinational brands.

17.6.32 In addition to the above clusters of businesses there are numerous single businesses located inside the OES local study area.

17.6.33 There are several areas of open space, gardens and amenity ground located within cable corridor. This includes an informal open space west of Shanganagh Road, adjacent to Ballybrack Dolmen, and areas on either side of the Deansgrange Stream to the west of Shanganagh Road. Additional recreational space includes:

- Glencar Park, Ballybrack: The park is south of the cable corridor and follows the path of the Kill-o-the-Grange Stream. It is located north of Loughlinstown Training Centre and Ballyowen Meadows Special School. The park is actively used by local residents having an important local function although has been subjected to vandalism.

- Kilbogget Park and Ashlawn Park: Kilbogget park is identified as a District Park as it caters to the needs of a number of neighbourhoods. The park offers a wide variety of uses and facilities which provides amenity for active and passive recreation. Active facilities include playing pitches, running track and playground areas. Several sporting clubs use the park (see community facilities below). The park is also part of a Green Infrastructure Corridor. The park also features areas of biodiversity. Kilbogget Park is entirely located outside the OES study area but is joined to Ashlawn Park, part of which is located within the OES study area. Ashlawn Park has tennis courts located outside of the OES study area and an area of green space to the east of Ballybrack Boxing Club located within the OES study area.

- Three additional local parks are located within the OES study area, to the east of the M50 within sector 4; Tully Park, Beckett Park and Lehaunstown Park.

- Proposed Greenway and surrounding open space through Cherrywood Strategic Development Zone (SDZ): The greenway and its associated walkway/cycleways are part of a major non-motorised public access network which when finished will extend throughout the Cherrywood SDZ area connecting new residential areas with existing communities. The northern and western sections of the greenway run alongside the Carrickmines and Cabinteely streams respectively are located on privately owned lands with no public access currently possible. However, in the southern area known as 'The Ramparts', public access is available via a combination of formal and informal footpaths. The open spaces through which the proposed Greenway passes form part of a green wedge, serving as a buffer between Cherrywood's planned development areas of Cherrywood and existing communities along the N11 and Brennanstown Road.

- Cycle infrastructure: There is an existing network of cycling routes within and in close proximity to the onshore cable corridor. The cycle network includes an existing green infrastructure network within the cable corridor that begins at Shanganagh Road and runs through the green areas at Glenavon Park, north of Ballowen Meadows Special School and Loughlinstown Training centre, across Ashlawn Park, and into Kilbogget Park. This continues towards and past Johnstown Road and continues to Dún Laoghaire Industrial Estate. Another cycle route of note is the proposed Greenway through Cherrywood Proposed Greenway and surrounding open space through Cherrywood Development Zone. Once complete it will link Cherrywood with surrounding neighbourhoods and act as an off-road link between the N11 and Carrickmines.

- There are several other areas of amenity ground and open space recreational land, including the Cabinteely Regional Park. These are scoped out of further assessment as the construction works will not directly affect these areas.

17.6.1 There are several schools located in the OES local study area in close proximity to Sectors 2-7:

- St. Columbanus School is located on Loughlinstown Drive, Ballybrack and comprises a mixed primary school accessed via Aran Avenue and Loughlinstown Drive. It is open during normal school hours with approximately 110 pupils enrolled. Springboard Family Support located at the school provides support services to children, young people and parents.

- Gaelscoil Phadraig is located on Glencarr Lawn, in Ballybrack. The school is a mixed, catholic ethos, primary school under the patronage of An Foras Pátrúnachta. It is accessed via Sheelin Avenue, and it is open during normal school hours with approximately 150 pupils enrolled.

- Ballyowen Meadows Special School is located on Loughlinstown Drive, Ballybrack. It is a Special School which provides teaching and learning within an autism specific environment to pupils with a wide spectrum of needs and abilities. In addition, Ballyowen Meadows Special School provides a Department of Education and Skills approved Early Intervention Pre-School Class for children with a diagnosis of autism and who are aged between 3 and 5 years.

- St Laurence College is a secondary school located off Wyattville Park to the south of the onshore cable corridor. The secondary school has approximately 300 pupils and is co-educational. It is the only Marianist school in Ireland.

17.6.2 There are various small childcare businesses operating in the OES local study area. Unlike the aforementioned schools they do not attract large volumes of vehicular and pedestrian traffic at drop off/pick up times. However, the Park Academy Childcare on Western Courtyard in Cherrywood is accessed via a road within the ECR. Therefore, construction works associated with the ECR may result in provisions being needed to maintain access to these childcare premises.

17.6.3 Two places of worship have been identified within the OES local study area: the Church of Saint Columbanus (to the north of Sector 2) and Tullow Parish Church (to the east of sector 4).

17.6.4 There are a number of health care services in the OES local study area, within 500 m of the OES:

- An Health Service Executive (HSE) clinic on Loughlinstown Drive. The clinic houses a Barnardo's centre;

- St. Columcille's Hospital;

- A medical centre, including dental clinic in Cherrywood Business Park;

- An HSE clinic located at Leopardstown Valley Shopping Centre (early years); and
- Several health care services located around Wyattville Road/Church Road/Ballybrack.

17.6.5 There are several community clubs operating in the OES (or slightly outside the OES for clubs at Kilbogget Park):

- Community centres:
  - Loughlinstown Community Rooms: Located on Loughlinstown Drive, this centre provides quality activities and services that contribute to the physical, mental, emotional, and social well-being of the community.
  - Tullyvale Leisure Centre: A small leisure centre located in Cherrywood.
- Sports clubs:
  - Ballybrack Football Club and Boxing Club – Located in Kilbogget Park, these clubs serve various neighbourhoods in the surrounding area. The football club has a full-size all-weather pitch adjacent to the cable corridor.
  - Cabinteely Football Club, Seapoint Rugby Club, and Foxrock Cabinteely Gaelic Athletic Association Club: These clubs play on the Kilbogget playing fields to the north of the cable corridor.
  - Carrickmines Croquet and Lawn Tennis Club: Located on Glenamuck Road, Carrickmines.
- Community Groups:
  - Coolevin Scout Den and Coolevin/Ballybrack Project Centre: Both located in Coolevin, Ballybrack to the north of the cable corridor.
- Other notable locations:
  - Egyptian Embassy: Located on Brennanstown Road to the north of the cable corridor.
  - Eurofound: A European Union (EU) Agency located on Wyattville Road, Loughlinstown. It aims to improve the living and working conditions of EU citizens by providing knowledge to assist in the development of better social, employment, and work-related policies.

Proposed onshore substation and connection to Carrickmines substation

17.6.6 The OSS for the Dublin Array will be located at Ballyogan, adjacent to the existing Carrickmines substation. This substation will be connected to the existing Carrickmines substation via underground transmission circuits. The substation is situated in a developed area with a mix of residential, commercial, and recreational spaces.

17.6.7 Tourism, recreational and social and community infrastructure receptors at Carrickmines include:

- Carrickmines Park retail park: A busy regional centre, with wide range of major retail brands and offices. The centre is an out-of-town shopping centre comprising extensive areas of car park and has easy access on to the M50 motorway. Whilst the Park is considered to be a Regional Centre it serves a key function in Dublin's retail offer.

- GoQuest: An indoor adventure and challenge arena located in Carrickmines, adjacent to the Carrickmines Business Park. GoQuest hosts up to 100 people at a time and offers a variety of activities and challenges.

- Ballyogan Business Park: A district centre business park with a range of businesses.

- Proposed Jamestown Park at Ballyogan Landfill site: The Ballyogan landfill is situated in south Dublin, approximately 7 km west of Dún Laoghaire. OSS is located in the boundary of the former landfill site. The surrounding area is characterised by a mixture of agricultural, recreational, residential, commercial and industrial land use. The site is approximately 59.5 ha, 43 ha of which were previously used for landfilling, 7.5 ha consists of the site entrance and service roads, site compound, constructed wetland and other services. The Ballyogan Recycling Park occupies a further 9 hectares. There are proposals to develop a new community park for the Stepaside/Kilternan/Ballyogan area following remediation of the former landfill site at Ballyogan. The lands will be gradually developed on an incremental basis (see phases in sub bullet points below). The opening date will depend on the completion of works and the necessary environmental safety approvals. Once complete the park will serve several neighbourhoods and will therefore provide a district function. A design has been prepared detailing the restoration and aftercare works to be conducted at the Ballyogan Landfill to transform the former landfill into Jamestown Park.

  This was prepared by Fehily Timoney consultants for Dún Laoghaire-Rathdown County Council in 2024 (Dún Laoghaire-Rathdown County Council, 2024).

  - Phase 1 – Cycle pathways, connection between the Cruagh greenway and Carrickmines retail park, connection between the Samuel Beckett Campus to Enniskerry Road, development of park's primary entrances – Cruagh Greenway (west), Carrickmines Retail Park (east), Enniskerry Road (south) and Ballyogan Road (north), landscaping of landfill area, fencing, services and agricultural zones.

- Phase 2 – Wheel chair accessible route, amenity features at discrete locations, including but not limited to information boards, amenity seating, play areas with artificial rocks and dog exercise areas and water features.
- Phase 3 – Screened carpark, hiking trails, amenity features at discrete locations, including but not limited to pump tracks, BMX or similar, technology area demonstrating low carbon site attributes (e.g. using landfill gas to power light, photovoltaic panels or wind turbines), visitor centre.

- Stepaside Golf Course**:** The golf course is located south-west of the proposed substation at Carrickmines. The golf course is a locally important, it provides local amenity and recreational access for many local residents as well as providing recreational opportunities for visitors to the area.
- The Samuel Beckett Civic Campus: A multi-purpose public complex located along Ballyogan Road. The campus spans 18 acres and includes a variety of facilities such as a library and community building, multi-purpose sports building featuring a sports hall, swimming pool, dance studios, and gym with outdoor grass and artificial sports pitches, a skate area, children's playground, and recreational pathways. The campus is designed with sustainability in mind, incorporating natural daylighting, ventilation strategies, and the use of natural materials like wood. It also features photovoltaic cells and wind turbines to harness renewable energy.
- Stepaside Educate Together Secondary School: Stepaside Educate Together Secondary School is an innovative and inclusive school located in Leopardstown.
- Gaelscoil Shliabh Rua: A multi-denominational Gaelscoil located on Ballyogan Road to the north of cable corridor. It has a current enrolment of around 300 pupils and is accessed from Ballyogan Road.
- Ballyogan Community Centre and Family Resource Centre: Both located on Ballyogan Road to the north of the Cable Corridor. The campus of buildings also a number of other community uses including a Barnardos family support centre, a childcare provider, a gym and the office of the community development group.

17.7 Defining the sensitivity of the baseline

17.7.1 The sensitivity for the receptors for each potential effect, using the criteria outlined in section 17.4, are presented in sections 17.12 to 17.15.

17.8 Uncertainties and technical difficulties encountered

Socio-economics

17.8.1 It should be noted that data sets used in the baseline assessment of the existing environment are often updated on an annual or more frequent (e.g. quarterly or monthly) basis.

17.8.2 Socio-economic data available as of the end of 2023 has been used in the preparation of the baseline for the existing socio-economic environment. There is often a lag in the publication of some socio-economic datasets, meaning the most recent data available may often be one or two years out of date. Data published by the Central Statistics Office (CSO) often has a one to two-year lag but is still the most recent data for demographic and employment by sector related data. In this case the latest demographics and employment by sector data available is from 2022. These data limitations do not have a material effect on the predictability or accuracy of the impact assessment presented in this chapter.

17.8.3 To measure the impact of Dublin Array, GVA and employment data are disaggregated. However, there are challenges with disaggregating this data by sector to accurately measure the impact of Dublin Array within the renewable energy sector and the wider economy. The data is available at a broad industry/sector level using the NACE sector classification system[16], which does not easily define a renewable energy sector, especially at a level below the national scale.

17.8.4 It should be noted that due to the early stage of the project and the offshore wind sector market in its early-stage infancy in Ireland there is a still some uncertainty over the following assumptions:

- Capacity of wind farm – The expected energy output will be from 750 to 824 MW as the final turbine electrical generating capacity for each turbine is currently unconfirmed. Due to this uncertainty a range has been assessed.
- Development and capital costs – The costs used for the assessment are best estimates and based on industry data and project specific knowledge.
- Choice of ports for construction – The ports to be used for the construction ports has yet to been finalised. The port and base for O&M will be located at Dún Laoghaire Harbour.

16 NACE (Nomenclature statistique des activités économiques dans la Communauté européenne) is the industry standard classification system used in the European Union for collecting and presenting statistical data according to economic activity. It uses a hierarchical structure with four levels: sections, divisions, groups, and classes.

- Retention of expenditure – The level of expenditure retained within the study areas (i.e. the amount of money spent on the project staying within the local economy) are estimates based on industry knowledge, expertise of the geographical areas, future project locations, and publicly available evidence on the potential of the development of the sector in the Republic of Ireland.
- As detailed in the Project Description Chapter, the Applicant is seeking development permission for three design options in line with the Opinion on Flexibility. As a result, the number, capacity and the size of the turbines chosen may be one of three potential options; Option A (50 WTGs), Option B (45 WTGs) and Option C (39 WTGs).

17.8.1 Regarding the core economic benefits, the direct impacts have the highest level of certainty, while indirect and induced carry greater levels of uncertainty.

17.8.2 Commercial Fisheries Chapter (and Volume 4, Appendix 4.3.9-1: Commercial Fisheries Technical Baseline) has been drawn on heavily for baseline data on the fishing economy. Acknowledging that there is limitations in data availability of the fishing industry, which limits to the assessment. This is particularly the case in terms of defining the proportion of the value of the fishing industry which is potentially impacted by construction activity within Dublin Array's offshore project boundary.

Tourism and recreation

17.8.3 A summary of tourism perception of OWFs is presented in section 17.6. It should be noted that there is a varied quality of literature and evidence available on the impact of offshore wind on tourism economies. Evidence which is regarded to be based on weak methodologies are not considered in the assessment. More weight is placed on studies which are Irish and UK based and have robust methodologies. It should be noted that the best evidence is typically found in studies of existing OWFs rather than those prior to consenting/construction.

17.8.4 Publicly available information has been used in the preparation of the baseline of the existing tourism and recreation environment within the relevant study areas. Additionally, there are data limitations that should be kept in consideration, as highlighted below, but these limitations are not expected to have a material effect on the predictability or accuracy of the impact assessment.

17.8.5 There is limited data on volume and value of tourism at the Irish sub regional level. However, there is a reasonable level of data available at the national and Dublin region level, while some national data is only available at the Island of Ireland level.

17.8.6 An important caveat to a tourism and recreation assessment is the inability to fully predict the recovery trajectory of the local tourism sector. The visitor economy experienced an unprecedented shock during the Covid-19 pandemic, with the Travel and Tourism sector's visitor number in the Republic of Ireland falling from 18,771,100 in 2019 to only 4,295,800 in 2020, a fall of 77.1% in only one year.

17.8.7 Visitor numbers have been increasing since the pandemic, however, there remains uncertainty surrounding the changes in visiting patterns and the trend back towards pre-pandemic levels given recent geo-political events and economic shocks (Irish Tourism Industry Confederation, 2023).

17.8.8 Similarly, the effect the pandemic has had on patterns and quantities of outdoor recreation and whether these changes will persist in the long-term is even more unclear. A survey was conducted by CSO to better understand people's relationship with the outdoors. Respondents were asked about the time they spent and the activities they engaged with in the outdoors, and whether the time they spend outdoors has changed since the pandemic (CSO, 2022b). The majority of respondents (55%) reported spending more time outdoors since the start of the COVID-19 pandemic, with around 30% of respondents reported to have taken up new outdoor activities since the start of the Covid-19 pandemic. The most popular activities taken up were hill walking (26%), hiking (24%), running (24%), cycling (22%), and sea swimming (21%).

17.8.9 This increase in the popularity of outdoor recreation activities translated into a large spike in the use of parks and public green space when restrictions lifted for the first time, as well as an increased use of rural and coastal areas compared with pre pandemic usage. With increasing levels of homeworking and increased value placed on nature and the outdoors the assumption for this assessment is that in the post pandemic world recreation is just as, if not more important than ever.

17.8.10 As is common when considering a local network of access and recreation resources, there is no quantitative data available for usage of most public footpaths and open spaces.

17.9 Scope of the assessment

Scoped in

17.9.1 The following impacts have been scoped into the assessment:

- Construction:
  - Impact 1: Economic value arising from construction;
  - Impact 2: Employment arising from construction;
  - Impact 3: Impact on the volume and value of the visitor economy as a result of construction of offshore infrastructure;
  - Impact 4: Impact on enjoyment of marine and coastal recreational and visitor assets[17] arising from construction of offshore infrastructure;

17 Visitor assets refer to the tangible and intangible elements that attract tourists to a specific area. These assets can include: Natural Attractions: Beaches, cliffs, marine reserves, and other coastal features.

- Impact 5: Wider economic impacts from disruptions to commercial fishing during the construction phase;
- Impact 6: Impact of the onshore electrical system on local recreation and tourism; and
- Impact 7: Impact of the onshore electrical system on local social community infrastructure receptors.

- Operation and maintenance:
  - Impact 8: Economic value arising from operation;
  - Impact 9: Employment arising from operation;
  - Impact 10: Impact on the volume and value of the visitor economy from the operation of offshore infrastructure;
  - Impact 11: Impact on enjoyment of marine and coastal recreational and visitor assets arising from operation of offshore infrastructure; and
  - Impact 12: Wider economic impacts from disruptions to commercial fishing during the operational phase.
- Decommissioning:
  - Impact 13: Economic value arising from decommissioning of offshore infrastructure;
  - Impact 14: Employment arising from decommissioning of offshore infrastructure;
  - Impact 15: Impact on the volume and value of the visitor economy arising from decommissioning of offshore infrastructure;
  - Impact 16: Impact on enjoyment of recreational and visitor assets arising from decommissioning of the proposed development (offshore infrastructure);
  - Impact 17: Wider economic impacts from disruptions to commercial fishing industry during the decommissioning phase;
  - Impact 18: Impact of the onshore electrical system on local recreation and tourism; and

Cultural and Historical Sites: Museums, heritage sites, and landmarks.
Recreational Facilities: Parks, trails, and water sports facilities.
Accommodation and Hospitality Services: Hotels, restaurants, and other services catering to tourists.
Events and Activities: Festivals, guided tours, and other organized activities

- Impact 19: Impact of the onshore electrical system on local social community infrastructure receptors.

Scoped out from further evaluation in this EIAR

17.9.2 The following impacts are scoped out from any further evaluation in the assessment:

- Socio-economic impacts associated with an influx of workers to Greater Dublin:
  - Socio-economic impacts from increased demand for education services – based on the usual practices in the construction industry it is assumed that non-local construction workers are generally do not bring their families with them when moving temporarily for work. During the operational phase there could be a small increase in school aged children associated with people moving to Greater Dublin to work on the operation of Dublin Array. However, the scale of workers will be limited in the context of the Greater Dublin economy (approximately 70-80 direct FTEs and a total of 200-240 FTE direct, indirect and induced jobs will be created per annum during the operational phase, as is set out in Annex C). In addition, these workers are likely to be relatively dispersed across the Greater Dublin and so are likely to be more easily accommodated in local schools nearby their place of residence and not all workers will have children.
  - Socio-economic impacts from increased pressure on housing – as during the construction phase it is assumed that workers based locally will primarily be accommodated in visitor accommodation or they will be a resident of Greater Dublin. Offshore workers will be accommodated on the vessels and work on a shift rotation. During the operational phase some of the workforce may move into Greater Dublin on a permanent basis and therefore will increase demand for housing in Greater Dublin, however the Greater Dublin area has a very large housing stock (around 650,000 dwellings) which is able to easily accommodate these workers.
  - Socio-economic impacts from demand for health and emergency infrastructure – The offshore construction workforce is anticipated to be accommodated in accommodation vessels offshore and therefore they are assumed to place no demands on public health and emergency services. Whilst some jobs may be taken by local residents, during the operational phase a proportion of the workforce may move into Greater Dublin on a permanent basis.
  - However, it is anticipated that due to the scale of this workforce any increases in pressure on public services (e.g. healthcare) are anticipated to be very limited. As a worst case, a proportion of the onshore workforce are anticipated to originate from outside of Greater Dublin.

Based on information within the Project Description Chapter, the largest concentration of construction staff will be at the OSS site, and this will peak at later stages of the construction programme when it is likely that there will be up to approximately 75 staff on site. It is assumed most of these workers will be from within a 1-hour travel time and therefore not contribute to additional demand for health and emergency services. In addition to this, migrant onshore workers are anticipated to have limited impacts on local demand for health and emergency infrastructure as generally construction workers will be of working age, fit and healthy. They will be unlikely to register with local health care services with a preference to undertake routine visits to healthcare services at their registered address in their location of residence. Due to the scale of the construction workforce, there are likely to be very minor impacts on accident and emergency provided by hospitals or the local police force An Garda Síochána.

- Reduction in availability of accommodation and subsequent displacement of tourists – Across Ireland, hotel occupancy levels in 2023 were at 65% (Fáilte Ireland, 2024). Should there be a high level of demand for accommodation from construction workers and high level of occupancy at the same time as demand spikes this risks displacement of tourists and the loss of value associated with displaced visits. The offshore workforce is assumed to be accommodated in accommodation support vessels (or sometimes referred to as Service Operation Vessels) offshore and therefore expected place no demand on accommodation. Any non-local onshore workers will likely to be easily accommodated in local accommodation. During off peak seasons this can provide an additional boost to the visitor accommodation sector.

- Wider economic impacts from disruptions to shipping – ships are assumed to be able to reroute if needed. The Shipping and Navigation Chapter states that commercial vessels already avoid the shallow waters of the Kish and Bray Banks, where the wind farm will be located, resulting in only minor deviations required to avoid the array area. Additionally, during construction, advisory safe passing distances and the use of guard vessels will ensure the safety of both project and third-party vessels, with these areas being temporary and limited in scope. In the operational phase, the WTGs will be marked on nautical charts, allowing vessels to plan their routes without significant deviations. There is therefore very limited potential for economic impacts related to disruptions to shipping.

- Impacts on social community infrastructure, recreation and tourism from repair and maintenance to the OES during the operational phase – the level of repair and maintenance work undertaken will be relatively limited and therefore potential for impacts is much lower than the construction phase.

Sensitive receptors

17.9.3 Table 20 identifies the receptors which will be evaluated in the assessment.

Table 20 Potential impacts and receptors

Impacts	Receptors	Phases Assessed
▪ Impacts on economic value	▪ GVA	▪ Construction ▪ Operations ▪ Decommissioning
▪ Impacts on employment	▪ Jobs	▪ Construction ▪ Operations ▪ Decommissioning
▪ Impacts on visitor economy	▪ Volume and value of visitors	▪ Construction ▪ Operations ▪ Decommissioning
▪ Impacts on enjoyment of marine and coastal recreation and visitor assets	▪ Users of recreational and visitor assets	▪ Construction ▪ Operations ▪ Decommissioning
▪ Wider economic effects due to disruption to commercial fisheries	▪ GVA and jobs within the commercial fishing industry and its supply chains	▪ Construction ▪ Operations ▪ Decommissioning
▪ Impact of the onshore electrical system on local recreation and tourism receptors	▪ Users of recreation and tourism assets ▪ Businesses and organisations offering services related to tourism and recreation	▪ Construction ▪ Decommissioning
▪ Impact of the onshore electrical system on local social community infrastructure receptors	▪ Organisations providing social community infrastructure ▪ Users of social community infrastructure	▪ Construction ▪ Decommissioning

17.10 Key parameters for assessment

17.10.1 Flexibility is being sought in the Opinion for An Bord Pleanála on certain aspects of the offshore infrastructure design, as detailed in the Project Description Chapter. This flexibility pertains to specific components of the offshore infrastructure such as WTG (model, dimensions, and number), offshore substation platform (dimensions), array layout, foundation type (WTG and OSP; types and dimensions and scour protection techniques), and offshore cables (length and layout).

17.10.2 To ensure a robust and transparent assessment compliant with the Opinion on Flexibility under section 287B, Maximum Design Options (MDO) and alternative design options (ADO) have been defined within the offshore assessment chapters. This approach provides certainty that any option within the range of parameters will not result in a greater impact than the MDO. In addition to these flexible components, confirmed design details and normal construction practices are also assessed within the EIAR. For elements where flexibility is not sought, such as trenchless cable installation at the landfall, and the onshore infrastructure, the MDO and ADO are the same and therefore key project design parameters are defined for the onshore components.

17.10.3 As the socio-economic assessment considers the Dublin Array project as a whole, both onshore and offshore, in a single chapter, a separate MDO and ADO has not been defined for all impacts. Table 21 details where an MDO and ADO have been defined or where a single project-wide assessment has been undertaken for defined key project design parameters.

17.10.1 It should be noted that the socio-economic assessment also considers positive impacts on the economy (jobs and GVA) and as such a range of parameters are presented and conservative assumptions have been utilised (which are set out in section 17.4). This approach differs from other chapters in the EIAR as rather than assessing the maximum impact a realistic impact scenario is assessed based on conservative assumptions.

Table 21 Maximum and alternative design options

Potential impact	Maximum design option	Alternative design options	Justification
Construction			
Economic Impacts Impact 1: Economic value Impact 2: Employment	Economic impacts are included as the construction of the wind farm will generate employment opportunities, support local businesses through supply chain demand, and contribute to regional economic development. The project design elements for which flexibility is being sought are expected to have negligible difference to any potential impacts on the economic value and employment during the construction phase. Therefore, a single project-wide assessment is sufficient to capture the overall potential impacts accurately.		Rather than assessing the maximum impact a realistic impact scenario is assessed based on conservative assumptions.
Visual Impacts Impact 3: Visitor economy Impact 4: Enjoyment of tourism and recreation assets	The project design elements for which flexibility is being sought are expected to have negligible difference to any potential impacts on the economic value and employment during the construction phase. Therefore, a single project-wide assessment is sufficient to capture the overall potential impacts accurately.		Research indicates that OWFs generally have negligible impacts on tourism, visitor enjoyment, and recreational activities. Any potential effects are not expected to materially change between the design flexibility options for the Dublin Array.
Impacts offshore Impact 4: Enjoyment of tourism and recreation assets	The project design elements for which flexibility is being sought are expected to have negligible difference to any potential impacts on the economic value and employment during the construction phase. Therefore, a single project-wide assessment is sufficient to capture the overall potential impacts accurately.		
Impact 5: Wider economic impacts on commercial fishing	MDO is as per the MDO presented in Table 8 of the Commercial Fisheries Chapter (Impact 1 and Impact 2). Option A: 50 wind WTGs.	ADO is as per the ADO presented in Table 8 of the Commercial Fisheries Chapter (Impact 1 and Impact 2). Option B: 45 WTGs and Option C: 39 WTGs.	Economic impacts on commercial fishing are closely tied to the impacts assessed in the Commercial Fisheries Chapter and therefore the MDO used in the Commercial Fisheries Chapter is replicated for this impact. The MDO represents the maximum duration and the maximum extent of fishing exclusion throughout

Potential impact	Maximum design option	Alternative design options	Justification
	Maximum duration for construction (30 months) and the maximum extent of fishing exclusion throughout the construction phase.	Alternative durations for construction (18-24 months) and alternative extents of fishing exclusion throughout the construction phase.	the construction phase and hence the greatest potential to restrict access to fishing grounds. It is important to note that the temporal aspect of temporary works will not apply in full throughout the 30-month offshore construction phase, as activities will be completed sequentially. The alternative design options (or any other option within the range of parameters set out in the Project Description Chapter) will not give rise to an effect which is more significant than the MDO.
Impact 6 & 7: Impact of the onshore electrical system on tourism, recreation and social and community infrastructure receptors	The onshore infrastructure design assumptions used in the EIA are set out in the Project Description Chapter.		The assessment has been based on the maximum footprint and areas of temporary and permanent infrastructure which will be required. Full details are provided in the Project Description Chapter.
Operation and maintenance			
Economic Impacts Impact 8: Economic value Impact 9: Employment	A single project-wide assessment has been undertaken to capture the overall potential impacts accurately.		The project design elements for which flexibility is being sought are expected to have negligible difference to any potential impacts on the economic value and employment during the operation and maintenance phase. Therefore, a single project-wide assessment is sufficient to capture the overall potential impacts accurately. Rather than assessing the maximum impact a realistic impact scenario is assessed based on conservative assumptions.
Impact 10: Visitor economy	The MDO is as per the MDO presented in Impact 4 and Impact 5 of the SLVIA Chapter.	The ADO is as per the MDO presented in the SLVIA Chapter.	Three WTG layouts have been considered in order to establish the MDO. The WTGs in all three layouts will be spaced out to maximise the array area such

Potential impact	Maximum design option	Alternative design options	Justification
& Impact 11: Enjoyment of marine and coastal tourism and recreation assets	Option C: 39 WTG; maximum blade tip height 309.6 m LAT. 1 x offshore substation platform. Three times per day CTV trips with the addition of up to 100 vessels trips to support scheduled routine and non-routine maintenance per year.	Option A: 50 WTG; maximum blade tip height 267.6 m LAT. Option B: 45 WTG; maximum blade tip height 281.6 m LAT. 1 x offshore substation platform. Two times per day daily CTV trips with the addition of up to 75 vessels trips to support scheduled routine and non-routine maintenance.	that there will be little difference in terms of the horizontal extent that the WTGs will occupy when seen from surrounding receptors. While the 50 WTGS at a height of 267.6 m LAT to blade tip present a slightly denser appearance, the more notable vertical elevation will be the greater height of the 39 WTGs at a height of 309.6 m LAT to blade tip, which will be 42 m taller and overall will present the MDO.
Impact 12: Wider economic impacts on commercial fishing	MDO is as per the MDO presented for Impact 6 of the Commercial Fisheries Chapter (Table 8). Option A: Up to 50 WTGs. Advisory safe passing distances of 500 m around all active maintenance works = 0.79 km^2 per vessel or structure. Foundation: Multileg foundations.	ADO is as per the ADO presented for Impact 6 of the Commercial Fisheries Chapter (Table 8). Option B: up to 45 WTGs and Option C: up to 39 WTGs. No advisory safe passing distances used. Foundation: monopile.	The MDO represents the maximum extent of fishing exclusion throughout the operation and maintenance phase and hence the greatest potential to restrict access to fishing grounds. Plus maintenance activities throughout the operational and maintenance phase and associated temporary advisory safe passing distances. The smaller the spacing between WTGs the greater the potential for vessels to have restricted access to the site. The minimum burial depth represents the MDO due to risk of interaction with penetrative fishing gear. The assessment assumes that fishing will be restricted within advisory safe passing distances

Potential impact	Maximum design option	Alternative design options	Justification
	Minimum spacing between turbines of 944 m. Minimum burial depth in standard conditions: 0.6 m.	Minimum spacing between turbines of 1,000 m (Option B) or 1,112 m (Option C). Maximum burial depth in standard conditions: 3 m.	around infrastructure undergoing major maintenance or replacement. Furthermore, the individual decisions made by skippers with their own perception of risk will determine the likelihood of whether their fishing will resume within Dublin Array. Inclement weather will be a significant contributor to this risk perception. The alternative design options (or any other option within the range of parameters set out in the project description) will not give rise to an effect which is more significant than the maximum design option.
Decommissioning			
Economic Impacts Impact 13: Economic value Impact 14: Employment	The project design elements for which flexibility is being sought are expected to have negligible difference to any potential impacts on the economic value and employment during the construction phase. Therefore, a single project-wide assessment is sufficient to capture the overall potential impacts accurately.		The Decommissioning and Restoration Plan outlines the rehabilitation of affected maritime and onshore areas based on current scientific and technical knowledge. Due to uncertainty around the proposed approach, costs and therefore socio-economic, tourism, recreation and land use impacts during the decommissioning phase, this has been assessed qualitatively.
Visual Impacts Impact 15: Visitor economy Impact 16: Enjoyment of tourism and recreation assets	The project design elements for which flexibility is being sought are expected to have negligible difference to any potential impacts on the economic value and employment during the construction phase. Therefore, a single project-wide assessment is sufficient to capture the overall potential impacts accurately.		Research indicates that OWFs generally have negligible impacts on tourism, visitor enjoyment, and recreational activities. Any potential effects are not expected to materially change between the design flexibility options for the Dublin Array.

Potential impact	Maximum design option	Alternative design options	Justification
Impact 17: Wider economic impacts from disruptions to commercial fishing industry during the decommissioning phase.	MDO is as per the MDO presented in Table 8 of the Commercial Fisheries Chapter (Impact 12). Option A: 50 wind WTGs. Decommissioning activities lasting approximately three years for both onshore and offshore works.	ADO is as per the ADO presented in Table 8 of the Commercial Fisheries Chapter (Impact 12). Option B: 45 WTGs and Option C: 39 WTGs. Decommissioning activities lasting approximately three years for both onshore and offshore works.	Economic impacts on commercial fishing are closely tied to the impacts assessed in the Commercial Fisheries Chapter and therefore the MDO used in the Commercial Fisheries Chapter is replicated for this impact, which is Option A, with the greatest number of WTGs (50). The alternative design options (or any other option within the range of parameters set out in the Project Description Chapter) will not give rise to an effect which is more significant than the MDO.
Impact 18: Impact of the onshore electrical system on local recreation and tourism.	The onshore infrastructure design assumptions used in the EIA are set out in the Project Description Chapter.		The assessment has been based on the maximum footprint and areas of temporary and permanent infrastructure which will be required. Full details are provided in the Project Description Chapter.

17.11 Project Design Features, and Avoidance and Preventative Measures

17.11.1 As outlined within the EIA Methodology Chapter (Volume 2, Chapter 3) and in accordance with the EPA Guidelines (2022), this EIAR describes the following:

- Project Design Features: These are features of the Dublin Array project that were selected as part of the iterative design process, which are demonstrated to avoid and prevent potential adverse effects on the environment in relation to Socio-economics, tourism, recreation and land use. These are presented within Table 22.
- Other Avoidance and Preventative Measures: These are measures that 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 in 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 development consent is being sought. These measures are distinct from design features and are found within our suite of management plans. These are also presented within Table 22.
- Additional Mitigation: These are measures that were introduced to the Dublin Array project after a likely significant effect was identified during the EIA assessment process. These measures either mitigate against the identified significant adverse effect or reduce the significance of the residual effect on the environment.

17.11.2 Environmental aspects and other options relating to Dublin Array are detailed within Volume 2, Chapter 5: Consideration of Alternatives. Project design features relevant to the socio-economic, tourism, recreation and land use assessment relates to site selection and the iterative design of the layout. The offshore WTGs of Dublin Array will be located a minimum distance of approximately 10 km off the eastern coast of the County Dublin and County Wicklow. The location has been largely determined by the presence of sand banks and shallow waters in this location which present a major technical advantage in terms of the construction of the offshore infrastructure through shallow water depth, minimising interference with shipping/navigation channels and proximity to the national electricity grid. All measures are secured within Volume 8 Schedule of Commitments.

Table 22 Project design features relating to socio-economics, tourism, recreation and land use

Project design feature/other avoidance and preventative measure	Where secured
Notices will be issued to prescribed bodies, local diving groups, mariners, fishers, and other relevant sea users to inform them of construction activities, locations, and expected durations. Public access and safety will be prioritised through clear communication and engagement with the local community to address any concerns.	Project Description Chapter.
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. This may reduce potential impacts on several offshore recreation receptors.	Volume 7, Appendix 6: Dublin Array Offshore Wind Farm Vessel Management Plan.
Advisory safe passing distances will be utilised around vessels engaged in sensitive construction, installation, or maintenance operations to ensure the safety of both project and third-party vessels. These distances will indicatively be 500 m around active works and 50 m around infrastructure.	Shipping and Navigation Chapter.
Volume 7, Appendix 3: Fisheries Mitigation and Management Strategy (FMMS) sets out the approach to fisheries liaison, including an outline of the measures proposed to be implemented to facilitate coexistence with commercial fishing activities. The FMMS outlines the Applicant's approach to liaison with the fishing industry representatives and fishers. The Applicant is committed to ongoing liaison with fishers throughout all stages of the project, including: ▪ A company FLO to maintain effective communications between the Applicant and fishers; ▪ 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 and other navigational warnings to the fishing community to provide advance warning of project activities and associated advisory safe passing distances. There will be use of temporary guard vessel(s) where identified by risk assessment, e.g. to protect unlit structures and/or unprotected cable prior to burial. This will be committed to within the FMMS.	Volume 7, Appendix 3: Fisheries Mitigation and Management Strategy.

Project design feature/other avoidance and preventative measure	Where secured
The project will develop comprehensive Emergency Response Cooperation Plans in consultation with relevant bodies, notably the Irish Coast Guard (IRCG).	Shipping and Navigation Chapter.
Implementation of a buoyed construction/decommissioning area around the site during the appropriate phases, in consultation with Irish Lights.	Shipping and Navigation Chapter.
The document explains that trenchless installation methods, such as Horizontal Directional Drilling (HDD) or Direct Pipe Method (DPM), will be used to install cable ducts beneath the cliffs and beach at the Landfall Site. This approach eliminates the need for open-cut techniques, thereby avoiding the closure of the beach. The trenchless technique will involve drilling or tunnelling from an entry pit onshore, beneath the cliff and beach, to an exit pit in the seabed. This method ensures that public access to the beach remains uninterrupted during the construction phase.	Project Description Chapter.
The Landfall site, where offshore export cables transition to onshore cables, will house a Temporary Construction Compound (TCC) for construction activities. To ensure public access and safety, the TCC will be securely fenced with gated access for vehicles. An upgraded path will facilitate HGV access, while a diverted pedestrian path will maintain public access. Temporary fencing will be used for cable duct laydown, with phased public access restoration. Additionally, a widened path will ensure continuous access to the beach for pedestrians, cyclists, and emergency vehicles throughout the construction phase.	Project Description Chapter.
Trenchless techniques such as Horizontal Directional Drilling (HDD) or Direct Pipe Method (DPM) will be used to install cable ducts under obstacles like the DART/railway line and Shanganagh Cliffs to minimise disruption and ensure safety.	Project Description Chapter.
The site selection for the Onshore Substation (OSS) at Jamestown, Ballyogan, was influenced by several socio-economic, recreational, residential, and land use considerations. The chosen site is a brownfield location within the Ballyogan Landfill and Recycling Park, minimising impacts on greenfield areas and sensitive receptors. The site is relatively distant from residential areas and recreational facilities, reducing potential nuisances during construction and operation. The proximity to the existing Carrickmines substation (approximately 1 km) was a key technical and economic factor, minimising electrical losses and the need for additional infrastructure. Alternative sites were rejected due to their proximity to sensitive receptors, potential planning	Consideration of Alternatives Chapter. Project Description Chapter.

Project design feature/other avoidance and preventative measure	Where secured
constraints, and longer distances to the grid connection point, which would increase environmental and socio-economic impacts.	
A Construction Traffic Management Plan (CTMP) has been prepared alongside the EIAR which sets out the key principles and types of measures to be implemented during construction of the onshore component of Dublin Array. This includes measures which reduce potential impacts on tourism, recreation, and social community infrastructure receptors such as: ▪ Contractor responsibilities: Ensuring experienced contractors and an Environmental Clerk of Works (EnvCoW) oversee compliance with environmental management plans. ▪ Signage: Proper signage on public highways and onsite to guide traffic and ensure safety. ▪ Abnormal Indivisible Load (AIL) Management: Obtaining necessary permits, scheduling movements to avoid peak times, and using escorts. ▪ Onsite management: Implementing the CEMP for waste, dust, noise, and vehicle management. ▪ Complaints and inquiries: Appointing a site manager to handle and log complaints and inquiries. ▪ Driving and speed restrictions: Enforcing safe and defensive driving practices with strict adherence to speed limits.	A CTMP has been prepared within the CEMP (Volume 7, Appendix 8).
The site selection process is described in detail in the Consideration of Alternatives Chapter. The site selection process has included consideration of the following design principles particularly relevant to the tourism and recreation assessment: ▪ Minimising land take where possible; ▪ Avoiding direct significant impacts to internationally and nationally designated areas; ▪ Avoiding important tourism destinations and recreational assets; ▪ Minimising the number and length of trenchless crossings; ▪ Minimising the number of crossings of utility, road, and rail lines; and	The site selection process has minimised impacts on socio-economic factors, recreation, tourism, and land use by reducing land take, avoiding key tourism and recreational areas and designated sites. Project design features and avoidance and preventative measures have described in the Consideration of Alternatives Chapter.

Project design feature/other avoidance and preventative measure	Where secured
▪ Minimising impacts to residents in relation to access to services and road usage, including route closures and diversions. Engagement is ongoing and will continue after submission of the planning application and throughout the development of the Project. Stakeholders in relation to socio-economics, tourism, recreation and land use that will be engaged include: ▪ Local authorities – DLRCC with respect to OES and O&M; ▪ Landowners; ▪ Local communities; ▪ Educational institutions; and ▪ Local suppliers and businesses, including local accommodation providers.	
Project design features, and avoidance and preventative measures are proposed within the technical topic chapters to address lighting, noise, air quality, dust and traffic management. These measures will minimise potential adverse impacts on tourism and recreation receptors during the construction of Dublin Array.	Further details can be found in the technical topic chapters in Volume 3 and 5, and Volume 8, Schedule of Commitments.
Temporary diversions or access restrictions to recreational routes (such as cycle paths) will be implemented where necessary, with suitable alternative routes provided to ensure continued public access. Where possible, these routes will remain open to minimise disruption for users.	Project Description Chapter.

17.11.3 Management plans will be developed in consultation with relevant authorities prior to being implemented to minimise any potential impacts.

17.11.1 In addition to measures to reduce potential negative impacts, the assessment also considers that enhancement measures could provide an opportunity for the benefits of Dublin Array to be maximised. Several indicative employment and skills enhancement measures are outlined at the end of Annex C.

17.12 Environmental Assessment: Construction phase

17.12.1 A detailed assessment of the overall economic impacts of Dublin Array during the construction phase is provided in Annex C.

17.12.2 The construction of Dublin Array will lead to economic advantages, such as an increase in Gross Value Added (GVA) and the creation of jobs. These benefits will mainly be felt in the local areas where the construction activities for the Dublin Array take place. The table below presents a summary of the overall impacts of Dublin Array during the construction phase and is presented as a range based on the range in the potential maximum capacity of Dublin Array.

Table 23 Core economic impacts during the construction phase, average per annum and total (direct, indirect and induced impacts)

	750 MW Wind Farm			824 MW Wind Farm		
	Greater Dublin Co-ordination port	South of Ireland assembly/ marshalling port	Co-ordination and assembly/ marshalling ports	Greater Dublin Co-ordination port	South of Ireland assembly/ marshalling port	Co-ordination and assembly/ marshalling ports
Average Per Annum						
Total GVA (€m)	€ 62	€ 30	€ 92	€ 68	€ 33	€ 102
Total Jobs (FTEs) – Person Years of Employment	800	400	1,200	875	425	1,300
Total impact during construction phase						
Total GVA (€m)	€ 123	€ 63	€ 185	€ 123	€ 60	€ 183
Total Jobs (FTEs) – Person Years of Employment	1,750	850	2,600	1,600	775	2,375

Impact 1: Impact on economic value arising from the construction of Dublin Array

17.12.3 Table 24 and Table 25 set out the assessment of magnitude of impact and sensitivity of the receptor for the maximum and alternative design options.

Table 24 Determination of magnitude for economic value arising from the construction of Dublin Array

	Justification
Extent	The impact will create economic value across Greater Dublin, the rest of Ireland and further afield (as the project will utilise global supply chains).
Duration	The duration of effect occurs over the construction phase and therefore the effect is considered to be low (defined as 1-15 years within Table 7) in duration.
Frequency	Expenditure is spent with suppliers, who then make additional expenditure on their own supply chains and in turn expenditure on wages. There will be a steady contribution of economic value across the construction phase.
Probability (how likely is the impact to occur)	The assessment has taken a conservative approach so the probability of at least the level of economic value set it in the report occurring is high.
Consequence (the degree of change relative to the baseline level and change in character)	Dublin's economy contributed €134.7 billion GVA to the national economy in 2019 and Dublin and the Mid East economies contributed €164.7 billion when combined. The construction of the Dublin Array will impact on certain sectors of the economy more than others. When compared to the size of the construction sector (which will see a large portion of the impacts) the impacts are more significant. Assuming a co-ordination port located within Greater Dublin, the construction of Dublin Array is anticipated to create €62-68 million per annum within Greater Dublin through the construction phase. This will represent a notable boost to the economic value generated in Greater Dublin, particularly by the construction sector and other supporting sectors.
Overall magnitude	*The magnitude of impact on economic value is rated as **Low** assuming there is a co-ordination port within Greater Dublin and **Negligible** if there is not a co-ordination port within Greater Dublin.*

Table 25 Determination of sensitivity of businesses and supply chains to impacts on economic value arising from construction of Dublin Array

Receptor	Justification
Context	Adaptability: There is a relatively limited ability to utilise local supply chains and businesses due to the global nature of supply chains in the OWF industry. there are still significant local opportunities and a large business base to draw from in Greater Dublin. Tolerance: N/A (as this is a beneficial effect this is not relevant) Recoverability/reversibility: The effect on the receptor is anticipated to occur for the construction phase, however there is potential for some long-lasting positive effects on the development of the Irish OWF supply chain.
Value	Economic growth, and specifically growth in the low carbon economy and renewable sector is given a high level of importance in national and local policy as is set out in Annex A.
Overall sensitivity	*The potential sensitivity of the receptor is rated as **High**.*

17.12.4 The magnitude of the impact has been assessed as **Low**, with the maximum sensitivity of the receptors being **High**. Therefore, the significance of effect from changes in economic value as a result of expenditure retained in Greater Dublin associated with Dublin Array is **Moderate beneficial**, which is not significant in EIA terms. It should be noted that this assessment assumes that there is a coordination port within Greater Dublin. If there is no Greater Dublin co-ordination port, then the impact will be lower and will therefore also be **Not significant**.

Residual effect assessment

17.12.5 With the sensitivity of the receptor assessed as **High**, and the magnitude of impact assessed as **Low** at the Greater Dublin level, the effect on employment in Greater Dublin is assessed as **Moderate beneficial**. Therefore, **no significant beneficial residual effects** have been predicted in respect of the impact on economic value of the Greater Dublin economy arising from construction of Dublin Array.

Impact 2: Impacts on employment arising from construction

17.12.1 Table 26 and Table 27 set out the assessment of magnitude of impact and sensitivity of the receptor.

Table 26 Determination of magnitude for employment arising from construction

	Justification
Extent	The construction of Dublin Array will create jobs locally within Greater Dublin and bring in workforce which are specialists. It will also create jobs in the rest of Ireland and further afield (as the project will utilise global supply chains).
Duration	The duration of effect occurs over the construction phase. The construction phase for Dublin Array is assumed to last up to 2 years for the purpose of the economic impact assessment. Most of the jobs created during the construction phase will be closely linked to the main onshore construction activities. This will take place within the 24-month construction programme set out in the Project Description Chapter.
Frequency	Jobs will be created across the entirety of the construction phase (duration noted above), peaking toward the end of construction.
Probability (how likely is the impact to occur)	The assessment has taken a conservative approach. Therefore, the probability of at least the level of employment set it in Table 23 occurring is determined as high.
Consequence (the degree of change relative to the baseline level and change in character)	To provide context for the construction phase impacts, as outlined in section 17.6, there are over 700,000 people in employment within Dublin and over 1 million in Dublin and the Mid East. The economic modelling (Annex C) estimates that construction may support 800-875 FTE local resident jobs per annum within Greater Dublin (assuming a coordination port located within the region). This represents approximately 1.25% of the total number of people in employment in Dublin. This represents a more significant boost when comparing to the size of the construction sector alone. Dublin and the Mid East region both have around 25,000 workers within the construction industry. 800-875 FTE represents approximately 3.5% of the total number of people in employment in the construction industry in Dublin and the Mid East region.
Overall magnitude	*The magnitude of impact on employment is rated as **Low** assuming there is a co-ordination port within Greater Dublin and **Negligible** if there is not.*

Table 27 Determination of sensitivity for employment

Receptor	Justification
Context	Adaptability: There is a limited level of adaptability to utilise local employment due to the nature of the global supply chains required in development of offshore wind infrastructure. Tolerance: N/a Recoverability: The effect on employment will occur during construction phase, however there may be some long-lasting positive effects from the development of skills related to the construction of Dublin Array.
Value	Employment growth, and specifically growth of jobs which support the transition to net zero are given a high level of importance in national and local policy as is set out in Annex A.
Overall sensitivity	*The potential sensitivity on employment is rated as **High**.*

17.12.1 The magnitude of the impact has been assessed as **Low**, with the maximum sensitivity of the receptors being **High**. Therefore, the significance of effect from changes in employment as a result of expenditure retained in Greater Dublin associated with Dublin Array is **Moderate beneficial**, which is not significant in EIA terms. If there is no Greater Dublin co-ordination port then the impact will be lower and will therefore also be **Not significant**.

Residual effect assessment

17.12.2 With the sensitivity of the receptor assessed as **High**, and the magnitude of impact assessed as **Low** at the Greater Dublin level, the effect on economic value in Greater Dublin is assessed as **Moderate beneficial**. Therefore, **no significant beneficial residual effects** have been predicted in respect of the impact on employment arising from construction of Dublin Array.

Impact 3: Impacts on the volume and value of the visitor economy as a result of construction of offshore infrastructure

17.12.3 Table 28 and Table 29 set out the assessment of magnitude of impact and sensitivity of the receptor.

Table 28 Determination of magnitude for impacts on the volume and value of the visitor economy as a result of construction of offshore infrastructure

	Justification
Extent	The visual impacts will be limited to the ZTV but does have potential to influence visitors' perceptions of the Dublin coast and therefore has potential to indirectly impact the wider visitor economy of coastal counties within Greater Dublin.
Duration	The duration of effect will occur throughout the construction phase.

	Justification
Frequency	The potential impact will be constant.
Probability (how likely is the impact to occur)	Based on observations for the evidence base presented in section 17.6, for the vast majority of visitors, the addition of an OWF to the coast is not likely to have an impact on where they visit in the study area, whether they visit the study area or how much they spend in the study area. Although the assessment does recognise the risk of negative impacts but also the potential for positive impacts.
Consequence (the degree of change relative to the baseline level and change in character)	Overall, the research described in section 17.6 suggests that activity related to the construction of OWF developments does not have a significant effect on the overall volume of and value of tourism activity. As detailed in the baseline, available research (e.g. Fáilte Ireland, University of the West of England, Ipsos MORI, Glasgow Caledonian University) indicates that OWFs generally do not influence visitor behaviour or tourism negatively. Studies, including those by Scottish Power Renewables, show no evidence of reduced tourism activity, visitor spending, or tourism-related employment due to OWF construction. The main reasons for visiting Greater Dublin are usually related to tourist visits to the major sites in Dublin. It is however recognised that at a more local level (within the ZTV) visitors' reasons for visits are often related to the Dublin Bay coastline and engaging in activities in which have views out to see or use of marine areas such as walking coastal paths and sailing. The assessment of the impact on enjoyment of marine and coastal recreation and visitor assets during the construction phase (Section 17.11.2, impact 4) found there will be no significant effects on users' enjoyment. In addition, the study by Fáilte Ireland and consultation with Fáilte Ireland (set out in section 17.6) provide further support that there is no evidence that Dublin Array will have a negative effect on the volume and value of tourism within Dublin and Wicklow.
Overall magnitude	*The magnitude of impact on employment is rated as **Negligible** (at both the Greater Dublin and more local ZTV based levels).*

Table 29 Determination of sensitivity of visitors during the construction of Dublin Array

Receptor	Justification
Context	Adaptability: Generally, visitors to the coastal counties in Greater Dublin will not need to make any changes to their visit as a result of the construction of Dublin Array. Visitors, however, often adapt if needed. Tolerance: The evidence suggests that visitors have a high degree of tolerability regarding OWFs. Whilst it is acknowledged there may be a proportion of the population with negative attitudes towards OWF development who may not tolerate the addition of Dublin Array to the seascape and be deterred. Recoverability: There is no evidence that the volume and value of tourism has been negatively impact by any existing offshore wind developments. In addition, the tourism sector often shows a high degree of resilience and recoverability when faced with significant changes or adverse circumstances. An example of this is the recovery the sector has shown from the impacts of the Covid-19 pandemic.
Value	The tourism economy is an important policy priority at the regional and national level and generates a significant proportion of jobs and GVA of the overall economy.
Overall sensitivity	*The potential sensitivity of the volume and value of visitors is rated as **High** (at both the Greater Dublin and more local ZTV based levels).*

17.12.4 The magnitude of the impact has been assessed as **Negligible**, with the maximum sensitivity of the receptors being **High**. Therefore, the significance of effect from offshore infrastructure on the visitor economy is **Not significant**.

Residual effect assessment

17.12.5 The significance of effect from changes in the volume and value of tourism is not significant in EIA terms. Therefore, no additional mitigation to that already identified in Table 22 are considered necessary. Therefore, no significant adverse residual effects have been predicted in respect of impacts on the volume and value of tourism.

Impact 4: Impacts on enjoyment of marine and coastal recreational and visitor assets arising from construction of offshore infrastructure

17.12.6 Failte Ireland noted that (see section 17.3) particular attention needs to be given to effects on views from existing purpose-built tourism facilities. This includes views from touring routes, walking trails, scenic viewing points, greenways etc. have the potential to be particularly affected by infrastructure related developments which are located within viewing distance from the coast. Failte Ireland also noted that it is important to avoid any effects that may negatively impact local attractions and experiences. The following users of offshore and inshore areas within the ZTV are considered in the assessment below:

- Bathers;
- People engaging in water sports activities;
- People engaging in scuba diving;
- People engaging in recreational sailing and cruising; and
- People engaging in recreational fishing/angling.

17.12.7 The following users of coastal areas onshore and within the ZTV are considered in the assessment below:

- Users of coastal paths and cycle routes;
- Users of beaches;
- Users of protected areas and areas of natural beauty; and
- Users of outdoor visitor attractions on the coast.

17.12.8 Firstly, the assessment presents an overarching overview of magnitude of impact and sensitivity, it then considers specific impacts and sensitivities of each receptor group separately.

Table 30 Determination of magnitude of impact on enjoyment of marine and coastal recreational and visitor assets arising from construction of offshore infrastructure

	Justification
Extent	The impact has potential to occur across the ZTV but is higher closer to the OWF and in particular within the offshore order limits of Dublin Array.
Duration	The duration of effect occurs over the construction phase.
Frequency	The visual effects of offshore infrastructure will build up over time. There will be a buoyed construction area, with advisory safe passing distances, around array area which will be in place across the duration. There will be safety zones in place. Therefore, there is a constant potential for impact, which will increase during peak the peak season for offshore activities.

	Justification
Probability (how likely is the impact to occur)	Most users are unlikely to be impacted.
Consequence (the degree of change relative to the baseline level and change in character)	The consequences of the construction of Dublin Array will vary by receptor depending on factors such as distance from Dublin Array and whether assets are indoor or outdoor based. This is a key part of the assessment and discussed further in Table 32.
Overall magnitude	*The magnitude of impact on enjoyment of marine and coastal recreational and visitor assets arising from construction of offshore infrastructure on each receptor group is considered in more detail below.*

Table 31 Determination of sensitivity of visitors and recreational users of the marine and coastal study area - overarching assessment

Receptor	Justification
Context	Adaptability: Where exclusions are required to facilitate construction there will be alternatives available in the marine and coastal study area for recreational users. Tolerance: Visual impacts will generally be acceptable to visitors as they will generally have no direct impact on users' enjoyment of marine and coastal visitor and recreation activities. Recoverability: Recreational users of the marine and coastal study area are generally resilient and will be able to adapt to temporary disruptions caused by the construction phase of Dublin Array. While there may be short-term impacts on access and enjoyment of certain areas, these will be mitigated through effective communication and planning.
Value	The health and wellbeing benefits of the outdoor recreation considered in this assessment are widely known[18]. The national and local importance of outdoor recreation is noted in strategies such as the National Outdoor Recreation Strategy (see Annex A).
Overall sensitivity	*The potential sensitivity on different receptor groups is considered in more detail below.*

17.12.1 Table 32 and Table 33 outline a more detailed consideration of each receptor groups in terms of the determination of magnitude of impact and sensitivity.

18 Health and wellbeing benefits include improved mental health, physical wellness, boosted immune system, better sleep, stronger social connections and enhanced focus and attention.

Table 32 Determination of magnitude for on enjoyment of marine and coastal recreational and visitor assets arising from construction of offshore infrastructure – assessment by receptor group

Receptor group	Activities and impacts	Magnitude of impact
Bathers	Visual impacts on users and temporary reduced access to the offshore area as a result of exclusion zones required during construction (primarily within inshore areas) as a result of installation of offshore infrastructure.	Low
People engaging in water sports activities		Low
People engaging in scuba diving	Seabed preparation has potential to disturb water quality, but the impact is anticipated to be local in nature. The installation of WTGs and OSP foundations will create additional noise and sediment as a result of the pile driving activities. If exclusion zones are on dive sites, then dives to those sites will not be able to take place while construction activity is ongoing. should any dive sites not be accessible during construction a number of local alternative sites will be available.	Medium
People engaging in recreational sailing and cruising	There is potential for temporary disruption of some sailing routes and general boating in the area. There will be visual impacts, however the greatest potential for impact will be on disruptions to the general boating area through which the ECC passes, however, this will be limited spatially to the locations where construction vessels are present and of temporary duration. The Applicant has already engaged with the Dublin Bay Sailing Club and the Irish Sea Offshore Racing Association and will continue engage with the relevant clubs and associations in order to minimise the potential for disturbance, and the adoption of the Vessel Management Plan, with advanced warning of vessel transits as an embedded environmental measure to be used during construction will minimise this impact (this is project design features, see Table 22. Experience from the UK shows that cruising and boating excursions have been able to include visits to OWFs (such as Rampion 2) as a positive aspect of their offer and the wider promotion of renewable energy production.	Low
People engaging in	Impacts on recreational fishing and angling who are engaging in boat based and charter fishing activities in the offshore area,	**Low** – boat-based angling **Negligible** – shore-based angling

Receptor group	Activities and impacts	Magnitude of impact
recreational fishing/angling	In addition, temporary increases in subsea noise associated with the installation of WTG foundations may and have indirect effects on recreational anglers resulting from potential effects on fish. Provisions will be made for advance notification of the specific locations of construction work during this phase of Dublin Array (project design features set out within Table 22), including the implementation of a Vessel Management Plan, it is considered that any risks of collision or disruption to recreational (boast based) angling activities will be minimised. There are no anticipated impacts on shore-based angling as a result of increased vessel movements. The impact is considered to be short to medium term (throughout the construction phase), of local extent, intermittent and temporary and the magnitude of impact is therefore low for boat based angling and negligible for shore-based angling	
Users of coastal paths and cycle routes	The impact (resulting from offshore infrastructure) of users engaging in activities onshore is limited to visual impacts. There is no evidence that visual impacts from offshore infrastructure and other construction activities (including vessels) will lead to a reduction in usage and enjoyment of use of the coastal areas. Consideration of onshore infrastructure effects on the enjoyment of recreation is considered in sections 17.12 and 17.14.	Negligible
Users of beaches		
Users of protected areas and areas of natural beauty		
Users of outdoor visitor attractions on the coast		

Table 33 Determination of sensitivity of recreational users of the marine and coastal study area – assessment by receptor group

Receptor group	Context	Sensitivity
Bathers	Landfall construction and subsea cable installation will result in construction vessels will be present in the nearshore area adjacent to Shanganagh cliffs and the wastewater treatment plant. Beach access will maintained at all times during the construction stage.	Low
People engaging in water sports activities	The bathing waters within the study area are attractive for many water sports (Construction activity may impact upon water quality and restrict access. The effect is anticipated to be located to within the offshore array area. The assessment outlined in Volume 2, Chapter 2: Marine Water and Sediment Quality found there will be No Significant effects on water quality during the construction phase of the project.	Low
People engaging in scuba diving	Scuba diving is a popular activity within Dublin Bay, due to the presence of excellent dive sites found in the area. There are therefore a number of alternative areas to dive in outside of the offshore project area, including: ▪ Lambay Island; ▪ Greystones Harbour; and ▪ Dalkey Island. As noted above, the assessment outlined in Volume 2, Chapter 2: Marine Water and Sediment Quality found there will be no significant effects on water quality during the construction phase of the project. Construction activity has potential to increase turbidity, reduce access due to exclusion zones, and subject divers to potentially unhealthy levels of noise. The impact of underwater noise has potential to (at least) temporarily displace scuba diving activities for a period of up to 12-months whilst seabed preparation and foundation installation takes place. As outlined within the baseline section, there are several alternative diving sites along Dublin Bay.	Medium
People engaging in recreational sailing and cruising	Recreational sailing and cruising are popular in Dublin Bay. As set out in Volume 3, Chapter 10: Shipping and Navigation, the shallow nature of Kish and Bray banks means the majority of vessel traffic in the area already avoids the majority of the array area, but smaller recreational racing vessels use the area, including for races. Dún	Medium

Receptor group	Context	Sensitivity
	Laoghaire, Wicklow, and Howth Ports are all used by recreational vessels. The Dublin Bay Sailing Club and Irish Sea Offshore Racing Association (have been consulted regarding the proposed development. Dublin Bay Sailing Club are known to undertake regular yacht racing in Dublin Bay. Experience from the UK shows that cruising and boating excursions have been able to include OWFs (such as Rampion OWF) as a positive aspect of their offer and the wider promotion of renewable energy production. This may be particularly valuable in the Irish context as the Dublin Array will be one of the first major OWFs in Ireland.	
People engaging in recreational fishing/angling	Impacts from the increased vessel traffic could potentially interfere with recreational boat based and charter fishing activities within the offshore area. Additionally, environmental measures will be implemented in order to minimise the effects from increased vessel activities. Shore based angling is not considered to be sensitive as it will not be affected by the increase in vessel movements on the basis of the shoreline locations from which this activity is undertaken.	Low
Users of coastal paths and cycle routes	Impacts (from offshore infrastructure) are limited to visual impact. Recreation is an important activity in the appreciation of natural assets in the Dublin Bay Biosphere Reserve area. However, this receptor group is largely unaffected by offshore wind (with impacts limited to visual impacts) and therefore is assumed to have lower sensitivity.	Low
Users of beaches		
Users of protected areas and areas of natural beauty		
Users of outdoor visitor attractions on the coast		

17.12.2 Table 34 sets out the predicted significance of effect for each receptor group.

Table 34 Determination of significance of effect on enjoyment of marine and coastal recreational and visitor assets arising from construction of offshore infrastructure

Receptor group	Sensitivity	Magnitude of impact	Significance of effect
Bathers	Low	Low	Slight adverse
People engaging in water sports activities	Low	Low	Slight adverse
People engaging in scuba diving	Medium	Medium	Moderate adverse
People engaging in recreational sailing and cruising	Medium	Low	Slight adverse
People engaging in recreational fishing/angling	Low	**Low –** boat-based angling (offshore) **Negligible** – shore-based angling	**Slight adverse –** boat-based angling (offshore) **Not significant** – shore-based angling
Users of coastal paths and cycle routes	Negligible	Negligible	Not significant
Users of beaches			
Users of protected areas and areas of natural beauty			
Users of outdoor visitor attractions on the coast			
Users of beaches			

Proposed mitigation

17.12.3 No additional mitigation is proposed.

Residual effect assessment

17.12.4 As there are alternative dive sites available outside the Array area and offshore ECC area the moderate adverse impact is assessed as **not significant** in EIA terms.

17.12.5 The significance of effect from changes in enjoyment of marine and coastal recreational and visitor assets arising from construction of offshore infrastructure is not significant in EIA terms. Therefore, no additional mitigation to that already identified in Table 22 are considered necessary. Therefore, **no significant adverse residual effects** have been predicted in respect of enjoyment of marine and coastal recreational and visitor assets arising from construction of offshore infrastructure.

Impact 5: Wider economic impacts from disruptions to commercial fishing during construction

17.12.6 The assessment of the wider economic impacts from potential disruptions to commercial fishing during construction phase draws heavily from the impact assessment conducted in the Commercial Fisheries Chapter.

Extent of evidence of economic impacts on Commercial Fisheries resulting from offshore wind development

17.12.7 A limited number of peer reviewed studies have been undertaken which directly consider the economic impacts on the commercial fishing industry from offshore wind development. Evidence indicates offshore wind development can have several potential economic impacts on the commercial fishing industry (studies include Chaji and Werner, 2023, Gill *et al*, 2020, and Plymouth Marine Laboratory, 2024[19]):

- Displacement from fishing areas: The construction of WTGs can displace fishers from traditional fishing grounds, leading to increased travel distances and fuel costs.
- Changes in fish stocks: OWFs can potentially alter the distribution and abundance of fish species, potentially affecting catch rates and the types of species available (Gill et al, 2020).
- Economic losses: The combination of displacement and changes in fish stocks has potential to result in economic losses for fishers, including reduced revenues and increased operational costs.
- Increased competition for resources: The development of OWFs can lead to increased vessel traffic and competition for support services onshore, such as docking space and maintenance facilities.
- Insurance and safety concerns: Navigating around wind farms can increase the risk of accidents, potentially leading to higher insurance costs and safety concerns for fishing vessels.
- Businesses that support the fishing industry, such as gear suppliers and processing facilities, may also be affected by changes in fishing patterns and economic viability.
- Additional concerns include potential issues with regard to future cumulative impacts, seafloor cables, decommissioning, seabed damage, impacts on inshore fishers, disproportionate coverage of certain fishing grounds, commercial vessel traffic patterns, electromagnetic effects from cables, and specific fisheries impacts.

19 As of February 2025, the Plymouth Marine Laboratory final study findings have not been published, and only provisional findings have been shared. The study has not completed the peer review process and has not been explicitly mentioned in recent peer-reviewed publications yet.

17.12.8 The extent of occurrence of any of the above impacts are wholly dependent on the location of the OWF and the nature and extent of the fishery in its general environs. In recognition of these concerns a commercial fisheries impact assessment has been completed and included in the EIAR. The Commercial Fisheries Chapter provides an in-depth assessment of these potential impacts during the construction, operational, and decommissioning phases of Dublin Array, recognising that the extent and of these impacts can vary and proposes targeted and effective measures to address the specific needs and concerns of the affected fishing communities, as detailed below.

Summary of Commercial Fisheries assessment

17.12.9 The Commercial Fisheries Chapter assesses impact of the construction of Dublin Array and the potential disturbance of commercially important fish and shellfish resources that may lead to displacement or disruption of fishing activity. The temporary noise and seabed disturbances during the 30-month construction period may displace commercially important fish and shellfish populations from the area. This section assesses the potential temporary subsequent impact for the owners of fishing vessels, where commercially important stocks may be disturbed or displaced to a point where normal fishing practices will be affected.

17.12.10 The Commercial Fisheries Chapter assessment finds that there will be a low adverse magnitude of impact on Irish potting fleets (for whelk, crab and lobster), scallop dredge fleet and beam trawl fleet and the extent will be low to moderate, duration will be short-term, and frequency will be intermittent. The magnitude of impact on mussel seed fishery, razor shell fishery and pelagic trawl fisheries was assessed as negligible.

17.12.11 There is potential for potting and dredge fishing grounds beyond the immediate construction activities to be affected by these impacts. Exposure to the impact is likely and commercial fleets targeting key species will be affected, specifically potting and dredge fisheries targeting benthic shellfish species (including whelk, crab, lobster and scallop) that have limited ability to move. The sensitivity of the receptor for all potting and dredge fleets is therefore considered to be Medium. All other fisheries are assessed as fishing fleets targeting mussel seed, razor shell and pelagic species are considered to have very limited and/or very occasional activity within the array area.

17.12.12 Key to this assessment is consideration of the size of the area, fleet and value impacted in the context of the wider area in which the whelk fishing industry is active within the east coast of Ireland. As noted in section 17.6 there are approximately 24 potting vessels that target whelk across the array area with an additional five potting vessels that target a mixture of whelk, brown crab and lobster. The array area overlaps with 3.2% of the whelk fishing grounds that extend along the eastern Irish coast out to 12 NM and the average annual whelk value landed from the array area has been estimated to be €432,000. To put this into context, in 2022, landings of whelk by Irish vessels fishing in the Irish Sea had a total first sales value of €8.3 million (4,483 tonnes), with €4.5 million (2,583 tonnes) of this landed into Howth, Dún Laoghaire, Wicklow, Arklow and Kilmore Quay.

Assessment of magnitude of impact and sensitivity of the receptors

17.12.13 The evidence above as well as the findings from the commercial fisheries assessment have been considered.

17.12.14 Based on the assessment of sensitivity of various impacts identified in the Commercial Fisheries Chapter, the sensitivity of the receptor has been assessed medium for the potting industry and low for all other fishing industries.

17.12.15 Given the fishing activity taking place within the array area and the evidence above, the magnitude of impact on the fishing industry is expected to range from moderate adverse magnitude (for the potting industry) to low (for the rest of the commercial fishing industry).

Proposed mitigation

17.12.16 The measures outlined in the FMMS will reduce the risk of potential economic harm on the fishing industry.

17.12.17 The Applicant is committed to ongoing liaison with fishers throughout all stages of the project, including:

- A company Fisheries Liaison Officer to maintain effective communications between the Applicant and fishers;
- 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 and other navigational warnings to the fishing community to provide advance warning of project activities and associated advisory safe passing distances.

17.12.18 In particular, additional mitigation has been identified in the Commercial Fisheries Chapter with particular application to the potting fleet. This involves the implementation of the FMMS, including cooperation agreements and associated payments (for the potting fleet). More detail of the proposed mitigation can be found in the Commercial Fisheries Chapter.

Residual effect assessment

17.12.19 Given the mitigation measures proposed in the Commercial Fisheries Chapter, the residual significance of effect from changes in economic impacts from the commercial fishing industry from disruptions during construction of offshore infrastructure is assessed as slight adverse, which is not significant in EIA terms. Therefore, **slight adverse residual effects** have been predicted in respect of in economic impacts from the commercial fishing industry.

Impact 6: Impact of the onshore electrical system on local recreation and tourism receptors

17.12.20 Construction activity within the OES has potential to negatively impact on the users of walking and cycling routes, coastal paths, and other tourism and recreation receptors listed in section 17.6. Access to Shanganagh Beach will remain open during the cable installation operations, as the cables will be installed underneath the beach using trenchless crossing techniques, which minimizes potential impacts at the landfall site.

17.12.21 The magnitude of impact is considered **low adverse** as the quality and duration of the effect is neutral and short-term, respectively. The sensitivity of the existing environment is considered **medium** as level of use and type of users using the onshore area for tourism purposes given the walking and cycling routes, coastal paths and holiday parks. Therefore, the overall level of significance is estimated to be **slight adverse**.

Table 35 Determination of magnitude for impact of the onshore electrical system on local recreation and tourism receptors

	Justification
Extent	OES local study area
Duration	The installation of the onshore infrastructure, excluding surveys and site preparation, is anticipated to take approximately 24 months and onshore construction is likely to commence in advance of the offshore construction program.
Frequency	Construction will occur during normal construction working hours, with the exception of works associated with the entry and exit pits at the landfall and special crossings associated with trenchless construction techniques which will typically occur 24 hours per day, seven days per week for defined periods within the construction programme. This will be subject to agreement with the DLRCC.
Probability (how likely is the impact to occur)	Generally, probability of impacts on local recreational and tourism receptors from construction works associated with the onshore electrical system will increase the close the asset is to the works.
Consequence (the degree of change relative to the baseline level and change in character)	No significant residual effects during construction have been identified in the assessments within the Traffic and Transport Chapter, Noise and Vibration Chapter and the Landscape and Visual Assessment Chapter. The consequence of construction activity will vary depending on the type of construction activity being undertaken at different stages of the construction programme and in different locations. The location of the OSS construction (Ballyogan) will see the highest level of activity. The location at which Dublin Array makes landfall (Shanganagh) will also see more activity than the rest of the OES. In particular, the informal open amenity space located in Sector 1 will host a temporary construction compound (a function it has served previously for other infrastructure projects as recently as 2024). The temporary construction compound is proposed to ensure a safe area for construction and installation of the necessary infrastructure. This will safely accommodate the works area, plant, equipment, workers, temporary office space and welfare facilities.

	Justification
	The compound will be securely fenced to safeguard the site and public safety. It will be necessary to maintain the construction compound for approximately 24 months which is the expected duration of the OES works. Access to the informal open amenity space located in Sector 1 will therefore be restricted. Access to Shanganagh Beach will not be restricted whilst the construction operations are ongoing. At the proposed OSS, operations will be unlikely to result in any direct disturbance to tourism and recreation receptors within 500 m of OSS construction works. Given the use of the project design features identified in section 17.11 the degree of change relative the baseline and change in character is anticipated to be very limited for tourism and recreation receptors (users and businesses) within the OES local study area.
Overall magnitude	*The magnitude of impact on local recreation and tourism receptors is rated as **low**.*

Table 36 Determination of sensitivity for tourism and recreation receptors to construction activity within the OES

Receptor	Justification
Context	Adaptability: Recreation and tourism users are likely to be able to continue the activities they wish to engage in and so are assumed to be highly adaptable. Tolerance: Depending on the type of activity some receptors may have low tolerance for disruption, particularly if their business is directly impacted by disruptions or if they are a frequent visitor to an area. Recoverability: As the impacts are short-term the level of recoverability is high.
Value	Recreation and tourism assets, particularly at landfall, have a high level of importance in the local communities in the OES local study area and therefore are assumed to have a high value for the purposes of this assessment. It should be noted that the rest of the OES has limited numbers of tourism and recreational assets in close proximity.
Overall sensitivity	*The potential sensitivity of the recreation and tourism receptors in the OES local study area is rated as **medium**.*

Proposed mitigation

17.12.22 No additional mitigation is proposed.

Residual effect assessment

17.12.23 The significance of effect from the impact of the onshore electrical system on local recreation and tourism receptors is not significant in EIA terms. Therefore, no additional mitigation to that already identified in Table 22 are considered necessary. Therefore, **no significant adverse residual effects** have been predicted in the impact of the onshore electrical system on local recreation and tourism receptors.

Impact 7: Impact of the onshore electrical system on local social community infrastructure receptors

17.12.1 Whilst some disruption to local social and community infrastructure may occur as a result of construction traffic and noise, the overall level of disruption is anticipated to be minimal and not exceed any impacts predicted on tourism and recreation receptors listed above. In particular the use of project design features such as use of Horizontal Directional Drilling (HDD)/trenchless crossings and measures outlined in the Project Description will ensure that residents are able to continue to use the local social and community infrastructure on which they rely and the organisations providing social community infrastructure will only experience minor disruptions. As a worst case the sensitivity and magnitude of impact are assumed to mirror Impact 6: Impact of the onshore electrical system on local recreation and tourism receptors). Therefore, **no significant adverse residual effects** have been predicted in respect of in economic impacts of the OES on local social community infrastructure receptors.

17.13 Environmental assessment: Operational phase

17.13.1 Annex C provides a detailed assessment of the overall economic impacts during the operational phase. Once Dublin Array is operational there will be an opportunity for further long-term benefits. Table 37 presents the total economic impacts of Dublin Array (direct, indirect and induced) during the operations phase.

Table 37 Core economic impacts during the operations phase, average per annum (total = direct, indirect and induced impacts)

	Dublin Array capacity	
	750 MW	**824 MW**
Average per annum		
Total GVA (€m)	€14	€17
Total jobs (FTEs)	200	240
Total operational lifetime impact		
Total GVA (€m)	€500	€550
Total jobs (FTEs) – person years of employment	7,000	7,700

Hatch, 2022. GVA is rounded to the nearest €1 million and jobs are rounded to the nearest 10 jobs. Numbers may not sum due to rounding.

Impact 8: Impact on economic value arising from operation

17.13.2 Table 38 and Table 39 set out the assessment of magnitude of impact and sensitivity of the receptor.

Table 38 Determination of magnitude of impact on economic value during the operational phase

	Justification
Extent	The impact will create economic value across Greater Dublin through the indirect and induced effects, direct effects will generally be related to more localised impacts linked to the location of the O&M base.
Duration	Occurs over the entire duration of the operational phase.
Frequency	O&M will be required on a consistent basis.
Probability (how likely is the impact to occur)	The assessment has taken a conservative approach so the probability of at least the level of economic value set it in the report occurring is determined as high.
Consequence (the degree of change relative to the baseline level and change in character)	Dublin contributed €122 billion GVA to the national economy in 2018 and Dublin and the Mid East contributed €149.5 billion when combined. The impact of the O&M on the economy at a Greater Dublin level will represent €14-€17 million of GVA per annum (see Annex C). This is modest but nonetheless important economic benefit in the context of the Greater Dublin economy (which generates over €150 billion in GVA). The core economic impact on the marine economy and on specific sectors which are more relevant to the operation offshore wind such as engineering will be more significant and noticeable.
Overall magnitude	*The magnitude of impact on economic value is rated as **Negligible** in the context of the size of the Greater Dublin economy.*

Table 39 Determination of sensitivity of businesses and supply chains to impacts on economic value arising from the operation of Dublin Array

	Justification
Context	Adaptability: There is significant policy pressure to create sustainable growth as the economy transitions to net zero. Tolerance: N/A (as this is a beneficial effect this is not relevant). Recoverability/reversibility: The effect on the receptor is anticipated to occur for the operations phase.

	Justification
Value	Economic growth, and specifically growth in the low carbon economy and renewable sector is given a high level of importance in national and local policy as is set out in Annex A.
Overall sensitivity	*The potential sensitivity of the receptor is rated as **High**.*

17.13.3 The magnitude of the impact has been assessed as **Negligible**, with the maximum sensitivity of the receptors being **High**. Therefore, the significance of effect from changes in economic value as a result of expenditure retained in Greater Dublin associated with Dublin Array is **Not significant** in the context of the size of the Greater Dublin economy, which is not significant in EIA terms.

Residual effect assessment

17.13.4 With the sensitivity of the receptor assessed as **High**, and the magnitude of impact assessed as **Negligible** at the Greater Dublin level, the effect on employment in Greater Dublin is assessed as **Not significant**. Therefore, **no significant beneficial residual effects** have been predicted in respect of the impact on employment arising from operation of Dublin Array.

17.13.5 Notwithstanding the rating of the magnitude of impact in a Greater Dublin economic context, the local opportunity for Dún Laoghaire Harbour has been identified by Indecon in their report to Dún Laoghaire Rathdown County Council in 2021 (Indecon International Economic Consultants, 2021). The report has identified a significant local opportunity for the harbour based on its strategic proximity to intended offshore wind farm development in the Irish Sea and set out a core recommendation in the economic plan for the harbour to (amongst other recommendations) to develop Dún Laoghaire Harbour to include operation and maintenance base services to support offshore renewable energy.

Impact 9: Impacts on employment arising from operation

17.13.6 Table 40 and Table 41 set out the assessment of magnitude of impact and sensitivity of the receptor.

Table 40 Determination of magnitude for employment

	Justification
Extent	The impact will create jobs primarily within Greater Dublin.
Duration	The duration of effect occurs over the operational phase.
Frequency	Jobs will be supported across the entirety operation phase.
Probability (how likely is the impact to occur)	The assessment has taken a conservative approach so the probability of at least the level of employment set it in the report occurring is determined as high.
Consequence (The degree of change relative to the baseline level and change in character)	To put the operational phase impacts into context there are over 700,000 people in employment within Dublin and over 1 million people in employment within Dublin and the Mid East. The assessment detailed in Annex C states that a total of 200-240 FTE jobs

	Justification
	will be created per annum, with around 70-80 of those being direct FTEs.
Overall magnitude	*The magnitude of impact of employment is rated as **Negligible**.*

Table 41 Determination of sensitivity for employment

Receptor	Justification
Context	Adaptability: There is a relatively low level of adaptability to utilize local employment. Tolerance: N/a Recoverability: The effect on the receptor is anticipated to occur for the construction phase, however there may be some long-lasting positive effects on the development of skills and employment related to the operation of Dublin Array that will have long-term positive impacts.
Value	Employment growth, and specifically growth of jobs which support the transition to net zero are given a high level of importance in national and local policy as is set out in Annex A.
Overall sensitivity	*The potential sensitivity on employment is rated as **High**.*

17.13.7 The magnitude of the impact has been assessed as **Negligible**, with the maximum sensitivity of the receptors being **High**. Therefore, the significance of effect from changes in employment as a result of expenditure retained in Greater Dublin associated with Dublin Array is **Not significant** in the context of Greater Dublin's overall employment base, which is not significant in EIA terms.

Residual effect assessment

17.13.8 With the sensitivity of the receptor assessed as **High**, and the magnitude of impact assessed as **Low** at the Greater Dublin level, the effect on economic value in Greater Dublin is assessed as **Moderate beneficial**. Therefore, **no significant beneficial residual effects** have been predicted in respect of the impact on employment arising from the operation of Dublin Array.

Impact 10: Impacts on the volume and value of the visitor economy as a result of operation of offshore infrastructure

17.13.9 Table 42 sets out the assessment of magnitude of impact.

Table 42 Determination of magnitude for impacts on the volume and value of the visitor economy as a result of operation of offshore infrastructure

	Justification
Extent	The visual impacts will be limited to the ZTV but does have potential to influence visitors' perceptions of the Dublin coast and therefore has potential to impact the wider visitor economy of Greater Dublin and Ireland.
Duration	The duration of effect occurs will occur over the operational phase.
Frequency	The visual impact of offshore infrastructure will be constant. When maintenance and/or repairs are required, any disturbance will be constrained to the area immediately around infrastructure, and alternative measures put in place to ensure any disruption to the visitor activity (and therefore the visitor economy) kept to a minimum.
Probability (how likely is the impact to occur)	Based on observations for the evidence base presented in section 17.6, for the vast majority of visitors, the addition of an OWF 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.
Consequence (the degree of change relative to the baseline level and change in character)	As with the analysis presented in Table 28 and section 17.6 , the evidence shows that activity related to the operation of offshore infrastructure of OWF developments does not have a significant effect on the overall volume of and value of tourism activity.
Overall magnitude	*The magnitude of impact on employment is rated as **Negligible** (at both the Greater Dublin and more local ZTV based levels).*

17.13.10 The sensitivity of the visitor economy is anticipated to be the same level, **High**, as that is outlined in section 17.1.1.

17.13.11 The magnitude of the impact has been assessed as **Negligible**, with the maximum sensitivity of the receptors being **High**. Therefore, the significance of effect on the volume and value of the visitor economy as a result of the operation of offshore infrastructure is **Not Significant**.

Residual effect assessment

17.13.12 The significance of effect from changes in the volume and value of tourism is not significant in EIA terms. Therefore, no additional mitigation to that already identified in Table 22 are considered necessary. Therefore, no significant adverse residual effects have been predicted in respect of impacts on the volume and value of tourism.

Impact 11: Impacts on enjoyment of marine and coastal recreational and visitor assets arising from operation of offshore infrastructure

17.13.13 The assessment considers the same marine and coastal recreation receptor groups as is outlined in section 17.1.1.

17.13.14 Firstly, an overarching assessment is undertaken and then the assessment considers specific impacts and sensitivities of each receptor group separately.

Table 43 Determination of magnitude for on enjoyment of marine and coastal recreational and visitor assets arising from operation of offshore infrastructure – overarching assessment

	Justification
Extent	The impact has potential to occur across the ZTV but is higher closer to the array and offshore ECC, especially within the offshore project area of Dublin Array.
Duration	The duration of effect occurs over the operational phase.
Frequency	The visual effects of the array will be constant. The MDO is that there will be that there will be up to be three daily CTV trips with the addition of up to 100 vessels trips to support scheduled routine and non-routine maintenance per year during the operational phase. The majority of trips will be via crew transfer vessels which will allow for preventative maintenance (rather than the replacement/ repair of key components). In addition, cable repairs may be needed (for both array and export cables) throughout the project's lifetime, which may lead to reduced amenity and access to the offshore area.
Probability (how likely is the impact to occur)	Most users in the study area are unlikely to be impacted whilst there is high confidence that regular users of the offshore area may be impacted.
Consequence (The degree of change relative to the baseline level and change in character)	When replacement of larger components is required, jack up vessels and/or special operation vessels may be needed, often requiring the implementation of a safety zone. In the majority of cases, preventative maintenance can be undertaken via normal service vessels and will therefore not result in any impact on offshore receptors. As with the assessment in section 17.1.1, it is anticipated that visual impacts will only have a negligible impact on visitors' enjoyment of the coastal and marine area for most users. This is especially true in the long run as where potential impacts occur users are likely to adapt to the presence of Dublin Array.

	Justification
Overall magnitude	*When repairs are not needed the magnitude of impact on enjoyment of marine and coastal recreational and visitor assets arising from the operation of offshore infrastructure on each receptor group is assessed as **Negligible** for all of the of recreation user receptor groups. This will have potential to increase to **Low** for users of the offshore area where repairs (including either of large components and/or offshore cables) are required (due to a potential reduction in the area in which these activities can take place, especially when major repair works are needed).*

17.13.15 The sensitivity of receptor groups is anticipated to be the same as that has been assessed in the assessment of impact enjoyment of marine and coastal recreational and visitor assets arising from construction of offshore infrastructure. In addition, the impacts are anticipated to be no greater than which is assessed for the construction phase but will occur over a much longer time period.

Table 44 Determination of significance of effect on enjoyment of marine and coastal recreational and visitor assets arising from operation of offshore infrastructure

Receptor group	Sensitivity	Magnitude of impact	Significance of effect
Bathers	Low	**Negligible** (usually) Potential for **Low** during repairs	Not significant (usually) Up to **Slight Adverse** during repairs
People engaging in water sports activities	Low	**Negligible** (usually) Potential for **Low** during repairs	Not significant (usually) Up to **Slight Adverse** during repairs
People engaging in scuba diving	Medium	**Negligible** (usually) Potential for **Low** during repairs	Not significant (usually) Up to **Slight Adverse** during repairs
People engaging in recreational sailing and cruising	Medium	**Negligible** (usually) Potential for **Low** during repairs	Not significant (usually) Up to **Slight Adverse** during repairs
People engaging in recreational fishing/angling	Low	**Negligible** (usually)	Not significant (usually)

Receptor group	Sensitivity	Magnitude of impact	Significance of effect
		Potential for **Low** during repairs	Up to **Slight Adverse** during repairs
Users of coastal paths and cycle routes	Low	Negligible	Not significant
Users of beaches			
Users of protected areas and areas of natural beauty			
Users of outdoor visitor attractions on the coast			

Proposed mitigation

17.13.16 No additional mitigation is proposed.

Residual effect assessment

17.13.17 The significance of effect from changes in enjoyment of marine and coastal recreational and visitor assets arising from the operation of offshore infrastructure is not significant in EIA terms. No additional mitigation to that already identified in Table 22 are considered necessary. Therefore, **no significant adverse residual effects** have been predicted in respect of in enjoyment of marine and coastal recreational and visitor assets arising during the operational phase of offshore infrastructure.

Impact 12: Wider economic impacts from disruptions to commercial fishing during the operational phase

17.13.18 The limited research assessing the economic impacts on commercial fishing from the development and operation of OWFs is set out within section 17.12. The research that is available indicates there are potentially harmful impacts on the fishing industry resulting from the operation of OWFs.

17.13.19 The presence of wind turbines can alter local marine habitats, potentially changing the distribution and abundance of fish species. Overall, while the construction phase may cause more immediate and noticeable disruptions, the operational phase has potential to lead to sustained economic impacts due to long-term changes in fishing patterns and habitat alterations.

17.13.20 Should potential impacts occur on the fishing industry there are also associated broader economic effects on related industries, such as fish processing, equipment suppliers, and local businesses that support the fishing community.

17.13.21 Consultation with the fishing industry, outlined in more detail in the Commercial Fisheries Chapter, has raised concerns surrounding active fishing within the operational array area due to tidal strengths and drift during hauling of gear.

17.13.22 To assess a worst-case scenario the assessment assumes that commercial fishing will not occur around the footprint of installed infrastructure and advisory safety distances within the array area. For the purposes of clarity, commercial fishing activity will not be prevented from fishing in the wind farm by the Applicant. Out with this area, the assessment assumes that fishing will not be prohibited from within the array area where turbine spacing and turbine layout allow productive grounds to be targeted. However, it is recognised that the level of fishing within the array area may not resume to full levels pre-construction of Dublin Array, due to the physical and hydrological constraints within the site.

17.13.23 As noted in section 17.12 there are approximately 24 potting vessels that target whelk across the array area with an additional five potting vessels that target a mixture of whelk, brown crab and lobster. The array area overlaps with 3.2% of the whelk fishing grounds that extend along the eastern Irish coast out to 12 NM and the average annual whelk value landed from the array area has been estimated to be €432,000. To put this into context in 2022 landings of whelk by Irish vessels fishing in the Irish Sea had a total first sales value of €8.3 million (4,483 tonnes), with €4.5 million (2,583 tonnes) of this landed into Howth, Dún Laoghaire, Wicklow, Arklow and Kilmore Quay.

17.13.24 The Commercial Fisheries Chapter found a number of impacts with Slight Adverse effects. However, the assessment found Moderate (adverse) impacts on the Irish potting fleet for whelk from the physical presence of array area infrastructure leading to reduction in access to, or potential exclusion from established fishing grounds.

17.13.25 The sensitivity of the commercial fisheries receptors is the same as that presented for the wider economic effect on the fishing industry during the construction phase within section 17.12. Based on the assessment of sensitivity of various impacts identified in the Commercial Fisheries Chapter, the sensitivity of the receptor has been assessed as medium for the potting and low for all other fishing industries.

17.13.26 The significance of effect is assessed as Moderate Adverse for the potting industry and low for the rest of the fishing industry.

Proposed mitigation

17.13.27 Possible mitigation identified in the Commercial Fisheries Chapter includes implementation of a FMMS and use of gear trials to access practicality of potting activity within the operational array area. As noted in the Commercial Fisheries Chapter:

- The Applicant is committed to delivering a FMMS, which includes options to encourage co-existence and further mitigate the effect, including during the operational phase of Dublin Array.
- Gear trials will be used to assess practicality of potting activity within the operational array area. This could include alterations to normal gear configurations, such as number of pots per string and/or direction the gear is set with respect to turbine locations;

- There is a commitment to update the FMMS based on findings of the monitoring campaign.

17.13.28 Conducting trials with modified or new fishing gear may help identify configurations that minimise interactions with wind farm infrastructure while maintaining catch efficiency. Gear trials can also focus on reducing bycatch of non-target species, which can be beneficial for both the fishing industry and marine conservation. By experimenting with different gear types and techniques, fishers can adapt to the presence of wind farms and continue their operations with lower levels of disruption.

17.13.29 The use of this mitigation will bring the residual effect to **Slight Adverse**.

Residual effect assessment

17.13.30 Given the proposed mitigation relevant to the whelk fleet, the residual significance of effect from changes in economic impacts from the commercial fishing industry from disruptions during operation of offshore infrastructure is assessed as **Slight Adverse**, which is not significant in EIA terms.

17.14 Environmental assessment: Decommissioning phase

17.14.1 As referenced in the Project Description Chapter, the Decommissioning and Restoration Plan (Volume 7, Appendix 2), including the three rehabilitation schedules attached thereto, describes 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 that are the subject of the MACs (Reference Nos. 2022-MAC-003 and 004 / 20230012 and 240020).

17.14.2 It is based on the best scientific and technical knowledge available at the time of submission of this planning application. However, the lengthy passage of time between submission of the application and the carrying out of decommissioning works (expected to be in the region of 35 years as defined in the MDO) gives rise to knowledge limitations and technical difficulties. Accordingly, the Decommissioning and Restoration Plan will be kept under review by the Applicant as the project progresses, and an alteration application will be submitted if necessary. In particular, it will be reviewed having regard to the following:

- The baseline environment at the time rehabilitation works are proposed to be carried out;
- What, if any, adverse effects have occurred that require rehabilitation;
- Technological developments relating to the rehabilitation of marine environments;
- Changes in what is accepted as best practice relating to the rehabilitation of marine environments;

- Submissions or recommendations made to the Applicant by interested parties, organisations and other bodies concerned with the rehabilitation of marine environments; and/or
- Any new relevant regulatory requirements.

17.14.3 The Decommissioning and Restoration Plan outlines the process for decommissioning of the WTG, foundations, scour protection, OSP, inter array cables and offshore ECC. The plan outlines the assumption that the most practicable environmental option is to leave certain structures in situ (e.g. inter array cables, scour protection), however the general principle for decommissioning is for all structures to be removed and it is assumed that the WTGs will be dismantled and completely removed to shore. The onshore element of the Project Description Chapter outlines the expected process for decommissioning of the onshore infrastructure.

17.14.4 For the purposes of the assessment of decommissioning, all activities outlined within the Decommissioning and Restoration Plan, and the Project Description Chapter, have been considered.

17.14.5 In principle, the residual effect during the decommissioning phase for all socio-economic, tourism recreation and land use receptors considered is very likely to mirror or be lower in magnitude to the project's construction phase. It should be noted that the sensitivity of the receptor to decommissioning activities mirrors the assessment conducted for the construction phase for all receptors. The assessment, and residual effect of the decommissioning phase, is assessed as set out in Table 45.

Table 45 Assessment of significance of effect during Dublin Array's decommissioning phase

	Sensitivity of receptor	Magnitude of impact (justification)	Significance of Effect
Impact 13: Economic value arising from decommissioning of Dublin Array	High	**Negligible** (when adjusted for inflation there will be considerably lower expenditure during decommissioning compared to construction, therefore the retained expenditure and economic value generated from this retained expenditure is likely to considerably be lower than the construction phase. Due to the uncertainties this has not been quantified.)	Not Significant
Impact 14: Employment arising from decommissioning of Dublin Array	High	**Negligible** (as above, there is likely to be a considerably lower level of employment within Greater Dublin compared to the construction phase. Due to the uncertainties this has not been quantified.)	Not Significant
Impact 15: Impact on the volume and value of the visitor economy as a result of decommissioning of offshore infrastructure	High	**Negligible** (The scale of activity and therefore potential impact on the visitor economy is assumed to be no greater than during the construction phase.)	Not Significant
Impact 16: Impact on enjoyment of marine and coastal recreational and visitor assets arising from decommissioning of offshore infrastructure	**Medium** - People engaging in scuba diving **Low** – Bathers, people engaging in watersport activities, recreational fishing/angling and users of coastal paths, cycle routes, beaches, People engaging in recreational sailing and cruising,	**Medium** – People engaging in scuba diving and recreational sailing and cruising. **Low** – Bathers engaging in watersports activities, recreational sailing/cruising and boat based recreational fishing/angling. **Negligible** – Shore based recreational fishing/angling and users of coastal paths, cycle routes, protected areas and areas of natural	**Moderate Adverse -**People engaging in scuba diving **Slight Adverse** (which is Not Significant) for Bathers, people engaging in watersports activities, recreational sailing and cruising and boat based recreational fishing/angling.

	Sensitivity of receptor	Magnitude of impact (justification)	Significance of Effect
	protected areas of natural beauty and outdoor visitor attractions.	beauty and outdoor visitor attractions on the coast.	**Not Significant-** Shore based recreational fishing/angling, users of coastal paths, cycle routes, protected areas and areas of natural beauty and outdoor visitor attractions on the coast.
Impact 17: Wider economic impacts from disruptions to commercial fishing during decommissioning	**Medium** (for potting industry) **Low** (for the rest of the fishing industry)	**Moderate adverse** (for potting industry) Low (for the rest of the commercial fishing industry).	**Moderate adverse** for the potting industry, reducing to **Slight adverse** with implementation of mitigation identified in the Commercial Fisheries Chapter. **Slight Adverse** (for the rest of the fishing industry).
Impact 18: Impact of the onshore electrical system on local recreation and tourism receptors during decommissioning	Medium	Low	The cable will be removed, ducts left in place. The impact will be **Negligible** to **Slight Adverse** (which is Not Significant).
Impact 19: Impact of the onshore electrical system on local social community infrastructure receptors during decommissioning	Medium	Low	The cable will be removed, ducts left in place. The impact will be **Negligible** to **Slight Adverse** (which is Not Significant).

17.15 Environmental assessment: Cumulative effects

Overview and guidance

17.15.1 The cumulative effects assessment (CEA) has been undertaken in line with the principles outlined the following key guidance documents:

- Guidelines on the Information to be contained in EIARs (Environmental Protection Agency, 2022);
- Guiding Principles for Cumulative Impact Assessments in OWFs, (Renewable UK, 2013) as presented in the Guidance on EIS and NIS Preparation for Offshore Renewable Energy Projects (DCCAE, 2017);
- Draft Advice Notes For Preparing Environmental Impact Statements (Environmental Protection Agency, 2015); and
- Guidelines for Planning Authorities and An Bord Pleanála on carrying out EIAs (Department of Housing, Planning and Local Government, 2018).

17.15.2 As outlined in DCCAE's 2017 guidance, standardised frameworks for cumulative effects have been developed in relation to OWFs. These frameworks are based on the driver, pressure, states, impacts and responses model. More details of this approach are outlined in Volume 2, Chapter 4: Cumulative Effects Assessment Methodology.

17.15.3 The specific projects scoped into this cumulative impact assessment on socio-economic, tourism and recreation receptors, and the tiers into which they have been allocated are presented below. The full list of plans and projects considered, including those screened out, are presented in Volume 2, Chapter 4: Cumulative Effects Assessment Methodology. For the purposes of the cumulative impact assessment, a precautionary construction period has been assumed between the years 2029 to 2032, with offshore construction (excluding preparation works) lasting up 30 months as a continuous phase within this period (refer to the Project Description Chapter). Construction of the OES will commence approximately 12 months before the offshore works.

Projects scoped out

17.15.4 The long list has considered projects and scoped out on the basis of:

- The data confidence;
- Whether there is a source-receptor-pathway;
- Whether there is a spatial overlap which has the potential to result in significant effects; and

- Whether there is a temporal overlap which has the potential to result in significant effects.

17.15.5 All existing operational projects are considered part of the existing socio-economic baseline environment and are therefore scoped out of the cumulative effects assessment (this includes Arklow Bank Phase 1).

Offshore projects for cumulative assessment

17.15.6 The tiers and corresponding development stage are defined in Table 46. The specific projects scoped into this cumulative impact assessment, and the tiers into which they have been allocated are presented in Table 48.

Table 46 Tiers and development stage of CEA projects

Tiers	Development stage
Tier 1	Project under construction. Those projects that are only partially constructed at the time that baseline characterisation is undertaken; Those that were only recently completed, during the development of the baseline characterisation, the full extent of the impacts arising from the development(s) may not be reflected in the baseline; and/or Those plans and projects which may have consent or licences to undertake further work, such as maintenance dredging or notable maintenance works which may arise in additional effects. It should be noted that for the socio-economic, recreation and tourism assessment, built and operational projects (at the time of writing) are assumed to be included within the receiving environment.
Tier 2	Permitted application(s), but not yet implemented.
Tier 3	Submitted application(s), but not yet determined.
	Identified in the relevant development plan (and emerging development plans – with appropriate weight given as they move closer to adoption) recognising that much information on any relevant proposals will be limited.
	Identified in other plans and programmes (as appropriate) which set the framework for future development consents/approvals, where such development is reasonably likely to come forward.

Impact screening

17.15.7 The next step in the CEA is the identification of which residual impacts assessed for Dublin Array alone have the potential for a cumulative impact with other development (described as 'impact screening'). This impact screening exercise is set out in Table 47. As a starting point only, potential impacts assessed within as 'Slight' or above are assessed in the CEA due to the limited additional contribution to cumulative effects from Dublin Array resulting from impacts which have been assessed below 'Slight'.

Table 47 CEA impact screening

Impact	Potential for cumulative effect	Rationale
Construction phase		
Impact on economic value arising from construction	Yes (assuming Greater Dublin coordination port)	Cumulative projects within Greater Dublin being constructed at the same time as Dublin Array will result in greater job creation which may increase the significance of effect.
Impacts on employment arising from construction		
Impacts on the volume and value of the visitor economy as a result of construction of offshore infrastructure	No	Effect is assessed as 'Not significant' (lower than 'Slight'), therefore not taken considered further in the CEA.
Impacts on enjoyment of marine and coastal recreational and visitor assets arising from construction of offshore infrastructure	Partially (only for scuba divers, bathers, people engaging in watersports activities, and boat based recreational fishing/angling).	The effect is assessed as 'Not significant' for (lower than 'Slight'), therefore not taken considered further in the CEA.
Wider economic impacts from disruptions to commercial fishing during construction	Yes	Cumulative effects on Commercial Fisheries are assessed in the Commercial Fisheries Chapter. Dublin Array will Participate in the Seafood/ORE Working Group, including commitment to joint development and implementation of cumulative mitigation approaches. Moderate adverse effects on displacement leading to gear conflict and increased fishing pressure on established fishing grounds is assessed for the Irish potting fleet. Slight adverse effects are predicted for the scallop dredge fleet, otter trawl fleet and beam trawl fleet.

Impact	Potential for cumulative effect	Rationale
		Slight adverse effects are predicted on reduction in access to, or exclusion from established fishing grounds is assessed for the Irish potting fleet, scallop dredge fleet, otter trawl fleet and beam trawl fleet.
Impact of the onshore electrical system on local recreation and tourism receptors	Yes	Yes, should there be construction of other projects in close proximity to the OES (i.e. overlapping the OES study area).
Impact of the onshore electrical system on local social community infrastructure receptors	Yes	
Operational phase		
Determination of magnitude of impact on economic value during the operational phase	No	Effect is assessed as 'Not significant' (lower than 'Slight'), therefore not taken considered further in the CEA.
Impacts on employment arising from operation		
Impacts on the volume and value of the visitor economy as a result of operation of offshore infrastructure	No	Effect is assessed as 'Not significant' (lower than 'Slight'), therefore not taken considered further in the CEA.
Impacts on enjoyment of marine and coastal recreational and visitor assets arising from operation of offshore infrastructure	No	It is highly unlikely that major offshore maintenance and repair works will raise the level of significance of the effect. For all other times the effect is assessed as 'Not significant' (lower than 'Slight'), therefore not taken considered further in the CEA.
Wider economic impacts from disruptions to commercial fishing during the operational phase	Yes	As above, cumulative effects are assessed in the Commercial Fisheries Chapter.
Decommissioning phase: The cumulative effects are expected to be no higher than the impacts predicted during the construction phase. There is insufficient information to be able to assess the decommissioning phase at this stage and therefore this phase is not considered further in the CEA.		

Other projects screening

Phase 1 offshore wind projects in Ireland

17.15.8 Phase 1 projects comprise:

- Codling Wind Park;
- Oriel Wind Park;
- North Irish Sea Array (NISA);
- Fuinneamh Sceirde Teoranta (Sceirde Rocks); and
- Arklow Bank Phase 2.

17.15.9 All Phase 1 projects have been awarded a Maritime Area Consent (MAC). EIARs have been submitted for Codling Wind Park, Oriel Wind Park, NISA and Arklow Bank Phase 2. Notwithstanding this, they are likely to have similar development timelines, and therefore inherently have a resultant risk associated with cumulative effects. There is a requirement to assess Phase 1 projects within the EIAR, as appropriate and as information allows. As a result, Phase 1 projects fall outside of the standard hierarchy and will be assessed based on information available.

17.15.10 Phase 1 projects will be assessed to the highest level of detail that is appropriate given the level of information that exists. For all of the Phase 1 projects for which have had EIAR's conducted information is available to allow an informed and robust assessment to be undertaken.

17.15.11 The potential for cumulative socio-economic, tourism and recreation effects from Sceirde Rocks is not considered further in this CEA as the project is on the west coast of Ireland and therefore has no potential to generate significant cumulative socio-economic, tourism and recreation effects. In addition, there is a lack of detailed information on socio-economics, tourism, recreation and land use for Sceirde Rocks, as at the time of writing a EIAR has not yet been submitted for Sceirde Rocks.

Future offshore development in Ireland (Phase 2 and beyond)

17.15.12 There is insufficient information available to inform the assessment and future offshore wind development in Ireland (post Phase 1) and therefore these phases beyond Phase 1 are not included in the CEA.

Other major energy/strategic/development plans/projects

17.15.13 Other major infrastructure development are considered in the CEA, this includes other strategic development plans within Greater Dublin, e.g. Dublin Port Masterplan and other major infrastructure projects proposed in Greater Dublin as part of Ireland's National Development Plan including:

- Dublin Port 3FM Project;
- EirGrid Powering up Dublin;
- MetroLink;
- DART+ Programme;
- BusConnects;
- Western Supply Project (planning application is expected to be submitted to An Bord Pleanála in 2025); and
- Urban Regeneration Projects: Areas like Cherrywood, Dúndrum, and Dún Laoghaire are receiving funding for public realm improvements, parks, and cycleways.

17.15.14 Major infrastructure projects proposed in Greater Dublin which have not yet submitted planning applications have not been screened into the CEA due to the lack of information to conduct a meaningful impact assessment on such projects.

Onshore projects (within OES Study Area)

17.15.15 There are a number of projects proposed in the OES Study Area, which are also detailed in Table 48. Only projects which have a high potential to overlap both spatially with the OES study area and temporally have been screened in.

17.15.16 Given uncertainties over construction programmes, it is assumed all the projects within Table 48 have potential for temporally overlapping construction phases 2029 to 2032.

Table 48 Other projects screened into the socio-economic, tourism and recreation CEA (offshore and onshore)

Development type	Project name	Current status of development	Data confidence assessment/phase	Planned programme
Tier 1 & 2: No projects screened into the CEA				
Tier 3				
OWF	Codling Wind Park	Pre-consent	Medium – Application submitted	Commencement in 2027 with construction lasting 2-3 years;
OWF	Oriel Wind Park	Pre-consent	Medium – Application submitted	Construction 2026-2028
OWF	NISA	Pre-consent	Medium – Application submitted	Construction 2027-20xx
OWF	Arklow Bank Phase 2	Pre-consent	Medium – Application submitted	Construction 2026-2029
Strategic development plan	Dublin Port Masterplan - 3FM Project	Pre-consent	Medium – Application submitted	2026-between 2030 and 2035
Transport	DART+ Programme	Varies depending on the subproject	Varies depending on the subproject	DART+ West: Construction expected to begin soon after receiving the Railway Order and last 3.5 to 4 years. DART+ Coastal North: Railway Order Application was Submitted in July 2024.Construction is likely to begin later this decade and last for around 3 year

Development type	Project name	Current status of development	Data confidence assessment/phase	Planned programme
				DART+ South West: Railway Order has been approved. Construction Start is expected to commence shortly after approval and last for around 3.5 to 4 years.
Transport	BusConnects	Varies depending on the subproject. Planning consents been granted for the nine of the twelve schemes.	Varies depending on the scheme	Construction stage for the first two schemes.
Transport	BusConnects Bray to City Centre Core Bus Corridor Scheme	Not decided 317742 (ABP)	Medium – Application submitted	Expected to take 36 months
Transport	Beckett Road Re-alignment and Ancillary Amendments.	Approved	Medium	Construction anticipated for 2026-2028

Impacts on economic value and employment arising from construction

17.15.17 All the projects identified within Table 48 have potential to create employment and economic growth opportunities because of local expenditure being secured by businesses located within both the Greater Dublin and resultant employment opportunities being created for people working in Greater Dublin. All projects identified in Table 48 have potential to be built concurrently with Dublin Array (i.e. between 2029 and 2032). Each offshore wind project has considered the scale of economic value and job creation in their EIAR assessments; however, methods and approaches differ as there is no required standardised method for assessing such impacts. While there will be variation in the projects depending on factors such as the size and location of the projects and the availability of local skills and expertise, as well as the developer's appetite to procure locally. Nevertheless, each OWF is anticipated to generate similar scales of local jobs to Dublin Array through their construction phases. Together with other major projects which have potential to overlap temporarily (e.g. the DART+ Programme and BusConnects), these are anticipated to created thousands of jobs and create significant opportunities for the construction sector and supply chain in Greater Dublin. The cumulative impact of these projects on economic value and employment arising from construction is anticipated to be **Significant**.

17.15.18 Other OWFs have potential to generate cumulative impacts on the enjoyment of marine and coastal recreational and visitor assets along the east coast of Ireland.

17.15.19 The impact on recreational and visitor assets has been considered in the EIARs of the offshore wind projects.

- Oriel Wind Farm Project: Chapter 16 Infrastructure, Marine Recreation and Other Users found slight adverse cumulative effects on displacement of recreational sailing and motor cruising, recreational fishing (boat angling) and other recreational activities (diving vessels), resulting in a loss of recreational resource displacement of recreational fishing (shore angling) and other recreational activities (kayaking, kite surfing, surfing and windsurfing, sea swimming and beach users) along the nearshore and intertidal section of the offshore cable corridor resulting in a loss of recreational resource.
- NISA: Within Chapter 33 Socio-Economic, Tourism and Recreation Impact on use of recreational facilities related impact during offshore construction phase was assessed as Imperceptible.
- Arklow Bank Wind Park 2: Within Chapter 21 Population and Human Health significance of Tourism and Recreation Asset Impacts were assessed as Not Significant/Imperceptible.

17.15.20 Given the assessments outlined above cumulative effects during the construction phase are assessed as **Moderate Adverse**.

Wider economic impacts from disruptions to commercial fishing during construction and operational phases

17.15.21 Section 9.16 of the Commercial Fisheries Chapter assesses the cumulative impacts on Reduction in access to, or exclusion from established fishing grounds and Displacement leading to gear conflict and increased fishing pressure on established fishing grounds. For potting fisheries, the significance of effect is assessed as Moderate adverse. With no further measures to reduce such impacts, it is anticipated that this will result in Moderate adverse effects for the potting fisheries industry.

17.15.22 As identified in Commercial Fisheries Chapter, the Developer will continue to liaise with other Phase 1 Project developers and continue to actively participate in the National Seafood ORE Working Group, including commitment to joint development and implementation of approaches to mitigating the cumulative economic effects on the fishing industry on the east coast of Ireland. This continued liaison will consider the potential negative economic impacts on the commercial fisheries industry, with a target on particular locations and areas of the industry (i.e. fisher which have greater potential for impacts). These measures will be implemented to reduce effects on the potting fisheries industry to Slight Adverse.

Impact of the onshore electrical system on local social community infrastructure, local recreation and tourism receptors

17.15.23 There are a limited number of projects which have high potential to overlap with Dublin Arrays OES both in terms of the location of construction activity and temporality. These projects have been screened into the assessment.

17.15.24 The BusConnects Bray to City Centre Core Bus Corridor Scheme will cross the OES. Chapter 10 of the EIAR for the scheme (titled Population) does not find any significant effects on any local social community infrastructure, local recreation and tourism receptors identified in the Dublin Array assessment.

17.15.25 Given the nature and character of the area at Beckett Road, the Beckett Road Re-alignment and Ancillary Amendments are considered unlikely to lead to a marked increased impacts on social community infrastructure, tourism and recreation receptors identified in the assessment.

17.15.26 The EirGrid Powering Up Dublin will interact with the OES at Carrickmines OSS. Given the nature of the area and lack of key tourism and recreation receptors within 500m of the substation this is unlikely to lead to a marked increased impacts on social community infrastructure, tourism and recreation receptors identified in the assessment.

17.15.27 Therefore, the impact of the OES on local social community infrastructure, local social community infrastructure, recreation and tourism receptors is expected to mirror the assessment of Dublin Array alone.

17.16 Interactions of the environmental factors

17.16.1 As a requirement of the Planning and Development Regulations 2001, as amended, and the EPA guidelines (2022), the inter-relationships between receptors should be identified and assessed.

17.16.2 This section considers the inter-related impacts. The inter-relationships assessment chapter (Volume 8, Chapter 1: Interactions of the Environmental Factors) sets out an assessment of the whole project.

17.16.3 Inter-related effects consider impacts from the construction, operation or decommissioning of the project on the same receptor.

17.16.4 Such inter-related effects include both:

- Project lifetime effects: Assessment of the scope for effects that occur throughout more than one phase of the project (construction, operation and maintenance, and decommissioning); to interact to potentially create a more significant effect on a receptor than if just assessed in isolation in these three key project stages (e.g. subsea noise effects from piling, operational WTGs, vessels and decommissioning); and
- Receptor-led effects: Assessment of the scope for all effects to interact, spatially and temporally, to create inter-related effects on a receptor. Receptor-led effects might be short-term, temporary or transient effects, or incorporate longer term effects.

17.16.5 Interactions between effects on different factors have been considered in Table 49.

Table 49 Matrix of potential interactive effects on receptor from project lifetime effects and receptor-led effects.

Impact Type	Residual Effects			
	Construction	Operation	Decommissioning	Project Lifetime Effects
Impact on economic value arising from Dublin Array	**Moderate beneficial** (assuming Greater Dublin Coordination port) **Not significant** (assuming no Greater Dublin Co-ordination port)	Not significant	Not significant	Moderate beneficial

Impact Type	Residual Effects Construction	Operation	Decommissioning	Project Lifetime Effects
Impacts on employment arising from Dublin Array	Moderate beneficial	Not significant	Not significant	**Moderate beneficial**
Impacts on the volume and value of the visitor economy as a result offshore infrastructure	Not significant	Not significant	Not significant	Not significant
Impacts on enjoyment of marine and coastal recreational and visitor assets arising from offshore infrastructure	Moderate Adverse – Scuba diving **Slight Adverse -** Bathers, people engaging in watersports activities, boat based recreational fishing/angling and people engaging in recreational sailing and cruising **Not Significant-** Shore based recreational fishing/angling and users of coastal paths, cycle routes, protected areas and areas of natural beauty and outdoor visitor attractions on the coast.	Not significant (usually) and up to **Slight Adverse** during repairs: Bathers, people engaging in watersports activities, based recreational fishing/angling, recreational sailing/cruising, and scuba diving. **Not significant:** Users of coastal paths, cycle routes, protected areas and areas of natural beauty and outdoor visitor attractions on the coast.	Moderate Adverse – Scuba diving **Slight Adverse -** Bathers, people engaging in watersports activities, boat based recreational fishing/angling and people engaging in recreational sailing and cruising **Not Significant-** Shore based recreational fishing/angling and users of coastal paths, cycle routes, protected areas and areas of natural beauty and outdoor visitor attractions on the coast.	Slight Adverse to Moderate Adverse – Scuba diving **Slight Adverse -** Bathers, people engaging in watersports activities, boat based recreational fishing/angling and people engaging in recreational sailing and cruising **Not Significant-** Shore based recreational fishing/angling and users of coastal paths, cycle routes, protected areas and areas of natural beauty and outdoor

Impact Type	Residual Effects Construction	Operation	Decommissioning	Project Lifetime Effects
				visitor attractions on the coast.
Wider economic impacts from disruptions to commercial fishing	Slight Adverse	Slight Adverse	Slight Adverse	Slight Adverse
Impact of the onshore electrical system on local recreation and tourism receptors	Slight Adverse	N/A	Slight Adverse	No Impact - Slight Adverse
Impact of the onshore electrical system on local social community infrastructure receptors	Slight Adverse	N/A	Slight Adverse	No Impact - Slight Adverse
Receptor led effects				
Visitors and recreational users may experience overlapping impacts from both onshore and the visual impact of offshore infrastructure, however these impacts will not increase the overall residual effect.				

17.17 Transboundary statement

17.17.1 Transboundary effects arise when impacts from Dublin Array affects the environment of another European Economic Area state(s) or the UK.

17.17.2 For socio-economics, the potential for transboundary effects has been identified in relation to the potential impact upon the economies of other states. This may arise through the purchase of project components, equipment and the sourcing of labour from companies based outside of Ireland. In addition, if the construction staging port was located outside of Ireland (for example Wales) then the host country will benefit in terms of jobs and GVA. However, this will be negligible in the context of the scale of other economies from which project components (e.g. turbines) are purchased from. As a result, transboundary impacts associated with socio-economics are not considered further.

17.17.3 No significant transboundary seascape, landscape and visual effects are likely to arise. For the assessment of tourism and recreation receptors, the only potential for transboundary effects is the potential for the displacement of tourist accommodation and therefore tourism visitors by construction workers in the vicinity of the construction port (should this be located outside of Ireland). In practice, the number of workers seeking local accommodation in the vicinity of the (non-Ireland) construction port can be expected to be accommodated in visitor accommodation within a 45-minute drive of the port and is likely to be non-significant.

17.18 Summary of effects

Table 50 Summary of socio-economic, tourism and recreation effects

Description of effect	Effect	Possible mitigation measures	Residual effect
Construction			
Impact 1: Economic value arising from construction of Dublin Array	**Moderate beneficial** (assuming Greater Dublin coordination port) **Not significant** (assuming no Greater Dublin coordination port)	N/A	**Moderate beneficial** (assuming Greater Dublin coordination port) **Not significant** (assuming no Greater Dublin coordination port)
Impact 2: Employment arising from construction of Dublin Array	Moderate beneficial (assuming Greater Dublin coordination port) **Not significant** (assuming no Greater Dublin coordination port)	N/A	Moderate beneficial (assuming Greater Dublin coordination port) **Not significant** (assuming no Greater Dublin coordination port)
Impact 3: Effect on the volume and value of the visitor economy as a result of construction of offshore infrastructure	Not significant	N/A	No significant adverse residual effects
Impact 4: Effect on enjoyment of marine and coastal recreational and visitor assets arising from construction of offshore infrastructure	Moderate adverse – Scuba divers **Slight Adverse** - Bathers, people engaging in watersports activities, boat based recreational fishing/angling and people engaging in recreational sailing and cruising **Not Significant**- Shore based recreational fishing/angling and	N/A	Moderate adverse – Scuba divers **Slight Adverse** - Bathers, people engaging in watersports activities, boat based recreational fishing/angling and people engaging in recreational sailing and cruising **Not Significant**- Shore based recreational fishing/angling and

Description of effect	Effect	Possible mitigation measures	Residual effect
	users of coastal paths, cycle routes, protected areas and areas of natural beauty and outdoor visitor attractions on the coast.		users of coastal paths, cycle routes, protected areas and areas of natural beauty and outdoor visitor attractions on the coast.
Impact 5: Wider economic impacts from disruptions to commercial fishing during construction	**Moderate Adverse** (on the potting industry) **Slight Adverse** (on the rest of the fishing industry)	Implementation of FMMS, including cooperation agreements and associated payments (for the potting fleet)	Slight Adverse
Impact 6: Impact of the onshore electrical system on tourism and recreation receptors	Slight Adverse	N/A	Slight Adverse
Impact 7: Impact of the onshore electrical system on local social community infrastructure receptors	Slight Adverse	N/A	Slight Adverse
Operation and maintenance			
Impact 8: Economic value arising from operation of Dublin Array	Not significant	N/A	No significant beneficial residual effects
Impact 9: Employment arising from operation of Dublin Array	Not significant	N/A	No significant beneficial residual effects
Impact 10: Impact on the volume and value of the visitor economy as a result of operation of offshore infrastructure	Not significant	N/A	No significant adverse residual effects
Impact 11: Impact on enjoyment of marine and coastal recreational and visitor assets arising	Not significant (usually) and **up to Slight Adverse during repairs:** Bathers, people	N/A	Not significant (usually) and **up to Slight Adverse during repairs:** Bathers, people

Description of effect	Effect	Possible mitigation measures	Residual effect
from operation of offshore infrastructure	engaging in watersports activities, based recreational fishing/angling, recreational sailing/cruising, scuba diving and **Not significant:** Users of coastal paths, cycle routes, protected areas and areas of natural beauty and outdoor visitor attractions on the coast.		engaging in watersports activities, based recreational fishing/angling, recreational sailing/cruising, scuba diving and **Not significant:** Users of coastal paths, cycle routes, protected areas and areas of natural beauty and outdoor visitor attractions on the coast.
Impact 12: Wider economic impacts from disruptions to commercial fishing during operation	**Moderate Adverse** (for the potting industry) **Slight Adverse** (on the rest of the fishing industry)	Implementation of FMMS and gear trials.	Slight Adverse
Decommissioning			
Impact 13: Economic value arising from decommissioning of Dublin Array	Not significant	N/A	No significant adverse residual effects
Impact 14: Employment arising from decommissioning of Dublin Array	Not significant	N/A	No significant adverse residual effects
Impact 15: Impact on the volume and value of the visitor economy as a result of decommissioning of offshore infrastructure	Not significant	N/A	No significant adverse residual effects
Impact 16: Impact on enjoyment of marine and coastal recreational and visitor assets arising	Moderate adverse – Scuba divers **Slight Adverse** - Bathers, people	N/A	Moderate adverse – Scuba divers **Slight Adverse** - Bathers, people

Description of effect	Effect	Possible mitigation measures	Residual effect
from decommissioning of offshore infrastructure	engaging in watersports activities, boat based recreational fishing/angling and people engaging in recreational sailing and cruising **Not Significant**- Shore based recreational fishing/angling and users of coastal paths, cycle routes, protected areas and areas of natural beauty and outdoor visitor attractions on the coast.		engaging in watersports activities, boat based recreational fishing/angling and people engaging in recreational sailing and cruising **Not Significant**- Shore based recreational fishing/angling and users of coastal paths, cycle routes, protected areas and areas of natural beauty and outdoor visitor attractions on the coast.
Impact 17: Wider economic impacts from disruptions to commercial fishing during decommissioning	**Moderate Adverse** (on the potting industry) **Slight Adverse** (on the rest of the fishing industry)	Implementation of FMMS, including cooperation agreements and associated payments (for the potting fleet)	Slight Adverse
Impact 18: Impact of the onshore electrical system on tourism and recreation receptors	Slight Adverse	N/A	Negligible to Slight Adverse
Impact 19: Impact of the onshore electrical system on local social community infrastructure receptors	Slight Adverse	N/A	Negligible to Slight Adverse
Cumulative effects			
Impact on economic value	Moderate beneficial	N/A	No significant adverse residual effects
Impacts on employment	Moderate beneficial	N/A	No significant adverse residual effects
Impacts on the volume and value of the visitor economy	Not significant	N/A	No significant adverse residual effects

Description of effect	Effect	Possible mitigation measures	Residual effect
Impacts on enjoyment of marine and coastal recreational and visitor assets	**Slight Adverse** - Bathers, people engaging in watersports activities, and boat based recreational fishing/angling. **Not Significant**- Shore based recreational fishing/angling and users of coastal paths, cycle routes, protected areas and areas of natural beauty and outdoor visitor attractions on the coast.	N/A	**Slight Adverse** - Bathers, people engaging in watersports activities, and boat based recreational fishing/angling. **Not Significant**- Shore based recreational fishing/angling and users of coastal paths, cycle routes, protected areas and areas of natural beauty and outdoor visitor attractions on the coast.
Wider economic impacts from disruptions to commercial fishing	**Moderate Adverse** (on the potting industry) **Slight Adverse** (on the rest of the fishing industry)	Implementation of FMMS, including unified effort between the Phase 1 projects to identify mitigation measures relevant to fishing on the east coast of Ireland. (for the potting fleet)	Slight Adverse
Impact of the onshore electrical system on tourism and recreation receptors	Slight Adverse	N/A	Slight Adverse
Impact of the onshore electrical system on local social community infrastructure receptors	Slight Adverse	N/A	Slight Adverse
Transboundary			
Impacts on employment and economic value in other states arising purchase of project components, equipment and the	Not significant	N/A	No significant adverse residual effects

Description of effect	Effect	Possible mitigation measures	Residual effect
sourcing of labour from companies based outside of Ireland.			
Reduction in available tourist accommodation leading to displacement of tourist tourism visitors by construction workers working in the vicinity of the construction port	Not significant (and will only occur if the construction port is located outside of Ireland)	N/A	No significant adverse residual effects

17.19 References

Arup Economics and Planning (2002) North Hoyle OWF: Socio-economic and Tourism Impact Study. Available at: https://www.arup.com [Accessed: January 2025]

BIM Ireland's Seafood Development Agency, 2022, Facts and Figures. Available at: https://bim.ie/a-seafood-way-of-life/facts-and-figures/ [Accessed: January 2024]

Council Journal, 2023, New €10m Fishing Pier At Howth Fishery Harbour Centre Officially Named. Available at: New €10m Fishing Pier at Howth Fishery Harbour Centre Officially Named - Council.ie [Accessed: January 2023]

Chaji and Werner, 2023, Economic Impacts of OWFs on Fishing Industries: Perspectives, Methods, and Knowledge Gaps.

CSO, 2012, Census 2011 Labour Force. Available at: https://data.cso.ie/table/EB066 [Accessed: November 2023]

CSO, 2018, Regional Population Projections. Available at: https://www.cso.ie/en/statistics/population/regionalpopulationprojections/ [Accessed: November 2023]

CSO, 2022a, GVA. Available at: https://data.cso.ie/table/RAA05 [Accessed: November 2023]

CSO, 2022b, Pulse Survey - Our Lives Outdoors April-May 2022.

CSO, 2023a, Labour Force Survey Quarterly Series. Available at: QLF08 - Persons aged 15 years and over [Accessed: January 2025]

CSO, 2023b, Census 2016 and 2022 Population. Available at: https://data.cso.ie/table/FY006B [Accessed: November 2023]

CSO, 2023c, Census 2022 Labour Force. Available at: https://data.cso.ie/table/F7001 [Accessed: November 2023]

CSO, 2023d, Mean and Median Annual Earnings. Available at: https://data.cso.ie/table/NEA05 [Accessed: November 2023]

CSO, 2023e, Air and Sea Travel Statistics. Available at: Air and Sea Travel Statistics May 2023 – CSO – Central Statistics Office [Accessed: November 2023]

CSO (2023f) Household Travel Survey: Quarter 4 and Year 2023. Available at: https://www.cso.ie/en/releasesandpublications/ep/p-hts/householdtravelsurveyquarter4andyear2023/ [Accessed: January 2025].

CSO (2024a) Household Travel Survey: Quarter 4 and Year 2023. Available at: https://www.cso.ie/en/releasesandpublications/ep/p-hts/householdtravelsurveyquarter4andyear2023/ [Accessed: January 2025].

CSO (2024b) Air and Sea Travel Statistics May 2024. Available at: https://www.cso.ie/en/statistics/tourismandtravel/airandseatravelstatistics/ (Accessed: January 2025).

CSO (2024c) Ireland 2024: The Year in Numbers. Available at: https://www.cso.ie/en/releasesandpublications/ep/p-yin/ireland2024theyearinnumbers/ [Accessed: January 2025]

Danish Energy Agency (2016) Samsø Wind Farm: A Case Study of Sustainable Tourism Development. Available at: https://www.danishenergyagency.dk [Accessed: January 2025]

Department of the Environment, Climate and Communications, 2017, Guidance on EIS and NIS Preparation for Offshore Renewable Energy Projects.

Department of Housing, Planning and Local Government, 2019, Wind Energy Development Guidelines. Available at: 46097_6e68ea81b8084ac5b7f9343d04f0b0ef (1).pdf [Accessed: November 2023]

Dublin County Council, 2016, Irish Tourist Industry Confederation. Available at: https://councilmeetings.dublincity.ie/documents/s3542/Economic%20Impact%20Tourism%2022%20March2016.pdf [Accessed: November 2023]
Dublin Bay Biosphere Partnership, 2022, Dublin Bay Biosphere Biodiversity Conservation and Research Strategy 2022-2026.
Dún Laoghaire-Rathdown County Council. (n.d.). *Economic Plan for Dún Laoghaire Harbour and Spatial & Economic Study for Dún Laoghaire Town*. Available at: https://www.dlrcoco.ie/business/economic-plan-d%C3%BAn-laoghaire-harbour-and-spatial-economic-study-d%C3%BAn-laoghaire-town#d%C3%BAn-laoghaire-harbour-plan [Accessed: February 2025]
Dún Laoghaire-Rathdown County Council. (2015). Green Infrastructure Strategy 2015-2022. Dún Laoghaire-Rathdown County Council. Available at: https://www.dlrcoco.ie/sites/default/files/atoms/files/appendix_15_green_infrastructure_strategy_1_0.pdf [Accessed January 2025]
Dún Laoghaire-Rathdown County Council (2024a) dlr Tourism and Marketing Strategy 2024-2028. Available at: https://www.dlrcoco.ie/tourism-strategy/dlr-tourism-and-marketing-strategy [Accessed: January 2025]
Dún Laoghaire-Rathdown County Council, 2023, Cruise ships survey report for 2022. https://www.dlrcoco.ie/sites/default/files/atoms/files/cruise_ships_survey_analysis.pdf [Accessed: November 2023]
Dún Laoghaire-Rathdown County Council, 2024. Specified Engineering Works Report: Proposed Greenway Cycle Path.
Eastern Regional Fisheries Board, 2016. A Guide to Sea Angling in the Eastern Fisheries Region.
Fáilte Ireland, 2018, Report on Visitors Awareness and Perceptions of the Irish Landscape.
Fáilte Ireland, 2019, Tourism Facts 2019: Dublin. Available at: Dublin-Tourism-Facts-FINAL.pdf [Accessed: January 2025]
Fáilte Ireland, 2019b, Annual Report 2019. Available at: Failte-Ireland-2019-Annual-Report.pdf [Accessed: November 2023]
Fáilte Ireland, 2020, Visitors to: Top Fee Charging Visitor Attractions 2019. Available at: https://www.Fáilteireland.ie/FáilteIreland/media/WebsiteStructure/Documents/3_Research_Insights/4_Visitor_Insights/Visitors-to-Top-Fee-Charging-Visitor-Attractions-2019.pdf?ext=.pdf [Accessed: November 2023]
Fáilte Ireland, 2021, Tourism Facts 2019. Available at: https://www.Fáilteireland.ie/FáilteIreland/media/WebsiteStructure/Documents/3_Research_Insights/4_Visitor_Insights/KeyTourismFacts_2019.pdf?ext=.pdf [Accessed: November 2023]
Fáilte Ireland, 2022a, Tourism Barometer December 2022. Available at: https://www.Fáilteireland.ie/FáilteIreland/media/WebsiteStructure/Documents/Publications/Fáilte-ireland-tourism-barometer-december-2022.pdf?ext=.pdf [Accessed: November 2023]
Fáilte Ireland, 2022b, Accommodation Occupancy Survey 2022. https://www.Fáilteireland.ie/FáilteIreland/media/WebsiteStructure/Documents/Publications/Fáilte-ireland-accommodation-occupancy-survey-2022.pdf?ext=.pdf [Accessed: November 2023]
Fáilte Ireland, 2022c, Hotel Sector Review Autumn 2022. https://www.Fáilteireland.ie/FáilteIreland/media/WebsiteStructure/Documents/Publications/hotel-performance-review-septemeber-2022.pdf?ext=.pdf [Accessed: November 2023]

Fáilte Ireland, 2022. EIAR Guidelines for the Consideration of Tourism and Tourism Related Projects. Available at: https://www.scribd.com/document/576567531/EIAR-Guidelines-2022-Web [Accessed: January 2025]
Fáilte Ireland, 2023a. Visitors to: Top Fee Charging Visitor Attractions 2022. https://www.Fáilteireland.ie/FáilteIreland/media/WebsiteStructure/Documents/Publications/visitor-attractions-survey-2022.pdf?ext=.pdf [Accessed: November 2023]
Fáilte Ireland, 2023b, Tourism Barometer September 2023. https://www.Fáilteireland.ie/FáilteIreland/media/WebsiteStructure/Documents/Publications/Fáilte-ireland-tourism-barometer-september-2023.pdf?ext=.pdf [Accessed: November 2023]
Fáilte Ireland, 2023c. EIAR Guidelines for the Consideration of Tourism and Tourism Related Projects.
Fáilte Ireland (2023d). Dublin Regional Tourism Development Strategy 2023-2027. Available at: https://www.failteireland.ie/FailteIreland/media/WebsiteStructure/Documents/Dublin/Dublin-Regional-Tourism-Development-Strategy.pdf [Accessed: January 2025]
Fáilte Ireland, 2024. Accommodation Occupancy Survey 2023.
Gill, A.B., S. Degraer, A. Lipsky, N. Mavraki, E. Methratta, and R. Brabant. 2020. Setting the context for offshore wind development effects on fish and fisheries. Oceanography 33(4):118–127
Hello Safe, 2021, Tourism Facts 2019, https://hellosafe.ca/en/blog/tourism-ireland-2020#:~:text=Indeed%2C%20the%20decrease%20rate%20of%20entries%20per%20geographical,%287%2C037%2C200%20tourists%20in%202019%20%3B%201%2C747%2C100%20in%202020%29. [Accessed: November 2023]
HM Government, 2020. White Paper
Irish Tourism Industry Confederation (ITIC), 2023. Stimulating Accommodation Capacity: A Review and Strategy. Available at: https://www.itic.ie/wp-content/uploads/2023/08/StimulatingAccommodationCapacity_Jim-Power_ITIC_Aug2023.pdf
Irish Wind Association, 2020. Harnessing our potential https://windenergyireland.com/images/files/final-harnessing-our-potential-report-may-2020.pdf [Accessed November 2023]
Knoema, 2021, Ireland Contribution of travel and tourism to GDP. https://knoema.com/atlas/Ireland/topics/Tourism/Travel-and-Tourism-Total-Contribution-to-GDP/Contribution-of-travel-and-tourism-to-GDP-percent-of-GDP [Accessed: November 2023]
KPMG, prepared for Wind Energy Ireland, Economic impact of onshore wind in Ireland. Economic impact of onshore wind in Ireland (windenergyireland.com) [Accessed: November 2023]
Liburd, Janne & Dragin-Jensen, Christian & Hjalager, Anne-Mette. (2024). Tourism and Turbines An exploratory literature review of the relations between tourism and wind turbines.
Lindner, S., et al. (2019) 'Impact of OWFs on tourism in coastal regions: The case of the Borkum OWF, Germany', Journal of Environmental Economics, 45(2), pp. 123-139. Available at: https://www.journals.sagepub.com [Accessed: January 2025]
Office for National Statistics, 2013, The regional value of tourism in the UK: 2013, https://www.ons.gov.uk/peoplepopulationandcommunity/leisureandtourism/articles/theregionalvalueoftourismintheuk/2013 [Accessed: November 2023].
Plymouth Marine Laboratory, 2024, UK fishing community shares its views on offshore wind. UK fishing community shares its views on offshore wind - Plymouth Marine Laboratory [Accessed November 2024].
Power, J. (2023) Stimulating Accommodation Capacity. Irish Tourism Industry Confederation (ITIC). Available at: https://www.itic.ie/wp-

content/uploads/2023/08/StimulatingAccommodationCapacity_Jim-Power_ITIC_Aug2023.pdf [Accessed: January 2025]
RWE and N Power Renewables (2005) Gwynt Y Môr OWF: Impact Assessment on Tourism and Economy. Available at: https://www.rwe.com [Accessed: January 2025]
Scottish Government, 2018, Sectoral marine plan for offshore wind energy: social and economic impact assessment scoping report. A.15. Tourism - Sectoral marine plan for offshore wind energy: social and economic impact assessment scoping report - gov.scot (www.gov.scot) [Accessed: November 2023].
Scottish Government, 2022, Public Perceptions of OWF Developments in Scotland, OWF developments - public perceptions: survey - gov.scot (www.gov.scot)
Sea Fisheries Protection Authority, 2014, Sea-Fisheries Protection Authority Highlights the Importance of Compliance within the Whelk Fishery https://www.sfpa.ie/Who-We-Are/News/Details/sea-fisheries-protection-authority-highlights-the-importance-of-compliance-within-the-whelk-fishery
Sea Fisheries Protection Authority, 2023, Landings statistics data for Irish-registered vessels.
Sea Fisheries Protection Authority, 2024, 2023 Landings Report.
Statista. (n.d.). Total attendance at horse race events in Ireland in 2019, by racecourse. Statista. Available at: https://www.statista.com/statistics/709957/horse-race-events-total-attendance-ireland-by-racecourse/ [Accessed 8 Jan. 2025]
Statista, 2020, Number of overseas tourist visits to Ireland from 2012 to 2019, https://www.statista.com/statistics/660029/overseas-total-tourists-in-ireland/. [Accessed: November 2023]
Statista (2024a) Total contribution of travel and tourism to GDP in Ireland in 2019 and 2023, with a forecast for 2024 and 2034 (in billion euros). Available at: https://www.statista.com/statistics/941487/travel-and-tourism-s-total-contribution-to-gdp-in-ireland/ [Accessed: January 2025]
Statista (2024b) Travel and tourism's total contribution to GDP in Ireland 2019-2034. Available at: https://www.statista.com/statistics/941487/travel-and-tourism-s-total-contribution-to-gdp-in-ireland/ [Accessed: January 2025]
Stiftung Offshore-Windenergie and REM Consult, 2013, The Impact of Offshore Wind Energy on Tourism, Good Practices and Perspectives for the South Baltic Region
Tethys (2022) Public Perceptions of OWFs in Scotland. Available at: https://tethys.pnnl.gov/sites/default/files/publications/pubperc-2022.pdf [Accessed: January 2025]
Tourism Ireland, 2019a, Island of Ireland Overseas Tourism Performance, https://www.tourismireland.com/docs/default-source/visitor-facts-and-figures/visitor-facts-and-figures-2019.pdf [Accessed: November 2023]
Tourism Ireland (2024a) Situation & Outlook Analysis Report May 2024. Available at: https://www.tourismireland.com/docs/default-source/situation-and-outlook-analysis-reports-%28soar%29/situation-and-outlook-analysis-report---may-2024.pdf?sfvrsn=ea5c2261_1 [Accessed: January 2025]
Technological University Dublin, 2009, Dublin Visitor Survey, https://arrow.tudublin.ie/cgi/viewcontent.cgi?article=1005&context=datas [Accessed: November 2023]
UK Government, Department for Energy Security & Net Zero, 2023 Overarching National Policy Statement for Energy (EN-1). EN-1 Overarching National Policy Statement for Energy (publishing.service.gov.uk) [Accessed: November 2023]
United Nations, 2008, International Recommendations for Tourism Statistics 2008.

University of Delaware, 2010, The effect of Wind Power Installations on Coastal Tourism. (PDF) The Effect of Wind Power Installations on Coastal Tourism (researchgate.net) [Accessed: November 2023]
University of Galway (2020). A survey of domestic coastal and marine tourism and leisure activities in Ireland, SEMRU Report Series
US Department of the Interior Bureau of Ocean Energy Management, 2018, Atlantic Offshore Wind Energy Development: Values and Implications for Recreation and Tourism 5662.pdf (boem.gov) [Accessed: March 2024]
Vanclay. (2015), https://www.iaia.org/uploads/pdf/SIA_Guidance_Document_IAIA.pdf. Social Impact Assessment: Guidance for assessing and managing the social impacts of the projects. [Accessed: November 2023].
Wind Energy Ireland, 2022, National Port Study, https://www.windenergyireland.com/images/files/final-national-ports-study.pdf [Accessed: November 2023]
WTTC (2024) Travel & Tourism - Economic Impact 2023. Available at: https://uploads-ssl.webflow.com/6329bc97af73223b575983ac/647f1879aa1bb7126a522905_EIR2023-Ireland.pdf [Accessed: January 2025]

Annex A Legislation and policy context

Table A 1 Legislation and policy context

Policy/ legislation/ publisher	Name/reference/key provisions	What is covered/section where provision is addressed
Statutory		
Legislation		
	Directive 2008/56/EC (Marine Strategy Framework Directive) Transposed into Irish law by: European Communities (Marine Strategy Framework) Regulations 2011 (S.I. No. 249 of 2011) https://www.irishstatutebook.ie/eli/2011/si/249/made/en/pdf And amended by the European Communities (Marine Strategy Framework) (Amendment) Regulations 2017 (S.I. No. 265/2017) and the European Communities (Marine Strategy Framework) (Amendment) Regulations 2018 (S.I. No. 648/2018)	The EU directive and transposing legislation aims to protect the marine ecosystem and biodiversity upon which our health and marine-related economic and social activities depend. This chapter assesses the tourism and recreation impacts of the Proposed Development on the marine environment in sections 17.12, 17.13 and 17.14.
Planning policy and development control		
Department of Energy and Climate Change (DECC), 2014	Offshore Renewable Energy Development Plan https://assets.gov.ie/27215/2bc3cb73b6474beebbe810e88f49d1d4.pdf	Provides a policy context for the development of offshore areas for developments such as offshore wind.

Policy/ legislation/ publisher	Name/reference/key provisions	What is covered/section where provision is addressed
DCCAE, 2024	Ireland's National Energy and Climate Plan 2021-2030, as amended in July 2024 www.gov.ie/pdf/?file=https://assets.gov.ie/299744/9a308db2-cbd5-46e8-8674-e939dca87263.pdf#page=null	The National Energy and Climate Plan was prepared in accordance with Regulation (EU) 2018/1999 on the Governance of the Energy Union and Climate Action. It outlines Ireland's energy and climate policies in detail for the period from 2021 to 2030 and provides projections and ambitions towards 2050.
Department of Environment, Climate and Communication, 2024	Climate Action Plan 2024 www.gov.ie/pdf/?file=https://assets.gov.ie/296414/7a06bae1-4c1c-4cdc-ac36-978e3119362e.pdf#page=null	Among the most important measures in the plan is to increase the proportion of renewable electricity to up to 80% by 2030. Key to achieving this measure includes a target of at least 5 Gigawatts (GW) of offshore wind energy with production of 2 GW of renewable hydrogen sourced from offshore wind to be in development by 2030. Table 12.6 of the plan noted the key actions to deliver abatement in electricity sector for the period 2024-2025.
Dún Laoghaire-Rathdown Council, 2022	Dún Laoghaire-Rathdown County Development Plan 2022-2028	The Dún Laoghaire-Rathdown County Development Plan 2022 – 2028 was adopted in March 2022. The adopted Plan came into effect on the 21st April 2022. The Vision for Dún Laoghaire-Rathdown 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 five Strategic Outcomes that underpin the Plan: ▪ Climate resilient County ▪ Compact and connected County ▪ Liveable County of Towns and Villages ▪ Inclusive and heathy County ▪ Vibrant economic County. Particularly relevant polices are: ▪ Policy Objective E2 - Knowledge Economy: To promote the development of cultural and creative enterprises in the County.

Policy/ legislation/ publisher	Name/reference/key provisions	What is covered/section where provision is addressed
		▪ Policy Objective E5 - Education and Skills: To sustain the existing high levels of educational attainment and skilled workforce, to encourage employment generation to maintain this resource within the County and to promote the availability of education opportunities to all residents in Dún Laoghaire-Rathdown. ▪ Policy Objective E6 - Tackling Unemployment: To support the work undertaken by the Education and Training Boards in relation to courses provided under Safety of Life at Sea (SOLAS) and the establishment of Community Training Centres, Local Training Initiatives and Specialist Training Provision in the County. ▪ Policy Objective E18 - Maritime Economy: Support the sustainable development of the maritime economy. ▪ Policy Objective E20 - Low Carbon Economy: Support the transition to a low carbon economy. Policy Objective CA11 – Onshore and Offshore Wind Energy and Wave Energy: To support in conjunction with other relevant agencies, wind energy initiatives, both onshore and offshore, wave energy, onshore grid connection cable installation and reinforcements to facilitate offshore renewable energy development when these are undertaken in an environmentally acceptable manner.
Wicklow County Council	Wicklow County Development Plan 2022 - 2028	The **Wicklow County Development Plan 2022 - 2028** sets out a strategic framework for the sustainable development of County Wicklow over a six-year period, with a long-term vision beyond 2028. ▪ The plan seeks to support all forms of employment creation, especially where this can mitigate long distance commuting, subject to the proper planning and sustainable development of the area and compliance with all other objectives of the plan. ▪ The plan notes that there is a significant opportunity for Wicklow to take advantage of the Offshore Wind Sector and any associated spin offs such

Policy/ legislation/ publisher	Name/reference/key provisions	What is covered/section where provision is addressed
		as onshore 'operations and maintenance' facilities and the creation of a 'local offshore wind enterprise zones' ▪ The Plan includes support for the potential for facilitating offshore renewable energy development at Wicklow and Arklow ports.
Guidelines and technical standards		
EPA Guidelines on the Information to be contained in EIARs (2022).	An EIAR does not generally require assessment of land-use planning, demographic issues or detailed socio-economic analysis unless issues such as economic or settlement patterns give rise directly to specific new developments and associated effects.	Whilst the proposed onshore electrical system works will not result in any associated development such as a housing or commercial development it will lead to the generation of employment at both the construction and operational phases as well as inward investment which may affect the local supply chain. On this basis, the EIAR baseline contains a summary of key socio-economic baseline data relating to the study area.
Non-Statutory		
Planning policy and development control		
European Commission	Clean Energy for EU Islands Initiative 2018 Clean energy for EU islands - Publications Office of the EU (europa.eu)	As part of the 'Clean energy for all Europeans' package, the Clean energy for EU islands initiative, launched in 2017, provides a long-term framework to help islands generate their own sustainable, low-cost energy. This will result in: ▪ The creation of new jobs and business opportunities, boosting the islands' economic self-sufficiency. ▪ Reduced energy costs and greatly increased production of renewable energy. ▪ Construction of energy storage facilities and demand response systems, using the latest technologies. ▪ Better energy security for islands, which will be less reliant on imports. ▪ Improved air quality, lower greenhouse gas emissions, and less impact on islands' natural environments. ▪ The third phase of the initiative (2023-2027) focuses on providing technical support to 30 islands or groups of islands for three years.

Policy/ legislation/ publisher	Name/reference/key provisions	What is covered/section where provision is addressed
		▪ The initiative builds on previous phases and includes studies and recommendations to support renewable energy integration and overcome regulatory barriers.
Government of Ireland, 2021	Ireland National Development Plan 2021-2030 https://assets.gov.ie/200358/a36dd274-736c-4d04-8879-b158e8b95029.pdf	The National Development Plan sets out the Government's over-arching investment strategy and budget for the period 2021-2030. It is an ambitious plan that balances the significant demand for public investment across all sectors and regions of Ireland with a major focus on improving the delivery of infrastructure projects to ensure speed of delivery and value for money.
Submitted to Dún Laoghaire-Rathdown Council and prepared by KPMG, 2021	Dún Laoghaire 2040 A Spatial and Economic Study for Dún Laoghaire Town	The economic study for Dún Laoghaire Town sets out a delivery roadmap for the economic development of Dún Laoghaire Town. This includes the following themes and relevant actions: 1) Foundations for a strong economy ▪ Enhancing town and harbour linkages ▪ An animated Dún Laoghaire – town and harbour 2) Supporting existing and attracting new businesses ▪ Creating spaces for business ▪ Enterprise supports 3) A desirable town ▪ Unifying brand for town and harbour ▪ Promoting the positives
Submitted to Dún Laoghaire-Rathdown Council and Prepared by Indecon International Economic Consultants, 2021	Economic Plan for Dún Laoghaire Harbour	Dún Laoghaire-Rathdown County Council appointed Indecon International Economic Consultants ('Indecon') to provide independent expert advice to input to 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 aim of the plan is to set out a roadmap to guide the ongoing development of Dún Laoghaire Harbour. Recommendation 5 of the plan is to develop Dún Laoghaire as an operation and maintenance base to support offshore renewable energy.

Policy/ legislation/ publisher	Name/reference/key provisions	What is covered/section where provision is addressed
Department of Transport, Tourism and Sport, 2015	People, Place and Policy Growing Tourism to 2025 https://assets.gov.ie/15792/8b462712683748e7bcec6c7d5c7ecd2a.pdf	Key points from the policy: ▪ The policy emphasises sustainable tourism development, balancing economic growth with environmental protection. The economic impacts on tourism and the economy are considered in sections 17.12 to 17.14 of this report. ▪ The EIA provides an opportunity to engage local communities in tourism planning and development to ensure that tourism growth benefits local populations.
Fáilte Ireland, 2023	Dublin Regional Tourism Development Strategy 2023 – 2027 https://www.Failteireland.ie/FailteIreland/media/WebsiteStructure/Documents/Dublin/Dublin-Regional-Tourism-Development-Strategy.pdf	The Dublin Regional Tourism Development Strategy 2023-27 is a roadmap for the tourism industry and all stakeholders involved in tourism in the region to navigate the current challenges and steer a course towards a sustainable recovery and continued success. The Regional Tourism Development Strategy represents a 10-year vision for the sustainable development of tourism in Dublin, together with a 5-year strategy to guide the achievement of that vision. It identifies the elements required at a strategic level to unlock the commercial potential of Dublin, while exceeding the expectations of visitors, protecting the environment and enhancing the lives of local communities.
Government of Ireland, 2023	Embracing Ireland's Outdoors: National Outdoor Recreation Strategy 2023-2027 https://www.gov.ie/pdf/?file=https://assets.gov.ie/240596/8f843f7b-c08c-42eb-bc5c-f31d6bdea38b.pdf#page=null	The National Outdoor Recreation Strategy aims to shape the future of outdoor recreation in Ireland over the next four years. It will also provide a strong strategic focus to underpin future investment in the sector, given that €1.6 billion has been invested in the sector over the past four years.
Guidelines and technical standards		
National Parks and Wildlife Service (NPWS), 2009	Appropriate Assessment of Plans and Projects in Ireland Guidance for Planning Authorities https://www.npws.ie/sites/default/files	Provides background information on nature conservation directives, Natura 2000 sites, Articles 6(3) and 6(4) of Habitats Directive, terminology, and how these items should be applied by planning authorities in determining Appropriate Assessment.

Policy/ legislation/ publisher	Name/reference/key provisions	What is covered/section where provision is addressed
	/publications/pdf/NPWS_2009_AA_Guidance.pdf	
Fáilte Ireland 2023	EIAR Guidelines for the Consideration of Tourism and Tourism Related Projects, section 4. Assessing Tourism	Disruption to or suppression of a tourist resource or amenity can have very local or more strategic impacts, directly or indirectly- for example energy projects in a rural area can have both a negative and positive impact in different regards. There can be temporary, periodic or even seasonal impacts occurring during construction or operational periods. Impacts from the construction, operational, and decommissioning stages are included in section 17.12, 17.13, and 17.14 respectively.
Fáilte Ireland 2023c	EIAR Guidelines for the Consideration of Tourism and Tourism Related Projects, section 4. Assessing Tourism	According to the Fáilte Ireland Tourism Facts 2019 Report, the most important factors in determining the attractiveness of tourism destinations for visitors to Ireland are: ▪ Beautiful Scenery and Unspoiled Environment ▪ Hospitality ▪ Safety ▪ Nature, Wildlife and Natural Attractions ▪ History and Culture ▪ Pace of Life The baseline assessment (Section 17.6) considers the factors above. These factors used for the promotion of tourism in Ireland are also barometers of sensitivity to change in tourism sensitive or dominant locations where development may have an impact upon the tourism asset. For this reason, the assessment of sensitivity (sections 17.1.1 to17.15) considers these factors when determining the sensitivity of tourism receptors.
Fáilte Ireland 2023c	EIAR Guidelines for the Consideration of Tourism and Tourism Related Projects,	Contributors to the preparation of EIARs, including screening and scoping assessments, should be qualified and competent. Sufficient expertise in the

Policy/ legislation/ publisher	Name/reference/key provisions	What is covered/section where provision is addressed
	section 6. Consideration of Competency and Qualifications	relevant field of the project concerned, is required for the purpose of its examination by the competent authorities in order to ensure that the information provided by the developer is complete and of a high level of quality so that a full and proper assessment can be undertaken. The assessment has been undertaken by Hatch, who have experience in assessing tourism impacts for a range of UK OWF projects.
Fáilte Ireland 2022d	EIAR Guidelines for the Consideration of Tourism and Tourism Related Projects, section 7 EIAR Requirements	**Baseline assessment** Baseline descriptions are evidence based, current descriptions of environmental characteristics with consideration of likely changes to the baseline environment evidenced in planning histories, unimplemented permissions, and applications pending determination. Baseline assessments should identify any tourism sensitivities in the zone of influence of a development. This zone of influence of a development is highly dependent on its Context, Character, Significance, and Sensitivity, as outlined in the EPA EIAR Guidelines. These characteristics apply to both the development and the environment. For example, in a tourism context; The location of sensitive tourism resources that are likely to be directly affected should be highlighted, and other premises which although located elsewhere, may be the subject of in-combination impacts such as alteration of traffic flows or increased urban development. For this reason, the study area set out in section 17.4 is designed to capture any sensitive tourism receptors. The character of an area from a tourism perspective should be described and the principal types of tourism in the area. Where relevant, the specific environmental resources or attributes in the existing environment which

Policy/ legislation/ publisher	Name/reference/key provisions	What is covered/section where provision is addressed
		each group uses or values should be stated and where relevant, indicate the time, duration or seasonality of any of those activities. The character of the study area is described within section 17.6. The significance of the tourism assets or activities likely to be affected should be highlighted. Reference to any existing formal or published designation or recognition of such significance should be included. Where possible the value of the contribution of such tourism assets and activities to the local economy should also be provided. The assessment considers impacts on tourism assets within section 17.6. There is limited data available on the value of tourism assets. If there are any significant concerns or opposition to the development known to exist among tourism stakeholders and interest groups, this should be highlighted. Identify, where possible, the particular aspect of the development, which is of concern, together with the part of the existing tourism resource which may be threatened or impacted. The assessment considers stakeholder views within section 17.3. In addition, the baseline should include any methodologies employed in the study to obtain information, if particular databases are used to locate sensitive receptors they should be acknowledged. In relation to tourism information, the suggested information sources at the end of this document are a non-exhaustive list which may be of assistance in identifying tourism receptors. The baseline has used a mix of secondary sources of information in the assessment. These are outlined within section 17.6.

Annex B Offshore wind sector review

B.1 Powering Prosperity – Ireland's Offshore Wind Industrial Strategy (Government of Ireland, 2024) is Ireland's first comprehensive strategy aimed at developing a robust offshore wind energy industry. This strategy outlines 40 actions to be implemented from 2024, focusing on building a strong offshore wind supply chain and maximizing economic benefits.

B.2 Ireland is targeting at least 5 GW of offshore wind by 2030 and a longer-term offshore pipeline of projects with a capacity of 12.3 GW. This represents significant growth in the industry, especially around the key ports that have potential to host O&M and construction activities. There is potential to create around 700 permanent operation and maintenance jobs, and 2,500 jobs construction jobs in the sector by 2030.

B.3 The following diagrams summarise the total project value captured in different areas of offshore wind expenditure, both in the near and long-term. This was based on Ireland's current capability and knowledge gained from historic strengths as well as the market barriers and incentives that are commonly felt by new entrants and local suppliers within each supply chain sector of the offshore wind industry (Irish Wind Association, 2020).

B.4 There are near term (up to 2025) and longer-term opportunities for Ireland to capture value in its supply chain. In the near-term Ireland's offshore wind supply chain could grow to capture between 31-36% of total project value over the lifetime of a project. The majority of this will be in the O&M (approx. 25 percentage points) stage while some capability (approx. 10 percentage points) within the construction stage could be increased especially around electrical system installations and other secondary installation services.

B.5 The initial capture of value in the near term is associated with professional design and development services which is pre-consenting, port and marine related. There is the ability to capture CAPEX initially linked to aspects of some offshore fabrication, installation, onshore sub-station, cable laying and possibly cable manufacture. In the long-term Ireland's offshore wind supply chain could grow to capture 48-53% of the total project value according to the Irish Wind Association. This should be seen in projects close to 2030 as both the Irish market and European markets grow significantly with an increased participation from Irish companies. The approximate spilt between OPEX & CAPEX captured in Ireland at this stage will be approximately 35% and 18% of total project value respectively.

Figure B 1 Near and long-term opportunity – bottom fixed offshore wind

Source: Irish Wind Association, 2020. Potential opportunity for the Irish bottom-fixed offshore wind supply chain. Red = low, amber = medium, green = high.

B.6 If Ireland develops 3.5 GW of offshore wind by 2030 and considering this could lead to €17.93 billion of lifetime spend on supply chain provision, the opportunity for the local supply and potential economic benefit could be between €5.56bn and €6.46bn over a 34-year period.

Regional supply chain

B.7 The following maps in the figure below provides an overview at the regional level of the number of Irish suppliers that are active or have the potential to serve the offshore wind market. Dublin has the greatest presence of relevant suppliers.

Figure B 2 Regional potential for capturing offshore wind expenditure

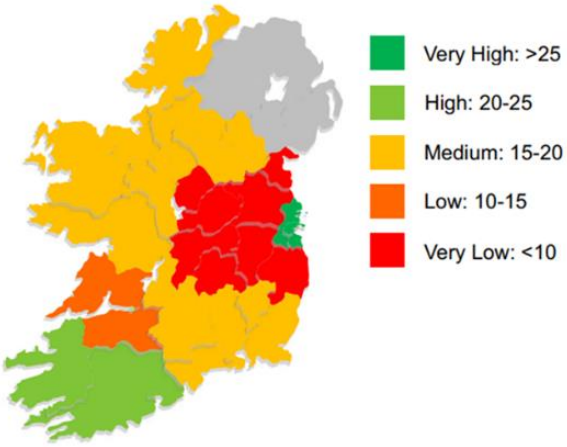


Figure 13: Regional split of companies with potential in the Irish offshore wind industry. Colours are based on number of companies, not experience.

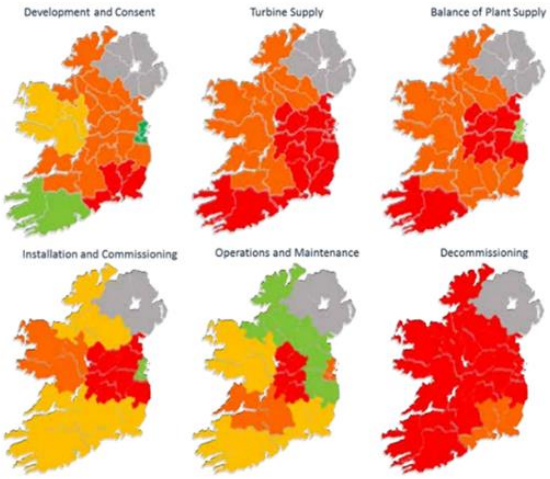


Figure 14: Regional split of companies with potential in each section of the Irish offshore wind industry. Colours are based on number of companies, not experience.

Source: Irish Wind Energy Association, 2020

Irish ports

B.8 The Irish Wind Energy Association report noted above and the 2022 Port Study report reviews the capacity and capability of Irish Ports and the opportunities for them to serve the supply chains for future offshore wind development. The Irish Wind Association have also released 'We Can Build Them: Supporting Irish Ports to Build OWFs' exploring the subject further with regards to particular funding challenges. Key points from the reports are as follows:

- 13 met scoping thresholds for installation and operational stage due to deep water capabilities;
- 7 ports with capability to act as staging ports during construction with some requiring significant investment to become fully capable;

- All ports assessed have some level of capability of serving as O&M bases;
- As new development is identified, future assessments could consider ports scoped out of assessment; and
- Creation of offshore wind hubs at selected ports under an enterprise zone model to be considered to promote supply chain growth.

B.9 Relevant local Irish east coast ports include:

- Dublin which is Ireland's largest port with good facilities and proximity to OWF development. The study noted that Dublin has capability and good potential to act as a staging port however more detailed analysis of this location suggests Dublin Port does not have sufficient space for laydown and is therefore not a suitable staging port.
- Belfast Harbour's D1 facility is the only existing facility which can accommodate staging and marshalling of fixed-bottom projects of the scale anticipated. The port can also serve as an offshore logistics hub (Wind Energy Ireland, 2022).
- Rosslare – One of Ireland's largest ports with good facilities and proximity to OWF development.
- Greenore – Regionally important port where water depth sufficient only for the provision as an O&M base.
- Dún Laoghaire - Regionally important port. Dún Laoghaire Port is potentially very close to offshore wind development has water depth sufficient for O&M activities and crew transfer vessel transfers and has very good local infrastructure.
- Wicklow – Locally important port within proximity to offshore wind development where water depth sufficient only for the provision as an O&M base.
- Arklow – Good proximity to OWF development where water depth sufficient only for the provision as an O&M base.
- From a construction point of view, Shannon-Foynes port, Port of Cork, Port of Waterford and Killybegs harbour are currently best placed ports in Ireland for the provision of 'staging'[20] given the availability of area already available at the port/harbour. However, none of these ports are located within the Greater Dublin area.

B.10 It should be noted that without investment in Irish port infrastructure, offshore projects in Ireland will likely be serviced from UK or European ports such as Belfast and those on the west coast of Britain including the Port of Mostyn and Barrow.

20 The process of storing OWF components port side from when they are delivered from the manufacturing facility prior to being delivered to site for installation.

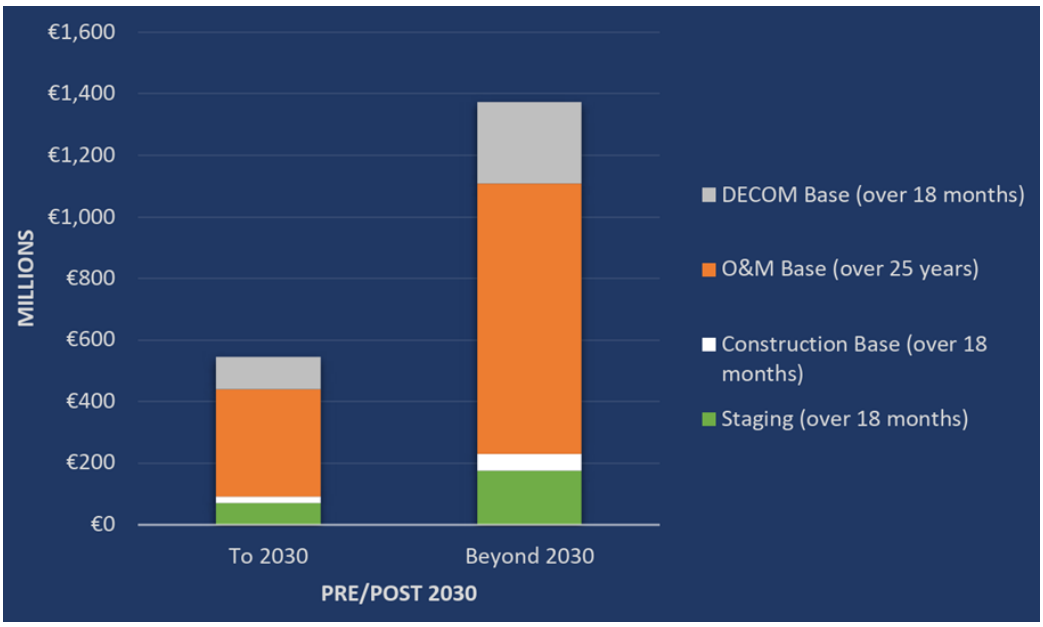
B.11 The figure below shows the opportunity for Irish Ports to capture expenditure at different stages of development and pre and post 2030.

B.12 The UK provides a good example of what has worked well when considering how OWFs can drive local and national socio-economic benefit, this includes:

- Supportive energy policy and regimes, planning and regulatory regimes and industry policy.
- Active developer and investor community which delivered a large volume of projects and brought forward large a pipeline.
- Development of industry, government sector deals and prior to this a range of programmes targeting cost reduction (e.g. through the Catalyst Centre).
- Increased coloration between industry, public sector and higher education.

B.13 Establishment of hubs in places like the Humber which have seen substantial investment in ports, sites and premises, skills and training and supply chain development.

Figure B 3 Commercial opportunity for Irish ports



Source: Irish Wind Association, 2020.

Annex C Economic impact assessment – overall impact of Dublin Array

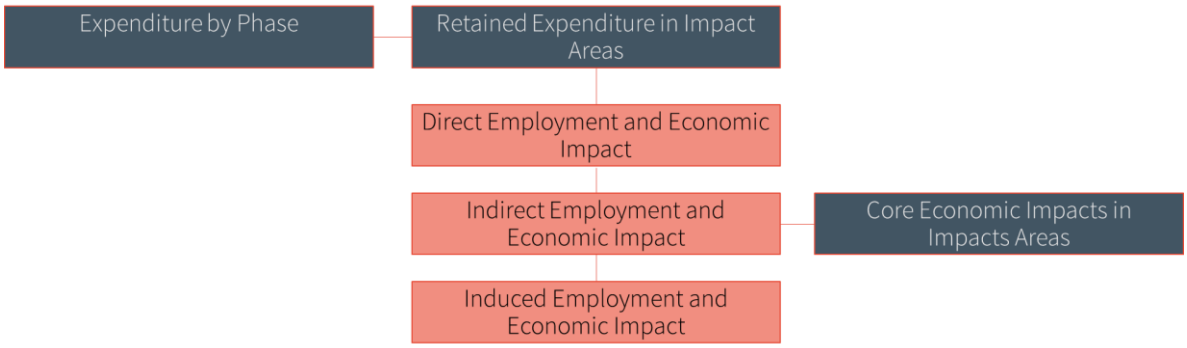
Estimating the core economic impacts

C.1 The core economic impacts presented in this Annex are calculated using a tailored economic model. The modelling exercise drew upon the economic multipliers used in the KPMG assessment of economic impact of onshore wind in Ireland prepared for Wind Energy Ireland in 2021. They provide reasonable economic multipliers when compared to economic multipliers used in UK windfarms. The Republic of Ireland Supply and Use Input Output tables were also used to assist the economic model in calculating direct impacts of expenditure within the study areas.

C.2 A key aspect of the economic modelling was to map the expenditure categories for each phase against the sector categories in the input output table on a best fit basis. For example, an expenditure category which is heavily associated with the construction sector would be matched to the construction sector within the model. Each sector within the input output table has different economic multipliers which vary based on the different interdependencies across sectors.

C.3 Figure C 1 shows the relationship between expenditure, direct, indirect, and induced economic effects. The level of retained expenditure within the impact areas is key to driving the core economic impacts of Dublin Array.

Figure C 1 Economic impacts summary



- Direct impacts capture the economic activity that is supported directly through the delivery of Dublin Array. This covers direct staff employed on- and off-site and all first-tier supply chain expenditure.
- Indirect impacts measure the supply chain impact of the additional output generated by companies in the supply chain supporting the tier one suppliers. The additional economic activity in these companies is passed down through their supply chains and generates additional, indirect benefits for many other companies across the Irish economy.
- Induced impacts capture the knock-on benefits that additional employment supported directly and indirectly has in the Irish economy as salaries - earned by those employed in additional jobs - are spent on goods and services elsewhere in the economy.

C.4 To derive the total economic benefits, direct, indirect, and induced employment and economic impacts are aggregated.

C.5 This Annex provides an overview of the total and annual core economic impacts which have potential to be generated as a result of the construction and operations of the Dublin Array OWF. It also considers wider socio-economic impacts that may be encouraged to occur as a result of the development of the wind farm such as development of the offshore wind supply chain. It should be noted that should ports be located outside the study areas (it is highly likely that this will mean the port will be located outside of the Republic of Ireland) the impacts will be expected to be minimal and therefore this scenario has not been modelled.

Construction phase

C.6 As set out in the section 17.4 the core economic impacts are modelled across the study areas, Greater Dublin and the South of Ireland under the following scenarios:

- **Option 1: Assembly/marshalling port and co-ordination base**: The assembly/marshalling port is located within Republic of Ireland (but outside of Greater Dublin) and the co-ordination base is located locally, within Greater Dublin. The most likely assembly/marshalling port option for Republic of Ireland will be use of two Republic of Ireland ports (Cork and Rosslare) in combination within the South of Ireland.
- **Option 2: Co-ordination base Scenario**: Only the co-ordination base is located locally. This will occur if the assembly/marshalling port is located outside of Republic of Ireland.

C.7 Overall, Hatch (the author of this chapter) estimates that the development and construction of Dublin Array will require an investment in the region of between €2.06 and €2.27 billion, with the range defined by the lower and upper capacity ranges for the wind farm. Based on the sourcing assumptions set out in Hatch's cost and sourcing note and hence the potential to retain supply chain expenditure in the impact areas, Hatch estimate that between €160.3 million and €176.1 million will be captured directly and/or indirectly by businesses located in the Greater Dublin through the construction phase.

C.8 Table C 1 shows the estimated expenditure that could be retained within each study area if the Applicant were to locate Dublin Array construction ports within the Greater Dublin/South of Ireland. This expenditure drives the core economic impacts of the wind farm during the construction phase.

Table C 1 Retained expenditure during the construction phase

	750 MW wind farm			824 MW wind farm		
	Greater Dublin co-ordination port	South of Ireland assembly/ marshalling port	Co-ordination and assembly/ marshalling ports	Greater Dublin co-ordination port	South of Ireland assembly/ marshalling port	Co-ordination and assembly/ marshalling ports
% of total DEVEX & CAPEX retained within the study areas	7.8%	4.2%	12%	7.8%	4.2%	12%
Total retained expenditure (€m)	€160.3	€86.2	€246.6	€176.1	€94.8	€270.9
Retained expenditure per annum (€m)	€64.1	€34.5	€98.6	€70.5	€37.9	€108.4

Core economic impact

C.9 Table C 2 and Table C 3 show the average annual and total core economic impacts across the construction phase (assumed to be a 2-year period). It shows that (providing that Irish ports are used) Dublin Array could contribute up to €92-€102 million GVA and 1,200-1,300 FTE person years of employment within the study areas, on average, across the construction period, totalling €183-€203 million GVA and 2,375-2,600 FTE person years of employment across the construction period.

Table C 2 Core economic Impacts during the construction phase, average per annum

	750 MW Wind Farm			824 MW Wind Farm		
	Greater Dublin co-ordination port	South of Ireland assembly/ marshalling port	Co-ordination and assembly/ marshalling ports	Greater Dublin co-ordination port	South of Ireland assembly/ marshalling port	Co-ordination and assembly/ marshalling ports
Direct GVA (€m)	€ 57	€ 29	€ 84	€ 62	€ 32	€ 93
Indirect & Induced GVA (€m)	€ 6	€ 2	€ 8	€ 7	€ 2	€ 8
Total GVA (€m)	€ 62	€ 30	€ 92	€ 68	€ 33	€ 102
Direct Jobs (FTEs) – Person Years of Employment	725	375	1,100	800	400	1,200
Indirect & Induced Jobs (FTEs) – Person Years of Employment	75	25	100	100	25	100
Total Jobs (FTEs) – Person Years of Employment	800	400	1,200	875	425	1,300

Hatch, 2023. GVA is rounded to the nearest €1 million and jobs are rounded to the nearest 10 jobs. Numbers may not sum due to rounding.

Table C 3 Core economic impacts during the construction phase, total of all years

	750 MW Wind Farm			824 MW Wind Farm		
	Greater Dublin co-ordination port	**South of Ireland assembly/ marshalling port**	**Co-ordination and assembly/ marshalling ports**	**Greater Dublin co-ordination port**	**South of Ireland assembly/ marshalling port**	**Co-ordination and assembly/ marshalling ports**
Direct GVA (€m)	€ 113	€ 58	€ 168	€ 123	€ 63	€ 185
Indirect & Induced GVA (€m)	€ 12	€ 3	€ 15	€ 13	€ 3	€ 15
Total GVA (€m)	€ 123	€ 60	€ 183	€ 135	€ 65	€ 203
Direct Jobs (FTEs) – Person Years of Employment	1,450	725	2,175	1,575	800	2,400
Indirect & Induced Jobs (FTEs) – Person Years of Employment	150	50	200	175	50	200
Total Jobs (FTEs) – Person Years of Employment	1,600	775	2,375	1,750	850	2,600

Hatch, 2023. GVA is rounded to the nearest €1 million and jobs are rounded to the nearest 10 jobs. Numbers may not sum due to rounding.

C.10 To put the construction phase impacts into context there are over 700,000 people in employment within Dublin and over 1 million people in employment within Dublin and the Mid East. In terms of the impact on GVA Dublin contributed €134.7 billion GVA to the national economy in 2019 and Dublin and the Mid East contributed €164.7 billion when combined. The construction of the wind farm will impact certain sectors of the economy more than others. When comparing to the size of the construction sector, which will see large portion of the impacts, the impacts are more significant. Dublin and the Mid East region both have around 25,000 workers and therefore if the development was to support hundreds of construction jobs within Greater Dublin, this will represent an important boost to the sector. It should be noted that these impacts will be limited to a 2-year period and therefore do not represent a long-term impact on the Greater Dublin Economy.

C.11 As of the time of writing, Dublin Array is in the development phase. The development and project management phase of Dublin Array currently supports jobs within Greater Dublin. this includes activities such as:

- Planning;
- Environmental surveys;
- Resource and metocean assessment;
- Geological and hydrological surveys;
- Engineering and consultancy; and
- Administrative and support services.

C.12 There will also be jobs created at the co-ordination and assembly/marshalling ports, for example, providing local ports are used, local jobs will be supported through the installation and commissioning phase. These jobs will include jobs in both the construction and engineering sectors. Supply chain expenditure will support a wide range of types of indirect jobs, although the quantity of jobs is relatively small.

C.13 Across Greater Dublin and Rosslare/Wicklow there is fairly high unemployment which increased during the COVID-19 pandemic and is yet to fully recover to pre pandemic levels. The unemployment rate has generally exceeded the national average. The jobs created by the wind farm present an opportunity to provide new jobs and help tackle high unemployment levels.

Operations phase

C.14 Dublin Array O&M Base will be located at Dún Laoghaire Harbour. Table C 4 shows the expenditure on Dublin Array that estimated to be retained within Greater Dublin during the operations phase, which is assumed to be 35 years. Hatch estimate that between €450 million and €650 million will be retained within Greater Dublin. This expenditure drives the core economic impacts of the wind farm during the operations phase.

Table C 4 Retained expenditure during the operations phase

	750 MW wind farm	824 MW wind farm
% of total OPEX retained within the study areas	70%	70%
Total retained expenditure (€m)	€450	€650
Retained expenditure per annum (€m)	€15	€22

Hatch, 2023. Note the total retained expenditure is rounded to the nearest €50 million and the retained expenditure per annum is rounded to the nearest $1 million.

C.15 Table C 5 and Table C 6 show the average annual and total core economic impacts across the operations phase (assumed to be a 35-year period). It shows that Dublin Array is predicted to contribute a total of €14-€17 million GVA and 200-240 FTE jobs within the study area, on average, each year across the operational period, amounting to a total impact of €500-€550 million GVA and 7,000-7,700 FTE person years of employment across the operational period.

Table C 5 Core economic impacts during the operations phase, average per annum

	750 MW Wind Farm	824 MW Wind Farm
Direct GVA (€m)	€5	€5
Indirect & Induced GVA (€m)	€10	€11
Total GVA (€m)	€14	€17
(Onsite) Direct Jobs (FTEs)	70	80
Indirect & Induced Jobs (FTEs)	130	160
Total Jobs (FTEs)	200	240

Hatch, 2023. GVA is rounded to the nearest €1 million and jobs are rounded to the nearest 10 jobs. Numbers may not sum due to rounding.

Table C 6 Core economic impacts during the operations phase, lifetime total

	750 MW Wind Farm	824 MW Wind Farm
Direct GVA (€m)	€160	€180
Indirect & Induced GVA (€m)	€340	€370
Total GVA (€m)	€500	€550
(Onsite) Direct Jobs (FTEs) – Person Years of Employment	2,450	2,680
Indirect & Induced Jobs (FTEs – Person Years of Employment)	4,550	5,020
Total Jobs (FTEs) – Person Years of Employment	7,000	7,700

Hatch, 2023. GVA is rounded to the nearest €10 million and jobs are rounded to the nearest 50 jobs. Numbers may not sum due to rounding.

C.16 To put the operations phase impacts into context, there are over 700,000 people in employment within Dublin and over 1 million people in employment within Dublin and the Mid East. Dublin contributed €122 billion GVA to the national economy in 2018 and Dublin and the Mid East contributed €149.5 billion when combined. The impact on jobs at a Greater Dublin level will represent modest but nonetheless important economic benefit in the context of the Greater Dublin economy (which generates over €150 billion in GVA) and the Greater Dublin employment base (of over 1 million jobs). The core economic impact on specific sectors which are more relevant to the development of offshore wind such as engineering will be more significant and noticeable. The impact will occur over a 35-year period and therefore the impacts can be seen as long-term this will represent an important boost to the sector.

C.17 The types of direct O&M jobs supported directly will include:

- Engineering jobs: Manager, Performance Engineer, Asset Integrity Engineer (Electrical & Mechanical) & Scada Engineer and Engineering Support;
- Finance Manager, Controller, Joint Venture Manager;
- Production Manager;
- Consents Manager & Consents Support;
- General Manager;
- Offshore Operations & Area Engineer Supervisor;
- Offshore Operations & High Voltage Supervisor;
- O&M Service Technicians;

- Maintenance Coordinators;
- Document Controller;
- Health, Safety, and Environment QA Manager;
- Procurement;
- Administrator;
- Public Relations Resource;
- Asset Manager;
- O&M Logistics Coordinator; and
- Warehouse Manager.

C.18 Supply chain expenditure will support a wide range of types of indirect jobs, although the quantity of jobs is relatively small. The supply chain may support jobs in the following areas:

- Marine and air transport;
- IT services;
- Building management;
- Local Fabrication engineering;
- Training; and
- Hospitality etc.

C.19 The operation of Dublin Array provides an opportunity to support jobs in long-term employment in areas which have seen particularly high levels of unemployment in recent years.

Decommissioning phase

C.20 A Decommissioning and Restoration Plan for offshore infrastructure has been included in Volume 7, Appendix 2 of the EIAR, and includes three rehabilitation schedules, one for each Maritime Area Consent. 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.

C.21 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 development progresses.

C.22 The Applicant will manage the construction, operation, and maintenance of the OES until the end of the proving period, after which ownership and responsibility will transfer to EirGrid. EirGrid will then decide whether to decommission or continue using the assets. This planning application does not seek permission for decommissioning the OES, as detailed in Volume 2, Chapter 6, which also outlines the recommended decommissioning approach should EirGrid choose to decommission any part of the OES. A decommissioning plan and supporting environmental management plan will be prepared before decommissioning begins and will undergo its own environmental assessment. Relevant environmental management measures from the Onshore CEMP will be implemented, reflecting the legislation and guidance available at the time.

C.23 Given the likely scale of decommissioning and the lack of detailed information, the economic impacts generated as a result of decommissioning activity are assumed to be similar in nature but less than those identified during the construction stage.

Wider benefits

C.24 There are a number of wider benefits that will occur should Dublin Array be developed; the main benefits are:

- **Supply chain development** – Projects such as Dublin Array are needed if the Republic of Ireland is able to 'Harness its Potential' and develop its offshore wind supply chain within the Republic of Ireland. The development of Irish offshore wind supply chain capacity will help the country capture a greater portion of socio-economic benefits from OWF developments within the Republic of Ireland. The extent to which this benefit is realised may depend on the overall pace of offshore wind development in the country and the extent to which Irish ports can be used for both the construction and operation of OWFs as well as financial and commercial decisions that are made by developers.

- **Green economy growth** – Dublin Array has potential to pioneer the growth of offshore wind on the East coast of the Republic of Ireland and provide opportunities for greener growth across the local economy, this will aid in the country's transition to a green economy.

- **Energy supply and security** – Dublin Array will provide up to 824 MW of electricity supply (at max capacity), enough to provide electricity to hundreds of thousands of Irish homes. Therefore, contributing to Irish energy production and supporting the required shift away from fossil fuels. Ireland will have greater levels of energy supply and security if Dublin Array and other future wind farms are developed.

Opportunities to maximise local benefits

C.25 This section presents a number of ways that the Applicant can encourage the involvement of local companies in the construction and operation supply chains for the wind farm and promote opportunities for local residents to access training and employment opportunities associated with the construction and operation of the wind farms.

C.26 The suggested measures will ultimately provide opportunities to maximise the local socio-economic benefits the project can deliver.

C.27 The Applicant has an opportunity to work with the relevant sector and local authority bodies to help secure economic benefits of the OWFs to the local area. The Local Area specifically refers to the functional economic area linked to ports that have the potential to service the development during the construction and operation phases. RWE is currently considering ports suitable for the construction base for the offshore elements of the project. However, it is assumed that should the most likely local ports be used the majority of local benefits will occur in Greater Dublin and South of Ireland, mainly within close proximity to the selected ports and key economic centres of activity.

C.28 Table C 7 outlines some possible measures that could be implemented by RWE in order to capture maximum local socio-economic benefit from Dublin Array. These measures are illustrative only and will need to be agreed with RWE.

Table C 7 Outline employment and skills measures to help support local economic benefit

	Supply chain development	Skills activity
Information and Communication	**General awareness raising** work with stakeholders to provide updates to local businesses and communities on the progress of the project. **Communication with business groups:** Maintain open lines of communications with the business groups and fora in order to provide updates on the development, support	**Communicate expected labour and skills requirements to education and training providers**: Maintain communication with relevant local education and training providers as construction and operation plans emerge and maintain an understanding of the likely direct and supply chain employment opportunities associated with Dublin Array as this becomes clearer. This is to ensure a timely response to

	Supply chain development	Skills activity
	early engagement through supply chain events and provide updates through other communication tools such as newsletters. **Encourage engagement**: Use supply chain events to bring together upper tier suppliers from the industry with local companies, including encouraging upper tier suppliers to work with potential local suppliers in order to highlight opportunities to access contracts. Supply chain development events could be run close to project execution when the requirements of the developments and their upper supply chain tier is clearly defined.	specific training needs from providers. **Communicate strategic messages about general skills demands to the relevant the economic development authorities:** Collaborate with the economic development authorities in order to provide market insight and intelligence about industry trends, technology developments and associated pressure on skills to inform strategy development. **Promote job opportunities locally:** Provide information on the expected employment opportunities to local job seekers in an accessible format. This could include posting on the project's web portal, advertising in local news publications and working with local Job Centres. **Communicate with businesses to identify skills needs:** Identify the likely skills needs associated with the various supply chain opportunities and communicate these to businesses, as well as to inform businesses about relevant national and regional sectoral skill initiatives.
Identify Intervention Needs	**Identify supply chain development needs:** Work alongside the stakeholders (including public bodies, industry and business representatives and others), the supply chain and local businesses to identify any particular sector	**Identify skills development needs:** Work alongside the Local Authorities and relevant public sector agencies, as well as businesses in the supply chain, to ensure that relevant stakeholders are well informed about the labour requirements associated with the

	Supply chain development	Skills activity
	development needs locally so that firms will be better placed to access opportunities. **Highlight gaps in provision:** Work with stakeholders to highlight any identified needs which are not being addressed by current business support provision in the local areas. This will help to ensure that stakeholders and business support providers are able to tailor their provision to the requirements of industry.	developments and any particular gaps in the skills base of the local population that might need to be addressed to help ensure that local people have a good chance of accessing opportunities that arise in the area. **Highlight gaps in provision:** Work with stakeholders (including public bodies, industry and business representatives and education and training providers) to highlight any identified needs which are not being addressed by current skills development programmes in the local area. This will help to ensure that education and skills providers are able to tailor their provision to the requirements of industry.
Other Supportive Activities	**Champion the region:** The Applicant could act as a regional champion for Greater Dublin in its capacity on steering groups/boards for relevant national supply chain development programmes that may be developed in the oncoming years as the industry matures.	**Promote opportunities widely:** Ensure that, where possible, opportunities associated with the developments and the offshore wind sector generally are promoted through the relevant channels, including young people and groups that are disadvantaged in the labour market.

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