codling wind park

29

Environmental Impact Assessment Report

Volume 3

Chapter 29 Population

codling
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Abbreviations

Abbreviation	Term in full
CEA	Cumulative Effects Assessment
CEBR	Centre of Economics and Business Research
CEMP	Construction Environmental Management Plan
CDP	City / county development plan
CSO	Central Statistics Office
CWP	Codling Wind Park
DCC	Dublin City Council
DCCAE	Department of Communications, Climate Action and Environment
DCMNR	Department of Communications, Marine and Natural Resources
DECC	Department of the Environment, Climate and Communications
DECLG	Department of Environment, Community and Local Government
DEHLG	Department of the Environment, Heritage and Local Government
DLRCC	Dún Laoghaire-Rathdown County Council
DMRB	Design Manual for Roads and Bridges
EC	European Commission
ED	Electoral division
EIA	Environmental Impact Assessment
EIAR	Environmental Impact Assessment Report
EIS	Environmental Impact Statement
EMF	Electromagnetic field
EPA	Environmental Protection Agency
ESB	Electricity Supply Board
ESBN	ESB Networks
EU	European Union
FCC	Fingal County Council
FTE	Full-time equivalent
GIS	Geographic Information System
GVA	Gross value added
HGV	Heavy goods vehicles
HIA	Health Impact Assessment
HSE	Health Service Executive

HWM	High water mark
IACs	Inter-array cables
IAM	Impact Assessment Matrix
IAQM	Institute of Air Quality Management
ICNIRP	International Commission on Non-Ionizing Radiation Protection
IEMA	Institute of Environmental Management and Assessment
IHR	Irish Health Repository
IPHI	Institute of Public Health Ireland
LAP	Local Area Plan
LAT	Lowest astronomical tide
LV	Light vehicles
LSE	London School of Economics
mAOD	Metres above ordnance datum
NIS	Natura Impact Statement
ODM	Ordnance datum Malin
OECC	Offshore export cable corridor
O&M	Operation and maintenance
OREDP	Offshore Renewable Energy Development Plan
OSI	Ordnance Survey of Ireland
OSSs	Offshore substation structures
OTI	Onshore transmission infrastructure
OfTI	Offshore transmission infrastructure
OWF	Offshore wind farm
PDA	The Planning and Development Act
PHI	Public Health Ireland
SEA	Strategic Environmental Assessment
SEAI	Sustainable Energy Association of Ireland
SDZ	Strategic Development Zone
SPA	Special Protection Area
TII	Transport Infrastructure Ireland
TJB	Transition joint bay
UNESCO	United Nations Educational, Scientific and Cultural Organisation
USEPA	United States Environmental Protection Agency
WCS	Worst-case scenario

WEDG	Wind Energy Development Guidelines
WEI	Wind Energy Ireland
WHO	World Health Organisation
WtE	Waste to Energy
WTG	Wind turbine generator
WWTP	Wastewater treatment plant
ZTV	Zone of theoretical visibility

Definitions

Glossary	Meaning
the Applicant	The developer, Codling Wind Park Limited (CWPL).
array site	The area within which the wind turbine generators (WTGs), inter-array cables (IACs) and the offshore substation structures (OSSs) are proposed.
Codling Wind Park (CWP) Project	The proposed development as a whole is referred to as the Codling Wind Park (CWP) Project, comprising of the offshore infrastructure, the onshore infrastructure and any associated temporary works.
Codling Wind Park Limited (CWPL)	A joint venture between Fred. Olsen Seawind (FOS) and Électricité de France (EDF) Renewables, established to develop the CWP Project.
Compound A	A temporary construction compound, support area and storage facility for the landfall works, and to support the installation of the onshore export cables. It will operate as a hub for the onshore construction works, as well as acting as a staging post and secure storage for equipment and component deliveries.
Compound B	A temporary construction compound / laydown area for general cable route and onshore substation construction activities.
Compound C	A temporary construction compound for the onshore substation site. Contractor welfare facilities will be located in this compound, as well as some material storage space.
Compound D	A temporary construction compound and laydown area to facilitate the construction of the bridge over the cooling water channel.
ESB Networks (ESBN)	Owner of the electricity distribution system in the Republic of Ireland, responsible for carrying out maintenance, repairs and construction on the grid.
ESBN network cables *(previously the ESB grid connection)*	Three onshore export cable circuits connecting the onshore substation to the proposed ESBN Poolbeg substation, which will then transfer the electricity onwards to the national grid.
Environmental Impact Assessment (EIA)	A systematic means of assessing the likely significant effects of a proposed project, undertaken in accordance with the EIA Directive and the relevant Irish legislation.
Environmental Impact Assessment Report (EIAR)	The report prepared by the Applicant to describe the findings of the EIA for the CWP Project.
export cables	The cables, both onshore and offshore, that connect the offshore substations with the onshore substation.
high water mark (HWM)	The line of high water of ordinary or medium tides of the sea or tidal river or estuary.
horizontal directional drilling (HDD)	A trenchless drilling method used to install cable ducts beneath the ground through which onshore export cables from can be pulled. HDD enables the installation of cables beneath obstacles such as roads, waterways and existing utilities.

inter-array cables (IACs)	The subsea electricity cables between each WTG between and the OSSs.
interconnector cables	The subsea electricity cables between OSSs.
landfall	The point at which the offshore export cables are brought onshore and connected to the onshore export cables via the transition joint bays (TJBs). For the CWP Project, the landfall works include the installation of the offshore export cables within Dublin Bayout to approximately 4 km offshore, where water depths that are too shallow for conventional cable lay vessels to operate.
limit of deviation (LoD)	Locational flexibility of permanent and temporary infrastructure is described as a LoD from a specific point or alignment.
offshore development area	The total footprint of the offshore infrastructure and associated temporary works including the array site and the OECC.
offshore export cables	The cables which transport electricity generated by the wind turbine generators (WTGs) from the offshore substation structures (OSSs) to the TJBs at the landfall.
offshore export cable corridor (OECC)	The area between the array site and the landfall, within which the offshore export cables will be installed along with cable protection and other temporary infrastructure for construction.
offshore infrastructure	The permanent offshore infrastructure, comprising of the WTGs, IACs, OSSs, interconnector cables, offshore export cables and other associated infrastructure such as cable and scour protection.
offshore substation structure (OSS)	A fixed structure located within the array site, containing electrical equipment to aggregate the power from the WTGs and convert it into a more suitable form for export to shore.
OSS topside	The offshore substation topside structure resting on the OSS monopile foundation and housing all electrical and ancillary equipment. This includes all systems such as electrical, SCADA, safety and mechanical equipment.
OSS monopile foundation	The bottom fixed structure piled in to the seabed supporting the OSS topside. It consists of a monopile and a transition piece. It can include systems such as electrical, SCADA, cathodic protection, safety and mechanical equipment.
offshore transmission infrastructure (OfTI)	The offshore transmission assets comprising the OSSs and offshore export cables. The EIAR considers both permanent and temporary works associated with the OfTI.
onshore export cables	The cables which transport electricity generated by the WTGs from the TJBs at the landfall to the onshore substation.
onshore development area	The entire footprint of the OTI and associated temporary works that will form the onshore boundary for the planning application.
onshore transmission infrastructure (OTI)	The onshore transmission assets comprising the TJBs, onshore export cables and the onshore substation. The EIAR considers both permanent and temporary works associated with the OTI.
onshore substation	Site containing electrical equipment to enable connection to the national grid.

onshore substation site	The area within which permanent and temporary works will be undertaken to construction the onshore substation.
onshore substation site boundary	The physical boundary of the onshore substation site.
operations and maintenance (O&M) activities	Activities (e.g., monitoring, inspections, reactive repairs, planned maintenance) undertaken during the O&M phase of the CWP Project.
O&M phase	This is the period of time during which the CWP Project will be operated and maintained.
parameters	Set of parameters by which the CWP Project is defined and which are used to form the basis of assessments.
Poolbeg 220kV substation	This is the ESBN substation that the ESBN network cables connect into, from the onshore substation. This substation will then transfer the electricity onwards to the national grid.
temporary tunnel compound 1	The area within Compound A, near the landfall, within which the Compound A tunnel launch shaft will be located.
temporary tunnel compound 2	The area within which the Shellybanks Road tunnel reception shaft will be located.
temporary tunnel compound 3	The area within the onshore substation site, within which the onshore substation tunnel launch shaft will be located.
transition joint bay (TJB)	This is required as part of the OTI and is located at the landfall. It is an underground bay housing a joint which connects the offshore and onshore export cables.
tunnel	The onshore export cables will be installed within a tunnel that extends from within Compound A, near the landfall, to the onshore substation site.
tunnel shaft	Located within the temporary tunnel compounds, the tunnel shafts will facilitate the two tunnel drives required to complete the construction of the tunnel.
wind turbine generator	All the components of a wind turbine, including the tower, nacelle, and rotor.

29 POPULATION

29.1 Introduction

1. Codling Wind Park Limited (hereafter 'the Applicant') is proposing to develop the Codling Wind Park (CWP) Project, a proposed offshore wind farm (OWF) located in the Irish Sea approximately 13–22 km off the east coast of Ireland, at County Wicklow.

2. This chapter forms part of the Environmental Impact Assessment Report (EIAR) for the CWP Project. The purpose of the EIAR is to provide the decision-maker, stakeholders and all interested parties with the environmental information required to develop an informed view of any likely significant effects resulting from the CWP Project, as required by the European Union (EU) Directive 2011/92/EU (as amended by Directive 2014/52/EU) (the EIA Directive).

3. This EIAR chapter describes the potential impacts of the CWP Project on Population during the construction, operations and maintenance (O&M) and decommissioning phases. The CWP Project includes the following:

    - The onshore transmission infrastructure (OTI) and landfall are situated on the Poolbeg Peninsula. The landfall includes where the offshore export cables are brought onshore, and the OTI comprises transition joint bays (TJBs), the onshore export cables, the onshore substation, and the Electricity Supply Board Networks (ESBN) network cables to connect the onshore substation to the Poolbeg 220kV substation; and
    - The offshore infrastructure includes the wind turbine generators (WTGs), the inter-array cables (IACs) and the offshore transmission infrastructure (OfTI), which comprises the offshore substation structures (OSSs), interconnector cables and offshore export cables.

4. The potential for the CWP Project to impact on the population who live, work or visit in close proximity to the CWP Project is primarily concerned with land-based receptors and is most applicable to the OTI.

5. It is acknowledged, however, that there may be potential for the offshore infrastructure to impact on land-based receptors during the construction, O&M and decommissioning phases. Primarily, the potential effects relate to the WTGs during the O&M phase. However, consideration has also been given in this assessment to the OSSs during the O&M phase, as well as to the installation of the offshore export cables close through the intertidal area at Sandymount during the construction phase.

6. In summary, this EIAR chapter:

    - Details the EIA scoping and consultation process undertaken and sets out the scope of the impact assessment for population;
    - Identifies the key legislation and guidance relevant to population, with reference to the latest updates in guidance and approaches;
    - Confirms the study area for the assessment and presents the impact assessment methodology for population;
    - Describes and characterises the baseline environment for population, established from desk studies, project survey data and consultation;
    - Defines the project design parameters for the impact assessment and describes any embedded mitigation measures relevant to the population assessment;
    - Presents the assessment of potential impacts on population and identifies any assumptions and limitations encountered in compiling the impact assessment; and
    - Details any additional mitigation and/or monitoring necessary to prevent, minimise, reduce or offset potentially significant effects identified in the impact assessment.

7. The assessment should be read in conjunction with **Appendix 29.1 Cumulative Effects Assessment (CEA)**, which considers other plans, projects and activities that may act cumulatively with the CWP Project and provides an assessment of the potential cumulative impacts on population.

8. A summary of the CEA for population is presented in **Section 29.11**.

9. Additional information to support the assessment includes:

- **Appendix 29.1 Cumulative Effects Assessment**;
- **Appendix 29.2 Representative Case Scenario/Limit of Deviation Tables**; and
- **Appendix 29.3 Economic Impact Analysis**

10. This chapter should be read in conjunction with the following specialist topic chapters.

- **Chapter 15 Seascape, Landscape and Visual Impact Assessment**;
- **Chapter 23 Landscape and Visual Impact Assessment**;
- **Chapter 24 Noise and Vibration**;
- **Chapter 25 Air Quality**;
- **Chapter 26 Material Assets – Built Services**; and
- **Chapter 27 Traffic and Transport**.

11. The chapters listed above are referred to, as appropriate, throughout the population chapter. The detailed assessments were conducted in the respective chapters and these assessments are not repeated in this chapter.

12. **Chapter 28 Climate: Carbon Balance Assessment** notes that the proposed development will lead to a reduction in greenhouse gas emissions, which will have a positive impact on population. As this reduction will benefit across a wider scale than this study area, it is not considered further here.

29.2 Consultation

13. Consultation with statutory and non-statutory organisations is a key part of the EIA process. Consultation with regard to population has been undertaken to inform the approach to and scope of the assessment.

14. The key elements to date have included EIA scoping, consultation events and meetings with key stakeholders. The feedback received throughout this process has been considered in preparing the EIAR. EIA consultation is described further in **Chapter 5 Environmental Impact Assessment Methodology**, the **Planning Documents** and in the **Public and Stakeholder Consultation Report** which has been submitted as part of the planning application.

15. **Table 29-1** provides a summary of the key issues raised during the consultation process relevant to Population and details how these issues have been considered in the production of this EIAR chapter.

Table 29-1 Consultation responses relevant to population

Consultee	Comment	How issues have been addressed
Scoping responses		
Fáilte Ireland 27 May 2021	Provided copy of Fáilte Ireland EIAR Guidelines referred to in **Section 29.3**.	The content and guidelines outlined in this document provided by Fáilte Ireland have been considered in the preparation of this assessment.

Consultee	Comment	How issues have been addressed
Transport Infrastructure Ireland (TII) 25 May 2021	TII recommend that the cabling route should seek to use the local road network or alternatives as opposed to the national road network.	This requirement has been incorporated in the project design. It is noted that local roads in the study area are used by the local population and tourists to access recreational features at the eastern tip of the Poolbeg Peninsula. The potential impact of disruption of access during the construction phase has been considered in this assessment (refer to **Section 29.10.1.3**).
	Visual impacts from existing national roads and light rail networks should be considered.	Visual impacts have been addressed in **Chapter 15 Seascape, Landscape and Visual Impact Assessment** and **Chapter 23 Landscape and Visual Impact Assessment**. The outcome of those assessment has informed this chapter.
Topic-specific meetings		
Fáilte Ireland 9 November 2023	Fáilte Ireland representatives referenced: • Need for engagement with local communities at Wicklow and Poolbeg; • Need for the consideration of tourism, including the potential for the WTGs to become a tourism asset in the future; and • The importance of the associated community benefit fund.	**Engagement** There has been ongoing engagement with local communities and stakeholders and this is detailed in the **Public and Stakeholder Consultation Report**. A summary relating to public consultation is provided in **Section 29.2.1**. **Tourism** Tourism-associated impacts during the construction, O&M and decommissioning phases have been considered as part of this assessment (refer **Section 29.10.1 – Impacts 4** and **5** and **Section 29.10.2 – Impacts 2 and 3**). The community benefit fund is considered as appropriate in **The Planning Report**.
Dublin City Council: Project overview and traffic count locations	Consider the amenity and recreational proposals from the	Impacts on amenity and recreational resources during the construction, O&M and

Consultee	Comment	How issues have been addressed
20 October 2022	city to the Poolbeg Peninsula (i.e. coastal walkways etc).	decommissioning phases have been considered as part of this assessment (refer to **Section 29.10**).
Dublin City Council: Introductory meeting and discussion on proposed baseline noise monitoring 3 November 2022	Engagement with the local communities and stakeholders will be an important aspect for the CWP Project.	There has been ongoing engagement with local communities and stakeholders and this is detailed in the **Public and Stakeholder Consultation Report**. A summary relating to public consultation is provided in **Section 29.2.1**.
Dublin City Council: Consultation meeting – landscape and visual amenity 15 December 2022	Requested an additional viewpoint on the Strand Road near Merrion Gates.	These additional viewpoints have been included in **Chapter 23 Landscape and Visual Impact Assessment** and the outcome of that assessment has informed this chapter.
	Requested an additional viewpoint between Dublin Port and East Point.	
	Requested additional viewpoints along Sandymount Strand.	

29.2.1 Public consultation

16. CWPL committed to three phases of non-statutory public consultation. For each stage of public consultation, steps were taken to consult stakeholders and the public on key matters, including project optioneering, design decisions, environmental survey works and proposed mitigation measures.

17. The first phase of public consultation took place from 1 March 2021 to 27 March 2021 and presented an introduction to the CWP Project. The purpose of this first phase of public consultation was to begin a dialogue with local communities and other stakeholders. Early design plans for the CWP Project were shared with all interested parties and feedback was sought to help shape the future design of the project.

18. The introductory consultation included a virtual consultation room, online webinars and information clinics. The project also held a number of advance briefings with key local stakeholder groups, including the local TDs for County Wicklow and county councillors from the Greystones and Wicklow Municipal Districts.

19. The second phase of CWP's public consultation ran for four weeks, starting on 11 January 2023 and continuing until 8 February 2023. The consultation included briefings for Wicklow and Poolbeg stakeholders, a virtual consultation room and four public information days. A number of briefings with key local stakeholder groups was also undertaken.

20. The third phase of public consultation (April/May 2024) was designed to respond to requests and feedback from public consultations 1 and 2 respectively, sharing the changes made and details of the planning application. The purpose of the third public consultation was to share the final designs of the offshore wind park, including wind turbine numbers and layout.

21. With regards to feedback, the majority of respondents were in support of the development of the CWP Project and found the exhibition either online or in person to be informative and engaging. The feedback received was considered with regards to incorporation into the design. All feedback received is detailed in the **Public and Stakeholder Consultation Report**.

22. With respect to population, potential economic impacts were welcomed, such as the community benefit fund and the job creation. Submissions also referenced the potential for visual impacts and impacts on ecology. The potential impacts on local residents during onshore construction were also raised. No new issues were raised that needed further investigation in this chapter.

23. Economic impacts have been considered as part of this assessment and specifically in **Appendix 29.3 Economic Impact Analysis**. The potential for visual impacts on onshore population receptors has also been considered in this assessment, with further detail in **Chapter 15 Seascape, Landscape and Visual Impact Assessment** and **Chapter 23 Landscape and Visual Impact Assessment**.

29.3 Legislation and guidance

29.3.1 Legislation

24. The main legislation that is applicable to the assessment of population is summarised below. Further detail is provided in **Chapter 2 Policy and Legislative Context**.

- EU Directive 2011/92/EU (as amended by Directive 2014/52/EU) on the assessment of the effects of certain public and private projects on the environment (the EIA Directive);
- The Planning and Development Act, 2000 (as amended); and
- The Planning and Development Regulations, 2001 (as amended).

29.3.2 Policy

25. The overarching planning policy relevant to the CWP Project is described in **EIAR Chapter 2 Policy and Legislative Context**.

26. The assessment of the CWP Project against relevant planning policy is provided in the **Planning Report**. This includes planning policy relevant to population.

29.3.3 Guidance

27. The principal guidance and best practice documents used to inform the assessment of potential impacts on population are set out below:

- Environmental Protection Agency (EPA), *Guidelines on the Information to be Contained in Environmental Impact Assessment Reports* (May 2022) (hereafter referred to as the EPA EIAR Guidelines);
- Department of Environment, Community and Local Government (DECLG), *Guidelines for Planning Authorities and An Bord Pleanála on Carrying Out Environmental Impact Assessment* (August 2018);
- European Commission (EC), *Environmental Impact Assessment of Projects – Guidance on the Preparation of the Environmental Impact Assessment Report* (2017);
- Department of Communications, Climate Action and the Environment (DCCAE) and sustainable Energy Authority of Ireland (SEAI), *Guidance on EIS and NIS Preparation for Offshore Renewable Energy Projects* (April 2017);

- Wind Energy Ireland (WEI) (formerly Irish Wind Energy Association (IWEA)), *Best Practice Principles in Community Engagement and Community Commitment* (2013);
- WEI, *Best Practice Guidelines for the Irish Wind Energy Industry* (March 2012);
- EPA, *Advice Notes on Current Practice in the Preparation of Environmental Impact Statements* (2003);
- Fáilte Ireland, *EIAR Guidelines for the Consideration of Tourism and Tourism Related Projects* (undated); and
- Highways England, *Design Manual for Roads and Bridges (DMRB) – LA112 Population and human health (Revision 1)* (January 2020).

29.4 Impact assessment methodology

28. **Chapter 5 EIA Methodology** provides a summary of the general impact assessment methodology applied to the CWP Project, which includes the approach to the assessment of transboundary and inter-related effects. The approach to the assessment of cumulative impacts is provided in **Chapter 5**, **Appendix 5.1 CEA Methodology**.

29. The following sections confirm the methodology used to assess the potential impacts on population. It is noted that there are no specific definitions or guidance in place for the assessment of population in an EIAR. This assessment has therefore been based on established best practice and has been undertaken with regard to the overarching guidance set out in **Section 29.3**.

29.4.1 Topics considered under the population assessment

30. When deciding on the population assessment topics, consideration was given to the recommended topics under the heading of Population, listed in Section 3.3.6 of the EPA EIAR Guidelines, in addition to the nature of the proposed project, and its respective location.

31. The *Guidance on EIS and NIS Preparation for Offshore Renewable Energy Projects* (April 2017) refers to project level topics which should be considered as part of a population impact assessment. These topics were set out originally in the Offshore Renewable Energy Development Plan (OREDP) Strategic Environmental Assessment (SEA) Environmental Report (February 2014), which set the policy framework against which proposals for renewable energy projects in the marine area should be assessed at the consenting stage.

32. The Fáilte Ireland Guidelines state that *"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 each group uses or values should be stated and where relevant, indicate the time, duration or seasonality of any of those activities"*. The Guidelines also note that *"Where possible the value of the contribution of such tourism assets and activities to the local economy should be provided".* These aspects are described in **Section 29.6**.

Table 29-2 Population topics considered for the CWP Project

Topic	Description
OTI and landfall and offshore infrastructure	
Baseline population, demographics and settlement trends	Effects on population numbers. Changes in settlement patterns and demographic profile in terms of population numbers, age profile and sex.
Amenity	Effects on the amenity uses of a site
Land use	Effects resulting from changes in land use
Tourism economy	Assessment of the potential effects (both positive and negative) on the surrounding tourism economy.
Socioeconomics (inc. employment)	This topic specific assessment is addressed specifically in **Appendix 29-3 CWP Project Economic Benefit Analysis**
Human Health	This topic specific assessment is addressed in **Chapter 30 Human Health**.
Offshore infrastructure only	
Ports, shipping and navigation	This topic is addressed separately in **Chapter 16 Shipping and Navigation**.
Aviation safety and military exercise	This topic is addressed separately in **Chapter 17 Aviation, Military and Radar**.
Commercial fisheries, shellfish and aquaculture	This topic is addressed separately in **Chapter 12 Commercial Fisheries**.

29.4.2 Study area

33. The study area for the population assessment has been defined separately for the OTI and landfall and the offshore infrastructure.

OTI and landfall

34. For the OTI and landfall (hereafter referred to as the OTI) the population assessment applied a 5 km boundary definition as a wide study area. The 5 km study area is aligned with that established in **Chapter 23 Landscape and Visual Impact Assessment** and which was defined on the basis of a radius of 5 km from the onshore substation site.

35. Within this 5 km study area, the assessment considers the onshore development area within which the OTI works will be located. This study area also includes the final section of the offshore export cable corridor (OECC), extending offshore to approximately 4 km from the high water mark.

36. The population assessment was primarily focused on a local scale. The assessment used electoral divisions (EDs) and primarily the Pembroke East A ED as a sub-boundary definition within the 5km study area.

37. An ED is a legally defined administrative area in Ireland which is used by the Central Statistics Office (CSO) for population-based statistics. There are a total of 3,440 EDs in the State. ED scale is a

commonly used definition of the study area for assessment of impacts on population. The Pembroke East A ED sub-boundary is used in assessment in instances whereby the availability of data is presented to an ED scale (such as demographics).

38. The OTI is located within the Pembroke East A ED (No. 2125) which has an area of approx. 218 ha, and the outline of which is shown in **Figure 29-1**. This ED includes the Poolbeg Peninsula as well as parts of Ringsend and Irishtown.

39. Where possible, baseline information on an ED scale for those topics listed in **Table 29-2** has been presented and data on a regional (Dublin/Leinster) and national scale (Ireland) considered for comparative purposes, where relevant.

40. In some instances, the population assessment considers areas outside of the ED but within the 5 km study area. This was generally applied where the population assessment considered the outputs from other key assessments such as noise (**Chapter 24**), traffic (**Chapter 27**), air quality (**Chapter 25**) and onshore landscape and visual impact assessment (LVIA) (**Chapter 23**).

41. Nearshore activities such as swimming, windsurfing and surfing within the study area have been included in this assessment.

Offshore Infrastructure

42. For the offshore infrastructure, the population assessment applied a 50 km boundary definition as a wide study area. This 50 km study area is aligned with that established in **Chapter 15 Seascape, Landscape and Visual Impact Assessment** and is the region in which the offshore infrastructure will be visible to the public.

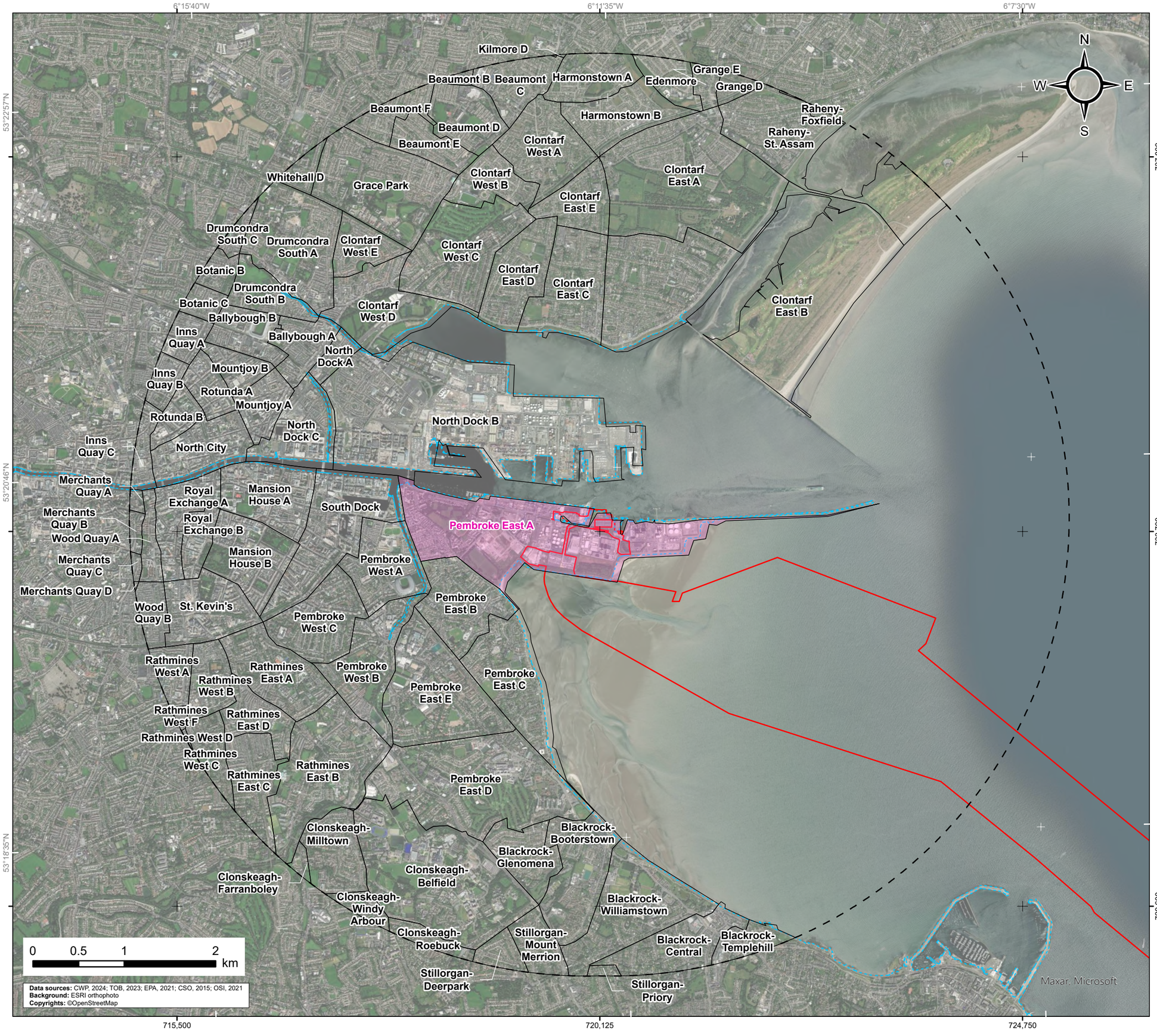
43. This is referenced as the zone of theoretical visibility (ZTV) and was determined as 50 km from the outermost turbine. Further definition of the ZTV and the methodology for defining the ZTV is set out in **Chapter 15 Seascape, Landscape and Visual Impact Assessment**. The study area for the offshore infrastructure is shown in **Figure 29.2**.

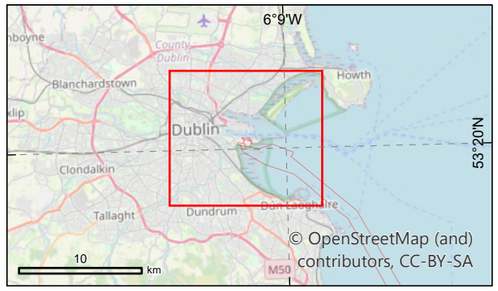
44. The study area for the offshore infrastructure was further refined for tourism/tourism economy impacts by considering zones within the ZTV that have a notable tourism economy and that may be impacted by the offshore infrastructure, rather than considering individual tourism-related receptors. This study area also includes sports and other clubs involved in nearshore water-based activities.

45. As evident from **Figure 29.2**, this study area covers a large area along the eastern coast of Ireland from Portmarnock / Malahide in north County Dublin to Courtown in County Wexford.

46. For the purpose of discussing population statistics and demographics, only the main settlements within the study area have been described in the baseline section. It is not practical to use population statistics from within each of the EDs in the offshore infrastructure study area.

47. It is also noted that both Fingal in North Dublin and Wexford are at the extreme ends of the study area for the offshore infrastructure and have been included based on their inclusion with the ZTV as set out in **Chapter 15 Seascape, Landscape and Visual Impact Assessment**. While the offshore infrastructure may be theoretically visible from these locations, the potential for likely significant effects on population in these areas is low, given their distance from the infrastructure. These administrative areas are retained in the study area but were not detailed in the baseline environment to the same extent as Dublin city, Dún Laoghaire-Rathdown and Wicklow.





Legend

- Planning application boundary
- High water mark
- LVIA 5 km study area
- Electoral divisions
- Electoral divisions - Pembroke East A

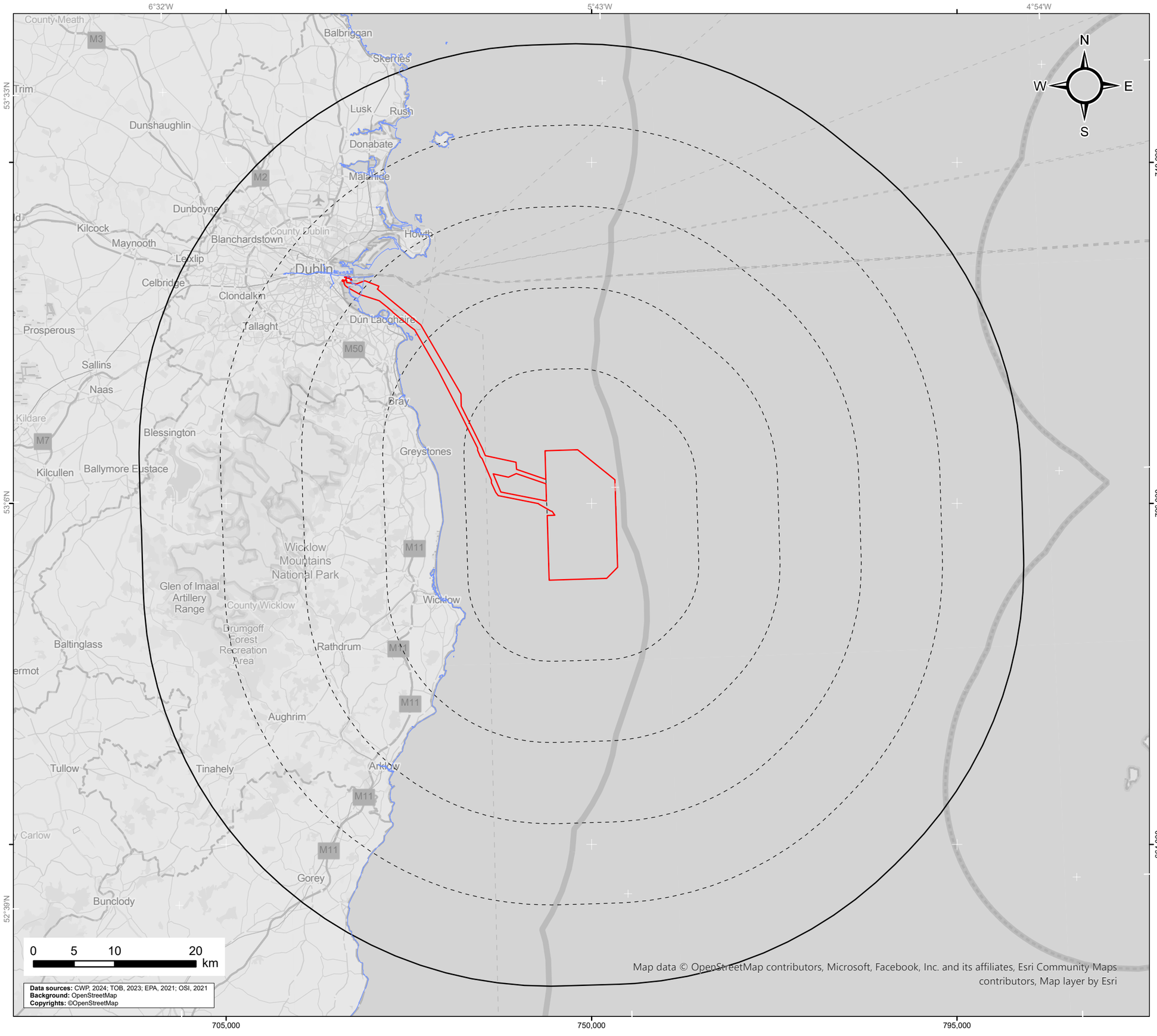
codling wind park	*Project:* Codling Wind Park	*Contractor:* TOBIN *Website:* www.tobin.ie

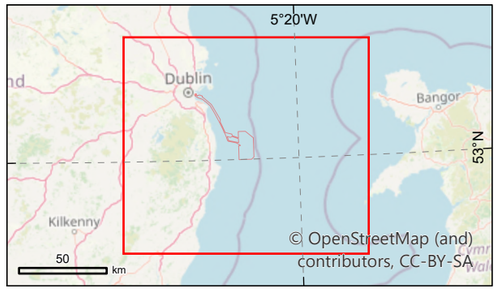
Figure 29.1
Study area for the onshore transmission infrastructure and landfall

CWP doc. number: CWP-TOB-ENG-08-01-MAP-0921

Internal descriptive code:	*Size:*	*CRS:*
PB - PAB..SS.PP.PL.BUFF.5km - ELECTORAL.DIVISIONS - EIAR.FIG.29.01	A3 *Scale:* 1:40,000	EPSG 2157

Rev.	Updates	Date	By	Chk'd	App'd
00	Final for issue	2024/08/15	SP	DM/EA	ES





Legend

- Planning application boundary
- 10 km incremental buffers from Array site
- SLVIA study area (50 km buffer from Array site)
- Low water mark

codling wind park

Project: Codling Wind Park

Contractor: TOBIN

Website: www.tobin.ie

Figure 29.2
Study area for the offshore infrastructure

CWP doc. number: CWP-TOB-ENG-08-01-MAP-0916

Internal descriptive code: LL - PAB..WF.RLB.BUFF.50km - - EIAR.FIG.29.02

Size: A3

Scale: 1:450,000

CRS: EPSG 2157

Rev.	Updates	Date	By	Chk'd	App'd
00	Final for issue	2024/08/15	SP	DM/EA	ES

29.4.3 Data and information sources

Site-specific surveys

48. Given the nature of this assessment, it was not necessary to carry out any site-specific field surveys; however, a site visit was carried out on 9 February 2023 to gain an understanding of the OTI study area and local community setting.

Desk study

49. A comprehensive desk-based review was undertaken to inform the baseline for the population assessment. Key data sources used to inform the assessment are set out in **Table 29-3.**

Table 29-3 Data sources

Data	Source	Date	Notes
2006, 2011, 2016 and 2022 Census data	Central Statistics Office (CSO)	25/04/2024	The released Census 2022 data has been included where available. Data has been captured mainly on an ED basis as this is the most appropriate scale for collated Census data and is commonly used for defining the existing population profile. Where appropriate, the ED profile has been compared against adjacent EDs as well as the county and national statistics to provide context for the study area profile.
		09/09/2024–30/04/2024	(Un)employment data.
Tourism statistics and trends	Fáilte Ireland	19/10/2022	Studies/tourism literature carried out by Fáilte Ireland and marketing information for Dublin, Wicklow and Wexford.
	Discover Ireland, Tourism Ireland, Visit Wicklow and Visit Wexford	25/04/2024	Information on tourist attractions and initiatives in the area was sourced from relevant websites to assess relevant features and amenities of relevance to the CWP Project.
	Hatch Ltd.	April 2022	*UK Offshore Wind Farms and Local Seaside Tourism Economies – Employment Evidence*.
Report on visitor awareness and perceptions of the Irish landscape	Fáilte Ireland	31/10/2023	Study report published by Fáilte Ireland relating to visitors' / tourists' reactions to onshore windfarms in Ireland.

Data	Source	Date	Notes
County Development Plans	Local authorities within the study area: • Fingal County Council • Dublin City Council • Dún Laoghaire-Rathdown County Council • Wicklow County Council • Wexford County Council	19/10/2022	The County Development Plans (CDPs) for each of the local authority administrative areas within which the study area for the OTI and offshore infrastructure are located have also been consulted to identify the features of the area which are highlighted for tourism potential, recreation use, enterprise/employment or other features relevant to establishing the baseline environment for this population assessment.
Strategic Development Plans / Zones and Local Area Plans	Local authorities within the study area, as above: • Poolbeg West SDZ • Cherrywood SDZ Scheme • Ballyogan and Environs LAP 2019-2025 • Woodbrook-Shanganagh LAP 2017–2023 • Wicklow Town-Rathnew Development Plan 2013–2019 • Bray Municipal District Local Area Plan 2018–2024 • Greystones-Delgany and Kilcoole Local Area Plan 2013–2019	19/10/2022	Within each local authority administrative area, there are more targeted local Area Plans (LAPs) and Strategic Development Zones (SDZ) which overlap with the study area. Those shown in the list were selected with a consideration for the coastline and nearshore environment within the study area. The LAPs and SDZs have also been reviewed to identify more focused tourism and recreational features of the particular areas:
Current and historical mapping and aerial imagery	Ordnance Survey of Ireland (OSI), Google Earth and Microsoft Bing Maps	19/10/2022	Current and historical land use mapping to identify current and historical land use as well as amenity facilities within the OTI and offshore infrastructure study areas.
Walking and recreational trails	Sport Ireland	19/10/2022	To identify marked walking trails and ways.
Economic Impact of Onshore	Wind Energy Ireland (WEI)	19/10/2022	Study report (April 2021).

Data	Source	Date	Notes
Wind in Ireland			
Codling Wind Park (CWP) economic impact analysis	BVG Associates	November 2023	An economic benefit analysis of the CWP Project has been carried out and is included as **Appendix 29.3 Economic Impact Analysis**.
Harnessing Our Potential: Investment and jobs in Ireland's Offshore Wind Industry	Carbon Trust	19/10/2022	Study report published by the Carbon Trust (March 2020).
National Trails	Sport Ireland Outdoors	2023	Detailed information and maps relating to Sport Ireland's accredited trails.

50. Information gathered to inform the baseline in terms of recreational use of the sea within and adjacent to the study area is taken from internet searches for local clubs involved in swimming, nearshore sailing, snorkelling and scuba diving, as well as using local knowledge of such clubs. Note that an assessment of the CWP Project on marine users beyond the shore is carried out in **Chapter 12 Commercial Fisheries** and **Chapter 16 Shipping and Navigation**.

29.4.4 Impact assessment

51. The significance of potential effects has been evaluated using a systematic approach, based upon identification of the importance/value of receptors and their sensitivity to the project activity, together with the predicted magnitude of the impact.

52. The terms used to define receptor sensitivity and magnitude of impact are based on those set out in the EPA EIAR Guidelines. These criteria have been adopted in order to implement a specific methodology for this population assessment. Consideration has also been given the significance criteria descriptions set out in the DMRB – LA112 Population and Human Health document, where appropriate.

Sensitivity of receptor

53. For each effect, the assessment identifies receptors sensitive to that effect and implements a systematic approach to understanding the impact pathways and the level of impacts on given receptors.

54. The definitions of receptor sensitivity for the purpose of the population assessment are provided in **Table 29-4**.

Table 29-4 Criteria for determination of receptor sensitivity

Sensitivity	Criteria
High	The receptor has a very low ability to absorb change and/or is of high tourism/recreational value, i.e. World Heritage Sites, international significance, prime agricultural lands.
Medium	The receptor has a low ability to absorb change and/or is of medium tourism/creational value, i.e. nationally important tourist attraction or recreational amenity, good agricultural lands.
Low	The receptor has some ability to absorb change and/or is of low tourism / recreational value, i.e. locally important amenity, locally recognised attraction/feature.
Negligible	The receptor has the ability to absorb change and/or is of little tourism/recreational value, i.e. common amenity / attraction / feature, low agricultural value lands.

Magnitude of impact

55. The scale or magnitude of potential impacts (both beneficial and adverse) depends on the degree and extent to which the CWP Project activities may change the environment, which usually varies according to project phase (i.e. construction, operations and maintenance (O&M) and decommissioning).

56. Factors that have been considered to determine the magnitude of potential impacts include:

- Area of influence and proportion of the population affected;
- Proximity to the proposed infrastructure; and
- The evidence base for the potential for effects on population.

57. The criteria for defining magnitude of impact for the purpose of the population assessment are provided in **Table 29-5**.

Table 29-5 Criteria for determination of magnitude of impact

Magnitude	Criteria
High	Proposals will cause a large change to the scale and/or quality of the receptor when compared against the existing baseline.
Medium	Proposals will cause a moderate change to the scale and/or quality of the receptor when compared against the existing baseline.
Low	Proposals will cause a slight change to the scale and/or quality of the receptor when compared against the existing baseline.
Negligible	Proposals will cause no discernible change to the existing baseline.

Significance of effect

58. As set out in **Chapter 5 Environmental Impact Assessment Methodology**, an impact assessment matrix (IAM) is used to determine the significance of an effect. In basic terms, the potential significance of an effect is a function of the sensitivity of the receptor and the magnitude of the impact, as shown in **Table 29-6** (adopted from **Figure 3.4** in the EIAR Guidelines).

59. The matrix provides a framework for the consistent and transparent assessment of predicted effects across all technical chapters; however, it is important to note that the assessments are based on relevant guidance and the application of professional judgement.

60. The matrix provides levels of effect significance ranging from imperceptible to profound as defined in the EIAR Guidelines (EPA, 2022). For the purposes of this assessment effects rated as being 'Significant–Moderate' or above are considered to be significant in EIA terms. Effects rated as being 'Moderate' are effectively Significant / Not Significant subject to professional judgement, with a rationale provided for this in the main assessment. Effects identified as less than moderate significance are not considered to be significant in EIA terms.

Table 29-6 Impact assessment matrix for determination of significance of effect

Sensitivity of receptor	Magnitude of impact			
	High	Medium	Low	Negligible
High	Profound	Significant	Moderate	Slight–Not Significant
Medium	Significant	Significant–Moderate	Moderate–Slight	Not Significant
Low	Moderate	Moderate–Slight	Slight	Not Significant
Negligible	Not Significant	Not Significant	Not Significant	Imperceptible

29.5 Assumptions and limitations

61. Information on the location and status of individual receptors within the OTI study area using data obtained from GeoDirectory is described in the following section. As part of the process to define the receptors in projects of this type, it is common to carry out a drive-over survey of the study area to validate the individual property information received from GeoDirectory and to include or exclude any relevant receptors. Given the urban and densely populated nature of the study area for the onshore transmission infrastructure, it was not feasible to validate the GeoDirectory data using drive-over surveys in this instance.

62. In respect of studies carried out on the general public about the effects of wind energy development, there have been limited studies carried out specifically in Ireland and less so in relation to offshore wind energy. In the subsequent sections, studies and research from the UK, Europe and the US have been referenced where there is a lack of Irish based data.

63. The most up-to-date information available has been used in the preparation of the baseline for the existing environment. However, there is often a lag in the publishing of national datasets, meaning there is the possibility that some information may not be available for the current time period and may become available close to the time of or shortly after the EIAR is submitted for planning approval.

29.6 Existing environment

64. The following sections provide a description of the baseline conditions for population.

65. As noted previously, this assessment addresses the potential impacts on the local population as a result of the infrastructure, which includes both onshore and offshore infrastructure. **Section 29.4.2** describes the study area which is different for the OTI and offshore Infrastructure.

66. Therefore, this 'Existing environment' section is subdivided into the 'Existing environment – OTI' and the 'Existing environment – Offshore infrastructure'.

67. OTI and offshore Infrastructure are assessed holistically for ease of navigation and assessment under the topics of residential amenity, land use and recreation, tourism economy and socioeconomics. Sections on demographics and predicted future baseline are also provided to ensure a comprehensive assessment of the study area and to aid the reader in the understanding of the study area as a whole.

29.6.1 Demographics OTI study area

68. An examination of the population statistics for the OTI study area has been carried out to identify population trends and density within the ED. Census records from 2006, 2011 and 2016 available from the CSO has been summarised in **Table 29-7** and **Table 29-8**. Data from the 2022 Census has also been included where available.

69. The onshore development and intertidal areas are located in the local authority area of Dublin City Council (DCC). The onshore development area falls within the Pembroke East A ED. Census data for the adjoining ED's of South Dock, Pembroke West A, Pembroke East B and North Dock B are also presented for comparison, along with the DCC and national numbers.

Table 29-7 Population trends 2006–2022 for the onshore transmission infrastructure study area

Area	Population 2006	Population 2011	Population 2016	Population 2022	% change from 2006 to 2022
State	4,239,848	4,588,252	4,761,865	5,149,139	+21.4%
Dublin City Council	506,211	527,612	554,554	592,713	+17.1%
Study Area (Pembroke East A ED)	4,754	4,929	5,078	5,017	+5.5%
South Dock ED	5,123	7,129	7,004	8,320	+62.4%
Pembroke West A ED	4,262	4,673	4,992	5,144	+20.7%
Pembroke East B ED	3,480	3,608	3,818	3,852	+10.7%
North Dock B ED	3,690	6,895	7,695	10,173	+175.7%

70. During the period 2016 to 2022, the national population increased by approximately 21.4%, the population in the DCC local authority administrative area increased by approximately 17.1% and the adjoining EDs increased by an average of 13.1%, while the population of Pembroke East A increased by 5.5%. This illustrates that the population of Pembroke East A is not increasing at the same rate as the rest of the country, the wider DCC area or the adjoining EDs. This may be indicative of the mainly

industrial nature of the study area to date and the presence of three public parks. The population of Pembroke East A declined from 2016 to 2022, which would suggest that there is not currently a high degree of new residents coming to this ED.

71. It is noted, however, that the Poolbeg West Strategic Development Zone (SDZ) is located within the OTI study area and has designated zoning for high-density residential development. If this development proceeds, it is likely to significantly increase the population in the Pembroke East A ED in the future.

72. Population density is beneficial to characterise how populated an area is relative to its size and is useful for comparison against neighbouring EDs. **Table 29-8** shows population density for the OTI study area, as well as the neighbouring EDs and the DCC administrative area. The table indicates that Pembroke East A ED is much less densely populated when compared with DCC and the surrounding EDs. As noted above, this low population density in the Pembroke East A ED is due to a significant proportion of the area being occupied by industry as well as three public parks. This is similar to North Dock B ED, which is also mostly comprised of industrial port activity.

Table 29-8 Population density (2022 Census)

Area	Population density – 2022 Census (persons / km^2)
State	73
Dublin City Council	6,802
Study Area (Pembroke East A ED)	2,341
South Dock ED	7,911
Pembroke West A ED	8,072
Pembroke East B ED	5,643
North Dock B ED	2,936

73. The age grouping for the Pembroke East A ED is presented in **Table 29-9**, showing 70% of the population (3,665 persons) in the 18–64 years age group.

Table 29-9 Breakdown of age grouping within the Pembroke East A ED (2022 Census)

Age groups		
0–19 Years	20–64 Years	65+ Years
939	3,495	583

74. The age profile of the ED has been reviewed and is presented in **Plate 29-1**. The average age in the ED was 39 years, which is in line with the national average age of 39 years. The average age in the DCC administrative area was 38.6 years.

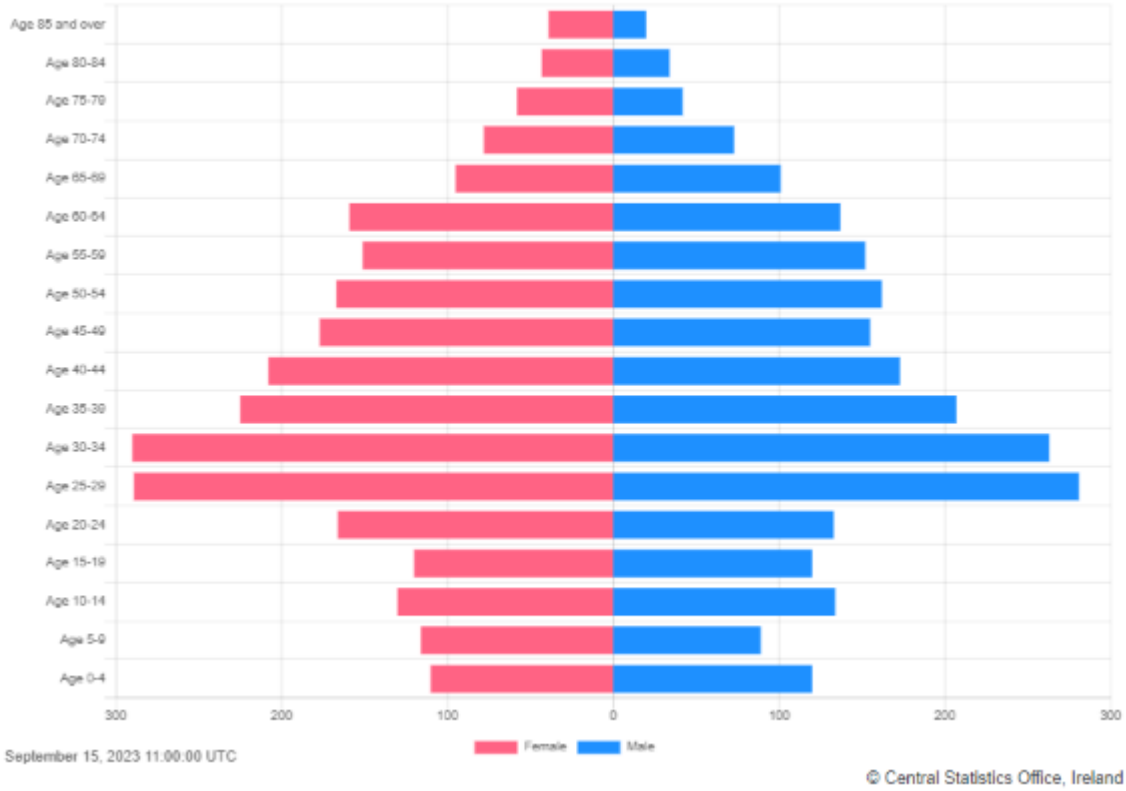


Plate 29-1 Age profile of the Pembroke East A Electoral Division (CSO, 2022)

29.6.2 Demographics offshore infrastructure Study Area

75. Population statistics for the onshore study area were presented in terms of the ED and surrounding EDs.

76. Given the extents of the offshore infrastructure study area, the assessment has presented a comparison of population statistics focused on the main urban centres, rather than on an ED basis. This is set out in **Table 29-10**.

Table 29-10 Population trends 2006–2022 for offshore transmission infrastructure study area

Area	Population 2006	Population 2011	Population 2016	Population 2022	% change from 2006 to 2022
State	4,239,848	4,588,252	4,761,865	5,149,139	+21.4%
Dublin City Council	506,211	527,612	554,554	592,713	+17.1%
Dún Laoghaire-Rathdown Council	194,038	206,261	218,018	233,860	+20.5%
Wicklow County Council	126,194	136,640	142,425	155,851	+23.5%
Arklow	11,759	13,009	13,163	13,399	+13.9%

Wicklow Town	10,070	10,356	10,584	12,957	+28.7%
Greystones-Delgany	14,569	17,468	18,140	22,009	+51.1%
Bray	31,901	31,872	32,600	33,512	+5%
Dún Laoghaire East Central ED (highest density ED in Dún Laoghaire coastal EDs)	1,855	2,234	2,489	2,604	+40.4%
Pembroke East C / Sandymount	3,761	4,004	3,920	4,179	+11.1%

77. During the period from 2006 to 2022, there was a 21.4% increase in the population of the State, which is greater than the rate of increase of population in the main urban centres listed in **Table 29-10**, with the exception of Wicklow County Council, Wicklow Town, Greystones-Delgany and Dún Laoghaire East central ED, which are all above the national population growth rate.

29.6.3 Residential amenity

Residential amenity – OTI

78. The locations of properties and buildings (receptors) in the vicinity of the OTI have been identified using address data from the GeoDirectory database which is used to populate Eircodes. The validity of the GeoDirectory data has been checked by way of publicly available mapping, aerial imagery and street-level imagery. Receptors within 2 km of the centre of the onshore substation boundary location have been identified and plotted using GIS software. This 2 km buffer is captured within the OTI 5 km study area.

79. The 2 km buffer is aligned with the buffer used in **Chapter 24 Noise and Vibration** to identify individual receptor locations which have potential to be directly or indirectly impacted by the CWP Project. As above, this 2 km buffer is also captured within the OTI 5 km study area. A 2 km buffer is used for this receptor group rather than the ED study area, as there is potential for individual properties from neighbouring EDs to be located close to the OTI, depending on where the infrastructure is located geographically within the ED, i.e., at the onshore substation, transition joint bays (TJBs) or the landfall works (offshore export cable). In this case, a defined distance from centre of onshore substation boundary location ensures that all of the closest properties are identified, rather than only those within the Pembroke East A ED.

80. Although the onshore development area is largely industrial, there is a high concentration of properties within 2 km of the onshore substation due to its urban location. There were 3,813 properties identified from the GeoDirectory search, which are broken down as residential, commercial and vacant, as shown in **Table 29-11**.

Table 29-11 Breakdown of property types within 2 km of onshore substation location

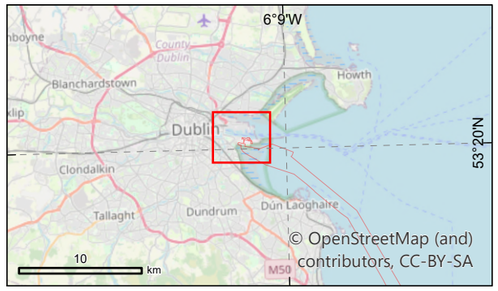
Description	No. of properties based on GeoDirectory data
Residential properties	3,418
Commercial properties	278
Vacant	117
Total	3,813

81. **Figure 29-3** shows the concentration density of residential properties within the 2 km buffer zone, which highlights where the residential centres are concentrated and shows how they are removed from the onshore development area, in particular the onshore substation. The high population density to the west of the onshore development area mirrors the Census data. It also highlights that within the immediate area around the Onshore development area and within the port areas north of the River Liffey there are no residential receptors. Residential receptors would also be typically described as being sensitive to new development, given the potential for impacts on a person's home.

82. The closest residential receptors are located c. 1 km from the onshore substation and c. 700 m from the TJBs.

6°13'20"W
6°12'W
6°10'40"W
53°21'30"N
53°20'33"N
53°19'36"N
735,400
734,000
732,600
717,600
719,400
721,200
N
W
E
S
0 0.25 0.5 1 km
Maxar, Microsoft

Data sources: CWP, 2024; TOB, 2023; EPA, 2021; OSI, 2021
Background: ESRI orthophoto
Copyrights: ©OpenStreetMap



Legend

- Planning application boundary
- Onshore substation boundary (operational)
- High water mark

Residential properties density

- Sparse
- Dense

codling wind park

Project: Codling Wind Park

Contractor: TOBIN
Website: www.tobin.ie

Figure 29.3
Residential Property Density
2 km from the onshore substation

CWP doc. number: CWP-TOB-ENG-08-01-MAP-0920

Internal descriptive code: PB - PAB..SS.PP.PL - RESIDENT.PROPERTY.DENSITY - EIAR.FIG.29.03

Size: A3
Scale: 1:15,000

CRS: EPSG 2157

Rev.	Updates	Date	By	Chk'd	App'd
00	Final for issue	2024/08/15	SP	DM/EA	ES

Residential amenity – offshore infrastructure

83. The impact of the offshore infrastructure would be expected to decrease moving inland into the study area. This is due to increasing distance, topography, vegetation and the presence of built form. Hence, the consideration of residential amenity is largely focused along the coastline.

84. The array site is located 13–22 km from the coast of County Wicklow. There are a number of key population centres running along this coastline, such as Howth to the north, Dublin city centre, Dún Laoghaire, Bray and Greystones, Wicklow and Arklow to the south. These centres and the intervening coastline between them are populated with varying densities of residential receptors.

85. The consideration of residential amenity relative to the offshore infrastructure has focused on the outputs from **Chapter 15 Seascape, Landscape and Visual Impact Assessment** and **Chapter 23 Landscape and Visual Impact Assessment.** These chapters have identified study areas based on the receptors that could be impacted by the development and/or operation of the offshore infrastructure and, on this basis, have assessed appropriate representative locations relative to residential receptors. This is considered further in **Section 29.10**.

29.6.4 Land use and recreation

Land use and recreation – OTI

86. The onshore development area occupies an area of 23.1 ha and is located entirely on the Poolbeg Peninsula in an industrial area adjacent to energy generation, waste management, wastewater treatment and port activities. The nearest residential centres are in Ringsend, Irishtown and Sandymount.

87. The primary land use/activities adjacent to the onshore development area is industrial, with some commercial properties within 1 km of the onshore substation. The industrial neighbours are the Dublin Waste to Energy (WtE) facility, ESB Dublin Bay Power Plant, Ringsend wastewater treatment plant (WWTP), Hammond Lane Metal Company and the ESB Poolbeg Generating Plant. Much of the commercial businesses are laboratories, mechanics, engineers, a recycling centre and a small diner. The residential properties are densely populated to the west of the onshore development area, at a minimum distance of c. 450 m. The onshore substation boundary is c. 1,000 m from the nearest residential property.

88. The land use/activities in this ED are typical of an urban setting and are generally divided into heavy industrial in the east and centre, with residential and recreation in the west. The industrial activities are typical of portside lands and provide essential public infrastructure to serve the wider city area. The landscape is largely flat, with the Onshore development area and the wider area located at a similar topography of 2–6 m ODM.

89. The most significant features of the ED and adjacent areas are the River Liffey, which flows adjacent to the onshore substation, the River Dodder, which denotes the point at which the ED ends, Dublin Bay, a portion of Sandymount beach and Poolbeg Lighthouse. There are several community facilities and amenities used by many residents in the locality, such as Sean Moore Park, Ringsend and Irishtown Community Centre, Clanna Gael Fontenoy GAA Club, Irishtown Stadium and all-weather pitches. Pembroke Cove is a hiking trail which runs along the south side of the peninsula towards Irishtown Nature Park. Other sports clubs within the ED include Poolbeg Yacht and Boat Club, Cambridge Football Club and Half Moon Swimming and Water Polo Club. To the north of the study area across Dublin Bay, North Bull Island is the location of a number of recreational activities including the Royal Dublin Golf Club, leisure swimming and nearshore water sports (such as kite surfing).

90. There are three schools and one primary healthcare centre located in the ED of Pembroke East A. The schools are St Patrick's Boys' National School, Ringsend College and Ringsend Rock School. There are a number of other schools in close proximity to the ED boundary, including St Matthew's National School, Marian College, Sandymount Educate Together Secondary School, Shellybanks Educate Together School and Scoil Mhuire Lakelands Girls National School.

91. There is no public rail infrastructure within the ED. Several public bus routes operate along the R802 and the R131, which are on the western boundary of the ED and intersect the residential communities. Further information on public road and rail infrastructure is presented in **Chapter 27 Traffic and Transportation**.

Land use and recreation – offshore infrastructure

92. The offshore infrastructure study area extends across a large portion of the eastern coastline of Ireland, as shown on

93. **Figure** 29-2. In terms of land use / recreational amenities, areas of particular note and relevance to the study area are walks and trails, golf courses, viewpoints, and parks and demesnes. These are detailed in **Chapter 15 Seascape, Landscape and Visual Impact Assessment**.

94. There are also yachting and boating clubs located along the coastline such as Clontarf Yacht and Boat Club, Dún Laoghaire Sailing, School and the Royal Irish Yacht Club that are not considered under the OTI study area, as they are beyond the nearshore.

95. A number of sea-based recreational amenities are located along the coastline within the study area and where it could be considered that persons using the amenity of the sea from these locations could be impacted by the proposed offshore infrastructure. In that regard, the WTGs would remain the main offshore infrastructure which may be visible to users. However, the potential for the underwater offshore export cables could also be relevant, particularly the installation of the cables during the construction phase in close proximity to the proposed landfall location at Poolbeg. The visual assessment of the WTGs, IACs, interconnector cables and OECs is completed in **Chapter 15 Seascape, Landscape and Visual Impact Assessment,** and the findings of such have been used to assess the effects on the recreation locations.

96. In discussing the offshore infrastructure which may be visible from land, this refers mainly to the WTGs, which are the largest structures and the most likely to be visible from the coastline. The offshore substation may also be visible but to a much lesser extent.

97. The land use / recreational amenities described in this section are those based on the Irish coastline only. Transboundary effects are scoped out as per **Section 29.12** below.

98. Golf courses are common throughout Ireland and are present within the study area. Golf is a popular recreational outlet in Ireland and some golf courses are advertised and promoted with a focus on their position close to the sea; in particular, links golf courses.

99. Some parks / demesnes including playgrounds and other amenities attract the local population for recreation. Playgrounds may also be located along walkways or near car parks and typically in the built-up areas within Dublin and the coastal towns in Wicklow and Wexford. It is not feasible to list all these locations here, but it is acknowledged that the main population centres along the coastline within the study area are likely to have playgrounds or other amenities for children and young adults.

100. Viewpoints represent important locations that the local population may visit recreationally on a regular basis to take in views of the surrounding landscape and seascape. These may be prominent coastal locations such as headlands or elevated points in the mountains or hills. From a viewpoint, the WTGs may be visible and there may be potential for a visitor's enjoyment of that amenity to be impacted, either positively or negatively, by the offshore infrastructure. The representative viewpoints are

captured in **Chapter 15 Seascape, Landscape and Visual Impact Assessment**, where a photo montage of the view of seascape from each location is presented. The viewpoints were selected based on ZTV, desk-based and field-based work and consultation with local authorities.

101. There are a number of other sea-swimming clubs, triathlon / multisport clubs, bathing and diving locations within the offshore infrastructure study area. The use of these amenities is unlikely to be directly affected by the installation and presence of the underwater offshore export cables, but the enjoyment of the amenity is considered in terms of the view of the offshore infrastructure and, in particular, the WTGs. It is noted, however, that the use of these amenities is, by its nature, from sea level and the presence of the offshore infrastructure in the distance would not be as prominent as for someone walking along a promenade or looking out to sea from a recognised viewpoint or elevated location.

29.6.5 Tourism economy

Tourism economy – OTI

102. The Poolbeg Peninsula is relatively detached from the predominant tourist hub of the city which is focused on the Dublin city centre area around College Green, Dame Street, Grafton Street and O'Connell Street. The OTI study area incorporates Dublin city centre; however, the Pembroke East A Electoral Division which contains the OTI is dissimilar to Dublin city centre as it is not an area reliant on or designed for a tourist economy. The following section describes the existing environment for Dublin and considers the OTI study area, and the Poolbeg Peninsula more specifically, with regards to the existing tourism economy.

103. The National Tourism Development Authority (Fáilte Ireland) periodically collates statistics on overseas visitors to Ireland and to regions within the country. **Table 29-12** shows the most recent overseas tourism statistics from 2019 (released March 2021) for the country as a whole and the Dublin region. It is noted that this data from Fáilte Ireland is from a period before the Covid-19 public health emergency and therefore was not affected by travel restrictions which were put in place during that period, and which significantly impacted on tourism in Ireland and across the globe.

Table 29-12 Overseas tourism statistics 2019

Locations travelled to	Tourist numbers	Revenue generated
Ireland	9,674,000	€5.3 billion
Dublin region	6,644,000	€2.2 billion

104. In relation to domestic tourism (tourism involving residents of one country travelling only within that country), the Fáilte Ireland data reports 11.6 million domestic trips within Ireland in 2019, an increase of over 6% from 10.9 million in 2018. The largest component of the domestic trips in 2018 was short holiday trips of 1 to 3 nights, accounting for approximately 40% of total domestic trips. Trips to visit friends and relatives accounted for 34% of all domestic trips. Most of these trips are shown to occur in the late summer period (July–September) with hiking / walking the most popular activity engaged in by 26% of domestic holidaymakers.

105. Fáilte Ireland statistics for 2017 show that Dublin attracted 5,936,000 overseas visitors, which is far higher than any other individual county. The county also supported 1,497,000 domestic trips that year. The Guinness Storehouse was the most popular fee-paying tourist attraction in 2018, with Dublin Zoo and the Book of Kells also included in the top 4. The National Gallery of Ireland was the second most popular free attraction in 2018.

106. None of the top 10 free or fee-paying tourist attractions are maritime focused or located close to the onshore development area, with the National Museum of Ireland and the National Gallery of Ireland the closest attractions included on the list, both of which are > 3.5 km west of the area.

107. While there are a number of notable historical buildings and structures on the Poolbeg Peninsula, the area is used more as an important recreation amenity than as a formal tourist attraction. In particular, it is noted that the central and eastern part of the ED largely comprises heavy industrial activity.

108. The decommissioned chimneys of the ESB Poolbeg Generating Station are recognisable structures on the Dublin skyline. They stand at over 207 m tall and are visible from across the city, as well as from higher vantage points to the west, north and south. The towers are located within the ESB Poolbeg Generating Station and are c. 350 m east of the onshore substation site. While the appearance and structure of the towers are symbolic of Dublin and its industrial heritage, they are not accessible to the public and do not attract tourists to their specific location.

Tourism economy – offshore infrastructure

109. Figures from the Wicklow County Development Plan 2021–2027, state that in 2017, 275,000 overseas tourists visited Wicklow, generating €73 million of revenue, with a further 319,000 domestic visitors generating an estimated revenue of €49 million. Statistics from Fáilte Ireland state that Dublin received over 6 million overseas tourists, with a total spend of €2.1 billion in 2018 (Fáilte Ireland, 2019).

110. Several areas within the offshore infrastructure study area have developed a tourism economy. Population centres such as Bray and Greystones in County Wicklow, and Howth and Killiney in Dublin, experience tourism, particularly along their coastal fronts, which contributes to their respective local tourism economies.

111. Bray's municipal district tourism is an important local asset in close proximity to Dublin, which offers significant opportunities to attract tourists from the capital. The Bray Seafront area is the primary tourist centre of the town, according to the Bray Municipal District LAP. '*The "Seafront Area" is defined as the area included in the "SF" and OS1 zones, which run parallel to Bray Beach. Bray Seafront is a locally distinctive and significant area in the town. It is rich in architectural and natural heritage, comprising the beach, the Esplanade and many fine architectural structures dating to Victorian times, many of which are listed in the Record of Protected Structures. The area has huge symbolic, cultural, social and economic importance and, as such, its character must be preserved to ensure that its amenity and economic value is safeguarded for existing and future generations'* (Wicklow County Council, 2018).

112. Greystones experiences tourism predominantly centred around '*the area's coastal amenity, including the existing cliff walk, Greystones harbour and marina*' (Wicklow County Council, 2013).

113. Howth is a fishing village on Dublin's northern coastline. The area experiences tourism generally focused on Howth Head and its associated cliff walks. Howth has been designated as a special amenity area (Fingal County Council, 2024).

114. Beyond the coastline of Dublin and Wicklow, the Wicklow Mountains National Park is a significant tourist destination both locally and on a national scale. The national park is Ireland's largest and spans approximately 20,000 ha. Glendalough is the most visited area of the national park, with 732,824 visitors in 2018, which amounted to third position on Ireland's top 10 free attractions for 2018. Powerscourt Waterfall and Gardens occupied ninth position on this list, with 472,523 visitors (Wicklow County Council, 2022). Data post the Covid-19 pandemic is not yet available, which makes the data from 2018 the most relevant in determining normal levels of tourism in a functioning post-pandemic economy.

29.6.6 Socioeconomics

115. Employment is an important indicator in the economic assessment of an area. This section examines employment status and unemployment levels within the study area regions.

Socioeconomics– OTI

116. Due to how CSO data is presented, the Dublin region rather than ED level is presented in terms of labour force and live register data.

117. **Table 29-13** illustrates the findings from the Q4 2023 Labour Force Survey published by the CSO. The first case of Covid-19 was reported in Ireland at the end of February 2020 and all Covid-19 restrictions, outside of medical settings, were effectively lifted in April 2022. While it is acknowledged that the public health emergency will have had an effect on the labour market, it is considered that the Q4 2023 statistics are the most accurate representation of employment levels in the current post-pandemic environment.

118. The unemployment rate in **Table 29-13** is the number of unemployed persons expressed as a percentage of the total labour force (aged 15–74). The unemployment rate for the State in Q4 2023 was 4.2%, while the unemployment rate for the Dublin region was 4.7%, showing that unemployment in the region (in Q4 2023) was very similar to the State.

119. The participation rate is the number of persons available to the labour force (i.e., persons from 15–74 years old either working or looking for work) expressed as a percentage of the total population. In Q4 2023, the participation rate in the State was 65.4% compared with 67.9% in the Dublin region, showing slightly higher participation in the Dublin area.

Table 29-13 Labour Force Survey (Q4 2023)

Location	Unemployment rate	Participation rate
State	4.2%	65.4%
Dublin region	4.7%	67.9%

120. The CSO also publishes figures relating to the live register. These figures are not strictly a measure of unemployment as they include persons who are legitimately working part-time and signing on part-time. However, the register can be used to provide an overall trend within an area.

121. The figures in **Table 29-14** show that, over the period of March 2023–March 2024, there was a 3.29% decrease in the number of persons on the live register in the State as a whole and a 3.34% decrease in the number of persons on the live register in the Dublin region. It is likely that that the reduction in the live register figures is due to the recovery of the local economy in a post-pandemic society.

Table 29-14 Live register figures (March 2023–March 2024)

Location	March 2023	March 2024	% change
State	179,303	173,396	-3.29%
Co. Dublin	44,562	43,073	-3.34%

Socioeconomics – offshore infrastructure

122. The offshore infrastructure 50 km study area incorporates parts of Dublin, Wicklow and only a small part of Wexford. From a socioeconomic perspective, this existing environment section has focused on Dublin and Wicklow, as these counties make up the significant part of the study area. Dublin is detailed from a socioeconomic perspective in the OTI section above.

123. Data specific to the Mid-East (including County Wicklow) for Q4 2023 identifies that the unemployment rate was 3.6% while the labour force participation rate was 66.7%.

124. The live register figures displayed in **Table 29-15** below show a reduction in those in County Wicklow that is likely due to the recovery of the local economy in a post-pandemic society.

Table 29-15 Live register figures (January 2023–January 2024)

Location	March 2023	March 2024	% change
Co. Wicklow	4,813	5,037	4.65%

29.6.7 Predicted future baseline OTI

125. In the absence of the OTI, the future baseline with regard to population will continue to evolve with inward and outward movement of the local population from the ED. As per **Table 29-7**, the population of the Pembroke East A ED has not increased at the same rate as surrounding EDs or the DCC area. However, the strategic zoning of the lands to west, including the former Irish Glass Bottle site, for high-density residential development is likely to result in a large increase in the population within the area, if the development goes ahead.

126. The future land use of the onshore substation may be developed for some other form of industrial or similar development in accordance with the land zoning designation for the site, which is 'Employment (Heavy)'. This would align with the existing industrial nature of the development in this part of the Poolbeg Peninsula. Available land within the ED for such use is at a premium; therefore, it is reasonable to assume that, if the CWP Project did not proceed, that another industrial development would be proposed at the site in future. Similarly, it is likely that there will be future upgrades or improvements in underground electrical transmission infrastructure in the study area, which would follow similar routes to those proposed as part of the OTI.

127. With regard to the OTI study area and climate change, it is likely that, with an increased frequency of climate events into the future, there is an increased risk of localised impacts on recreational and residential amenities.

29.6.8 Predicted future baseline offshore infrastructure.

128. In the absence of the offshore infrastructure, the future baseline of the offshore infrastructure study area with regards to population will continue to evolve. The population is likely to continue to increase in line with the growth trends displayed in **Section 29.6.2 Offshore study area demographics**. The region's use as a commuter belt is likely to increase in line with the growth of Dublin city and other economic hubs.

129. The future use of the array site area would likely remain undeveloped in the absence of the proposed development.

130. In relation to the offshore infrastructure, there are no climate change or natural trend influences that are considered relevant to this assessment, given that the separation between the OTI study area, and the main turbine and OSS infrastructure.

29.7 Scope of the assessment

131. An EIA scoping report for the offshore infrastructure was published on 6 January 2021, with the scoping report for the onshore infrastructure published on 6 May 2021. The scoping reports were uploaded to the CWP Project website and shared with regulators, prescribed bodies and other relevant consultees, inviting them to provide relevant information and to comment on the proposed approach being adopted by the Applicant in relation to the offshore and onshore elements of the EIA.

132. There were no direct responses to the scoping reports relevant to this population assessment. As noted in **Section 29.3**, Fáilte Ireland provided a copy of their guidance in relation to addressing tourism in an EIAR and this guidance has been considered in the description of the existing environment, as set out above.

133. General feedback received as part of the EIAR consultation process has been reviewed in the completion of this population assessment.

134. Based on responses to the scoping reports, further consultation and refinement of the CWP Project design, potential impacts to population scoped into the assessment are listed below in **Table 29-16**.

Table 29-16 Potential impacts scoped into the assessment.

Impact no.	Description of impact	Notes
Construction		
Recreational amenity		
Impact 1:	Impacts on onshore and nearshore recreational receptors during the construction of the OTI and landfall.	Considers the extent to which access to and the enjoyment of onshore and nearshore recreational receptors / activity may be affected by construction phase activities, i.e., due to severance of access routes, increased traffic and dust emissions.
Tourism economy		
Impact 2:	Impact on the tourism economy during the construction phase of the offshore infrastructure.	This relates to potential impacts on the tourism economy resulting from construction activities associated with the offshore infrastructure.
Socioeconomics		
Impact 3:	Economic effects associated with construction of the CWP Project.	This impact considers the CWP Project (onshore and offshore combined). Gross value-add (GVA and full time equivalent (FTE) years considered. Refer to the following report for supporting information: • **Appendix 29.3 Economic Impact Analysis**.

Operation and maintenance		
Recreational amenity		
Impact 1:	Impacts on recreational receptors associated with the O&M phase of the offshore infrastructure.	This impact relates to potential O&M phase impacts from the offshore infrastructure on recreational receptors. This section of the assessment references out to the findings of topic specific assessments, where these receptors have been considered. This includes: • **Chapter 15 Seascape Landscape and Visual Impact Assessment** • **Chapter 16 Shipping and Navigation.**
Tourism economy		
Impact 2:	Impacts on the tourism economy associated with the O&M phase of the offshore infrastructure.	This relates to potential impacts on the overarching tourism economy.
Socioeconomics		
Impact 3:	Economic effects associated with the O&M phase of the CWP Project.	This impact considers the CWP Project (onshore and offshore combined) for the O&M Phase. GVA and FTE years considered. Refer to the following report for supporting information: • **Appendix 29.3 Economic Impact Analysis**
Decommissioning		
Recreational amenity		
Impact 1:	Impacts on onshore and nearshore recreational receptors during the decommissioning of the OTI.	Potential decommissioning phase impacts on recreational receptors.
Tourism economy		
Impact 2:	Impact on the tourism economy during the decommissioning of the offshore infrastructure**.**	Potential decommissioning phase impacts on the tourism economy.
Socioeconomics		
Impact 3:	Economic effects associated with decommissioning of the CWP Project.	Potential decommissioning phase impacts on the surrounding economy.

135. Based on responses to the scoping report, further consultation and refinement of the CWP Project design, potential impacts to population scoped out of the assessment are listed below in **Table 29-17**.

Table 29-17 Potential impacts scoped out of the assessment

Description of impact	Justification for scoping out
Impacts to demographic profile	There is employment associated with all phases of the development. However, the levels of employment would not be considered to have any discernible effects on existing local population numbers or population profile during the construction, operational and decommissioning phases. This was not considered further in the assessment.
Direct impacts on tourist facilities and attractions	The CWP Project will not have a direct impact on tourist facilities or attractions, such as in terms of access. This was not considered further in the assessment.
Impacts on the tourism economy associated with the OTI and landfall (construction, O&M and decommissioning phases)	From a tourism perspective, the Poolbeg Peninsula was considered relatively detached from the predominant tourist hub of the city, which is focused on the Dublin City Centre area including College Green, Dame Street, Grafton Street and O'Connell Street etc. The area surrounding the OTI is not an area reliant on or designed towards a tourist economy. Impacts associated with the OTI are not predicted to have significant effects and therefore has been scoped out of the assessment. Overall, the potential for impacts to on the tourism economy are not predicted to have significant effects and therefore have been scoped out of the assessment.
Impacts on residential receptors as a result of the CWP Project (construction, O&M and decommissioning phases)	This impact relates to potential construction and O&M phase impacts on residential receptors (such as dust emissions, visual impacts, traffic levels and noise levels). These effects are addressed in their respective topic specific chapters: • **Chapter 15 Seascape Landscape and Visual Impact Assessment** • **Chapter 23 Landscape Visual Impact Assessment;** • **Chapter 24 Noise and Vibration;** • **Chapter 25 Air Quality; and** • **Chapter 27 Traffic and Transportation**. This was not considered further and was scoped out of this assessment
Impacts on onshore and nearshore recreational receptors during the O&M phase the OTI and landfall.	There is minimal above ground infrastructure associated with the TJBs, onshore export cables and ESBN network cables. Similarly, the offshore export cables installed through the intertidal area

	will buried underground and/or installed in below ground cable ducts. The onshore substation will be unmanned during the O&M phase, with the exception of maintenance and inspection visits, which will on average of c. 1 visit per week. The potential for impacts to on the recreational receptors during the O&M phase are not predicted to have significant effects and therefore have been scoped out of the assessment.
Impacts on recreational receptors associated offshore infrastructure (construction/decommissioning phases)	Access to any onshore or nearshore receptors would not be affected by construction phase activities for the offshore infrastructure. Topic specific assessments have been completed and which consider construction phase impacts under: • **Chapter 15 Seascape Landscape and Visual Impact Assessment** • **Chapter 16 Shipping and Navigation** This impact has been scoped out of the assessment

29.8 Assessment parameters

29.8.1 Background

136. Complex, large-scale infrastructure projects with a terrestrial and marine interface, such as the CWP Project, are consented and constructed over extended timeframes. The ability to adapt to changing supply chain, policy or environmental conditions and to make use of the best available information to feed into project design, promotes environmentally sound and sustainable development. This ultimately reduces project development costs and therefore electricity costs for consumers and reduces CO2 emissions.

137. In this regard the approach to the design development of the CWP Project has sought to introduce flexibility where required, among other things, to enable the best available technology to be constructed and to respond to dynamic maritime conditions, while at the same time to specify project boundaries, project components and project parameters wherever possible, while having regard to known environmental constraints.

138. **Chapter 4 Project Description** describes the design approach that has been taken for each component of the CWP Project. Wherever possible, the location and detailed parameters of the CWP Project components are identified and described in full within the EIAR. However, for the reasons outlined above, certain design decisions and installation methods will be confirmed post-consent, requiring a degree of flexibility in the planning consent.

139. Where necessary, flexibility is sought in terms of:

- Up to two options for certain permanent infrastructure details and layouts such as the WTG layouts;
- Dimensional flexibility, described as a limited parameter range, i.e., upper and lower values for a given detail such as cable length; and

- Locational flexibility of permanent infrastructure, described as limit of deviation (LoD) from a specific point or alignment.

140. The CWP Project had to procure an opinion from An Bord Pleanála to confirm that it was appropriate that this application be made and determined before certain details of the development were confirmed. An Bord Pleanála issued that opinion on 25 March 2024 (as amended in May 2024) and it confirms that the CWP Project could make an application for permission before the details of certain permanent infrastructure described in **Section 4.3** of **Chapter 4 Project Description** is confirmed.

141. In addition, the application for permission relies on the standard flexibility for the final choice of installation methods and O&M activities.

142. Notwithstanding the flexibility in design and methods, the EIAR identifies, describes and assesses all the likely significant impacts of the CWP Project on the environment.

29.8.2 Options and dimensional flexibility

143. Where the application for permission seeks options or dimensional flexibility for infrastructure or installation methods, the impacts on the environment are assessed using a representative scenario approach. A 'representative scenario' is a combination of options and dimensional flexibility that has been selected by the author of this EIAR chapter to represent all the likely significant effects of the project on the environment. Sometimes, the author will have to consider several representative scenarios to ensure all impacts are identified, described and assessed.

144. For population, this analysis is presented in **Appendix 29.2**, which identifies one or more representative scenario for each impact with supporting text to demonstrate that no other scenarios would give rise to new or materially different effects; taking into consideration the potential impact of other scenarios on the magnitude of the impact or the sensitivity of the receptor(s) that is being considered.

145. **Table 29-18** and **Table 29-19** below, present a summarised version of **Appendix 29.2** and describe the representative scenarios on which the construction and O&M phase population assessment has been based. Where options exist, for each receptor and potential impact, the table identifies the representative scenario and provides a justification for this.

146. For the OTI, the infrastructure design and installation techniques with potential to give rise to population impacts have been confirmed in the planning application and consequently the assessment is confined to a single scenario for all construction and O&M phase impacts.

29.8.3 Limit of deviation

147. Where the application for permission seeks locational flexibility for infrastructure, the impacts on the environment are assessed using a LoD. The LoD is the furthest distance that a specified element of the CWP Project can be constructed.

148. This chapter assesses the specific preferred location for permanent infrastructure. However, **Appendix 29.2** provides further analysis to determine if the proposed LoD for permanent infrastructure may give rise to any new or materially different effects, taking into consideration the potential impact of the proposed LoD on the magnitude of the impact.

149. For population, a conclusion is provided in **Table 29-19** which confirms that the LoDs for the permanent infrastructure relevant to the population assessment will not give rise to any new or materially different effects.

150. The LoDs are therefore not considered further within this assessment.

Table 29-18 Design Parameters / representative case scenario summary (where applicable)

Impact	Details	Value	Notes / assumptions
Construction			
Impact 1: Impacts on onshore and nearshore recreational receptors during the construction of the OTI and landfall.	**Landfall**		This impact relates to onshore and nearshore recreational receptors during the construction of the OTI and landfall.
	Temporary infrastructure		
	Dimensions of temporary access ramp (including route from main compound) (L x W) (m)	60 x 10	
	Typical duration of temporary access ramp (months)	24	
	Duration of temporary footpath diversion (weeks)	8	
	Temporary cofferdam dimensions (L x W) (m)	40 x 75	
	Duration of temporary cofferdam once constructed (weeks)	4	
	Installation methods and effects		
	Area of site clearance at the TJBs (back berm) (m^2)	2,200	
	Area of site clearance between TJBs and the HWM (m^2)	2,200	
	Area of site clearance between for temporary access ramp (m^2)	600	
	Length of intertidal cable ducts (from end of landfall cable ducts to approximately 350m from HWM) (m)	300	

Distance within the transition zone over which cables will be buried in open cut trenches (km)	1.7
Distance within the transition zone over which cables will be buried using a shallow-water trenching tool (km)	2
Onshore export cables	
Temporary infrastructure	
Number of temporary tunnel compounds	3
Installation methods and effects	
Overall duration to complete tunnel construction and cable duct installation	21
Number of tunnel shafts	3
Onshore substation	
Installation methods and effects	
Total footprint of temporary site clearance inc. access roads (m2)	20,090
ESBN network cables	
Temporary infrastructure	
Number of HDD sections	1
Total length of HDD section (m)	135
Depth of the HDD installation at its deepest (m bgl)	10
Construction compounds	
Compound A area (m^2)	19,800
Compound B area (m^2)	32,300

	Compound C area (m^2)	3,350	
	Compound D area (m^2)	360	
Impact 2: Impact on the tourism economy during the construction phase of the offshore infrastructure.	This impact relates to changes in the tourism economy during the construction phase of the offshore infrastructure. Changes in the tourism economy would not be dictated by WTG layout options or installation options for offshore infrastructure. As such, layout and installation options would not influence the determination of an overall magnitude of impact or introduce new impacts relative to tourism economy. The identification of a representative scenario relative to layout and installation methods was considered not applicable for **Impact 2.**		
Impact 3: Economic effects associated with construction of the CWP Project.	**CWP Project**		
	Total FTE (years) created locally (direct & Indirectly) during construction stage (installation and commissioning)	390 (190 direct +200 indirect)	This impact relates to changes in the economic and employment profile relative to the construction phase of the CWP Project. It is noted that a fixed design is presented for the OTI. Changes in economic and employment profile would not be dictated by WTG layout options or installation options. As such, offshore layout and installation options would not influence the determination of an overall magnitude of impact or introduce new impacts relative to economic and employment profile.
	Total GVA (million €) created locally (directly & Indirectly) during construction stage (installation and commissioning)	45 (15 direct +30 indirect)	

			The identification of a representative scenario relative to offshore layout and installation methods was considered to be not applicable for Impact 3.
Operations and maintenance			
Impact 1: Impacts on recreational receptors associated with the O&M phase of the offshore infrastructure	This impact relates to potential O&M phase impacts from the offshore infrastructure on recreational receptors. This impact references out to the findings of topic specific assessments, where these receptors have been considered. This includes: • Chapter 15 Seascape Landscape and Visual Impact Assessment • Chapter 16 Shipping and Navigation. Representative scenario is addressed within these topic specific assessments.		
Impact 2: Impacts on the tourism economy associated with the O&M phase of the offshore infrastructure.	This impact relates to potential changes in tourism economy which would be associated with the O&M phase of the offshore infrastructure . Impacts would not be dictated by permanent layout options for the CWP Project, as these would make no discernible difference to the tourism economies. As such, permanent layout options would not influence the determination of an overall magnitude of impact or introduce new impacts relative to the tourism economy. The identification of a representative scenario was considered to be not applicable for Impact 2.		

Impact 3: Economic effects associated with the O&M phase of the CWP Project.	**CWP Project**		
	Total FTE (years) created locally (directly & Indirectly) during the O&M phase	3,750 (2,010 direct + 1,740 indirect)	This impact relates to potential changes in employment and economic benefits which would be associated with the O&M phase of the CWP Project. Impacts would not be dictated by permanent layout options for the CWP Project, as these would make no discernible difference to employment and economic benefits. As such, permanent layout options would not influence the determination of an overall magnitude of impact or introduce new impacts relative to employment and economic benefits. The identification of a representative scenario was considered to be not applicable for Impact 2.
	Total GVA (million €) created locally (directly & Indirectly) during the O&M phase	470 (270 direct + 200 indirect)	

Decommissioning	
Offshore / Onshore	**Offshore** For the purposes of the EIA, at the end of the operational lifetime of the CWP Project, it is assumed that all offshore infrastructure will be removed where practical to do so. In this regard, for the purposes of an representative scenario for decommissioning impacts, the following assumptions have been made: • The WTGs and OSS topsides shall be completely removed. • Following WTG and OSS topside decommissioning and removal, the monopile foundations will be cut below the seabed level to a depth that will ensure that the remaining foundation is unlikely to become exposed. This is likely to be approximately one metre below the seabed, although the exact depth will depend upon the seabed conditions and site characteristics at the time of decommissioning. • All cables and associated cable protection in the offshore environment shall be wholly removed. It is likely that equipment similar to that which is used to install the cables may be used to reverse the burial process and expose them. Therefore, the area of seabed impacted during the removal of the cables is anticipated to be the same as the area impacted during the installation of the cables. • Generally, decommissioning is anticipated to be a reverse of the construction and installation process for the CWP Project, and the assumptions around the number of vessels on site and vessel round trips are therefore the same as described for the construction phase of the offshore components. Given the above, it is anticipated that for the purposes of an representative scenario, the impacts will be no greater than those identified for the construction phase. **Onshore** It is recognised that legislation and industry best practice change over time. However, for the purposes of the EIA, at the end of the operational lifetime of the CWP Project, it is assumed that all OTI will be removed where practical to do so. In this regard, for the purposes of an assessment scenario for decommissioning impacts, the following assumptions have been made: • The TJBs and onshore export cables (including the cable ducting) shall be completely removed. • The landfall cable ducts and associated cables shall be completely removed.

	• The underground tunnel, within which the onshore export cables will be installed shall be left in situ and may be reused for the same or another purpose. • The onshore substation buildings and electrical infrastructure shall be completely removed. • The reclaimed land, substation platform, perimeter structures and the new access bridge at the onshore substation site will remain in situ and may reused for the same or another purpose. • The ESBN network cables (including the cable ducting) shall be completely removed. The general sequence for decommissioning is likely to include: • Dismantling and removal of electrical equipment; • Removal of ducting and cabling, where practical to do so; • Removal and demolition of buildings, fences, and services equipment; and • Reinstatement and landscaping works. Closer to the time of decommissioning, it may be decided that removal of certain infrastructure, such as the TJBs, landfall cable ducts and associated cables, onshore export cables and ESBN networks cables, would lead to a greater environmental impact than leaving the components in situ. In this case it may be preferable not to remove these components at the end of their operational life. In any case, the final requirements for decommissioning of the OTI, including landfall infrastructure, will be agreed at the time with the relevant statutory consultees. It is anticipated that for the purposes of an assessment scenario, impacts will be no greater than those identified for the construction phase.

Table 29-19 Limit of deviation summary relevant to population

Project component	Limit of deviation	LoD impact summary
Offshore infrastructure		
WTGs / OSSs	100m from the centre point of each WTG and OSS location is proposed to allow for small adjustments to be made to the structure locations.	No potential for new or materially different effects
IACs / interconnector cables	100 m either side of the preferred alignment of each IAC and interconnector cable is proposed to allow for small adjustments to be made to the cable alignments.	No potential for new or materially different effects
Offshore export cables	The offshore export cable corridor (OECC)	No potential for new or materially different effects
Landfall		
TJBs	0.5 m either side (i.e., east / west) of the preferred TJB location	No potential for new or materially different effects
Landfall cable ducts (and associated offshore export cables within the ducts)	Defined LoD boundary	No potential for new or materially different effects
Intertidal cable ducts (and associated offshore export cables within the ducts)	The OECC	No potential for new or materially different effects
Intertidal offshore export cables (non-ducted sections)	The OECC	No potential for new or materially different effects
Onshore substation		
Location of onshore substation revetment perimeter structure	Defined LoD for sheet piling at toe of the revetement	No potential for new or materially different effects

29.9 Primary mitigation measures

151. Throughout the evolution of the CWP Project, measures have been adopted as part of the evolution of the project design and approach to construction, to avoid or otherwise reduce adverse impacts on the environment. These mitigation measures are referred to as 'primary mitigation'. They are an inherent part of the CWP Project and are effectively 'built in' to the impact assessment.

152. Primary mitigation measures relevant to the assessment of population are set out in **Table 29-20**. Where additional mitigation measures are proposed, these are detailed in the impact assessment **Section 29.10**. Additional mitigation includes measures that are not incorporated into the design of the CWP Project and require further activity to secure the required outcome of avoiding or reducing impact significance.

Table 29-20 Primary mitigation measures

Project element	Description
Landfall	The construction methodology for the landfall infrastructure will ensure that there is a clear, safe access path maintained between Irishtown Nature Park and Sean Moore Park. While the existing path may be temporarily closed for landfall cable duct installation by open cut trenching, an alternative route diversion will be maintained so that through access is always maintained.
Onshore export cables	The installation method for the onshore export cables between the landfall and the onshore substation site (i.e., underground tunnelling) will ensure that open cut trenching is not required across Pigeon House Road. This will ensure that Pigeon House Road does not need to be closed during the onshore export cable installation works and will maintain access for the local population to the Great South Wall and the Poolbeg Lighthouse during the construction phase.
Offshore export cables / landfall	Offshore export cable ducts will be installed beneath the seabed in the intertidal area in Dublin Bay. Therefore, no impacts to recreational users of Dublin Bay shall be experienced during the O&M phase of the CWP Project.
Onshore substation	The site selection and consideration of alternatives process for the CWP Project (see EIAR **Chapter 3 Site Selection and Consideration of Alternatives**) considered a number of alternative locations for the onshore substation site. The process evaluated alternative sites using a multi-criteria assessment, which included a consideration of likely environmental effects. The main reasons for selecting the preferred onshore substation site included its proximity to the grid connection point and being within a heavily industrialised area. It is also located away from residential properties and areas of recreational amenity. The selection of the site is therefore considered a key driver for mitigation by avoidance.

29.10 Impact assessment

29.10.1 Construction phase

153. The potential environmental impacts arising from the CWP Project are listed in **Table 29-16**, along with the parameters against which each construction phase impact has been assessed. A description of the potential effect on population receptors caused by each identified impact is given below.

Impact 1: Impacts on onshore and nearshore recreational receptors during the construction of the OTI and landfall

154. Recreational receptors relevant to the construction of the OTI include the Irishtown Nature Park, Great South Wall and Poolbeg Lighthouse. From a nearshore perspective, receptors would include the Half Moon Swimming and Water Polo Club, users of Sandymount Strand (inc. swimming, surfing, windsurfing and kayaking) and the Poolbeg Yacht and Boat Club.

155. The open cut excavation at landfall (between the TJBs and high water mark) will consist of a single swathe 40 m in length and 70 m wide. Details are provided in **Chapter 4 Project Description**.

156. Following the excavation of the front and rear berms, the temporary footpath diversion will be provided to maintain public / recreational access. Once cable duct installation between the repositioned footpath and the temporary cofferdam is complete, the footpath will be reinstated to its original position. The remaining open cut trenching and cable duct installation will then be undertaken from the reinstated footpath into the TJBs and the front berm will be reinstated.

157. An indicative alignment for the footpath diversion is given in the planning drawings. It is anticipated that this temporary footpath diversion will be in place for eight weeks.

158. It is also possible that some work activities will require short periods of restricted access along the footpath while the footpath diversion is established. It is estimated that the footpath may be closed for up to one day at time and two days in total; however, it is likely that the works can be undertaken in such a way that will avoid any need to close the footpath.

159. The footpath provides an access point to the Irishtown Nature Park, Great South Wall and Poolbeg Lighthouse for those who are walking, running or cycling. Therefore, users of these amenities will experience some disruption due to diversion of the footpath, but it will not prevent users from getting to these recreational receptors.

160. An alternative access by foot, bike or car is also available via Pigeon House Road, which will have no planned closures the during construction phase, due to the tunnelling and HDD installation methods for the onshore export cables and ESBN network cables.

161. The installation of the offshore export cables within the intertidal and shallow waters of Dublin Bay will include sections of both ducted and non-ducted (i.e. burial) cable laying works and also the installation of a temporary cofferdam. Works to install the cables will require land-based and specialist shallow-water equipment. These works will be undertaken over two phases (24-month window) and there will be periods of time within this window when there will be no works in progress.

162. A temporary access ramp will be required to provide access an equipment and vehicles access from Construction Compound A (Compound A) to the intertidal area. A managed footpath crossing will be provided as part of this temporary access ramp design and it is anticipated that this will be required for 24 months and again it is noted that there will be periods of time within this 24-month window when there will be no works in progress on either the seaward side of the footpath or on the landward side

adjacent to the footpath. During these periods, it is intended that secure temporary fencing will be installed to provide safe, clear, unobstructed access across the temporary access ramp.

163. The OTI and landfall works will also be visible/partially visible in the surrounding environment, including to users of the footpath between Sandymount and the Great South Wall and the Irishtown Nature Park. For the Irishtown Nature Park, visibility would be limited due to the existing woodland across this area. The issue of visibility is addressed in detail in **Chapter 23 Landscape and Visual Impact Assessment**.

164. Similarly, the consideration of noise, air quality and traffic impacts for users of the recreational receptors, are detailed in in **Chapter 24 Noise and Vibration**, **Chapter 25 Air Quality and Chapter 27 Traffic and Transport**, respectively.

Receptor sensitivity

165. The recreational receptors provide a locally important amenity and recreational value and, on this basis, their sensitivity is considered Low.

Magnitude of impact

166. The construction of the OTI will result in some disruption to the users of the recreational receptors.

167. The Irishtown Nature Park, Great South Wall and Poolbeg Lighthouse will continue to be accessible to users from both the footpath and the Pigeon House Road.

168. A length of c. 55 m of the existing footpath will be closed for the period of eight weeks and users of the path will be diverted inland for a total distance of approximately c. 130 m before rejoining the existing path. The effect of this disruption will be temporary in EIA terms. In respect of the managed crossing for the temporary access ramp, this type of disruption would be similar to road or footpath repair works.

169. For the nearshore receptors, impacts are associated with any temporary disturbance resulting from the installation of the offshore export cables through the intertidal area. During the installation periods, working zones will be clearly identified and communicated to users.

170. In relation to disturbance of the recreational receptors during the construction phase, the air quality, noise and traffic assessments all concluded no significant effects. The visual assessment concluded that there would be significant effects associated with views from the footpath and the Sandymount Strand. There will be views of the works through the intertidal area, the open cut at the footpath and some limited views of the onshore substation buildings being constructed. Overall, however these effects would be short-term and reversible.

171. Overall it is considered that the magnitude of impact for the recreational receptors would result in only slight changes during the construction phase. The magnitude of impact has been considered Low.

Significance of the effect

172. The sensitivity of recreational receptors is considered to be Low and the magnitude of impact is assessed as Low. Therefore (as per the matrix in **Table 29-6**), an adverse effect of **Slight** is predicted, which is not significant in EIA terms. These effects would be temporary and reversible.

Additional mitigation

173. Based on the predicted level of effect, it is concluded that no additional mitigation is required beyond the embedded mitigation described in **Section 29.9**. However, the additional mitigation outlined below will also be implemented during the construction phase of the OTI.

174. The Applicant's contractors will adopt specific measures relevant to community engagement during the construction phase. These will be secured in the **Construction Environmental Management Plan (CEMP)**, submitted as part of the planning application and include:

- The CWP Project have a dedicated communications and engagement team to ensure proactive and well informed stakeholder engagement. Central to this is the Community Liaison Officer (CLO) whose role is to establish project awareness among local communities, build local relationships and engage proactively throughout the project area. The CLO will remain in place throughout the construction of the CWP Project to provide a vital link between the project and the local communities and to ensure community needs and any issues are addressed.

Residual effect

175. With the adoption of the additional mitigation measures outlined above, the magnitude of impact will be Negligible. The significance of the residual effect is therefore predicted to be **Not Significant**, which is not significant in EIA terms.

Impact 2: Impacts on the tourism economy during the construction phase of the offshore infrastructure

176. This impact relates to the construction of the offshore infrastructure at the array site and the installation of the offshore export cables, from the array site towards landfall.

177. The study area contains a number of areas that experience a tourism economy such as the areas of Howth, Killiney, Bray, Greystones and Wicklow. These areas will also have some views of the offshore infrastructure.

178. Research conducted in separate studies by Fáilte Ireland and by Hatch Ltd examines the relationship of visitor perceptions on wind farms and impacts on the tourism economy respectively.

179. The Hatch Ltd study '*UK Offshore Wind Farms and local Seaside Tourism Economies – Employment Evidence'* presented data on employment in the tourism sector prior, to the construction of the wind farm, during construction, and the employment once the wind farm was fully commissioned.

180. The study focused on selected seaside towns, within 30 km of seven United Kingdom (UK) windfarms and with views to the windfarm. The objective of the study was to examine the relationship between the tourism sector and offshore windfarms. In summary, tourism employment in the selected seaside towns from prior to construction, during construction and post completion displayed generally positive growth, with one specific seaside town experiencing the greatest increase at 23%. The tourism employment growth recorded in the seaside towns were broadly in line with or above regional and national growth trends.

181. The research conducted did not provide evidence of a decline in tourism employment during construction, arising from the development of largescale offshore wind farms. The employment trends evidenced in the tourism sector tended to be generally positive or at least neutral.

182. The focus of the Fáilte Ireland study '*Report on Visitor Awareness and Perceptions of the Irish Landscape'* was to determine domestic and international visitor awareness of 'development' within the

surrounding landscape. This 'development' included wind turbines and the study considered a range of landscapes. Whilst the study does not address the construction of development specifically, it did conclude that '*visible development is not, generally, noticed by Visitors and it does not adversely affect their impressions of the quality of the landscape'.*

Receptor sensitivity

183. The tourism economy is established within the respective areas. Overall, the economy has been considered as having a locally important value and, on this basis, the sensitivity is considered Low.

Magnitude of impact

184. As evidenced in the Hatch Ltd, the construction phase of an offshore wind farm would not be expected to result in negative impacts on the tourism economy during the construction phase.

185. It is considered that the development of offshore infrastructure would deter visitors to an area, with the Fáilte Ireland study indicating that the majority of visitors do not appear to notice development in the landscape.

186. It is considered that the magnitude of impact on the tourism economy is Negligible.

Significance of the effect

187. The receptor sensitivity is Low, and the magnitude of impact is Negligible. Therefore (as per the matrix in **Table 29-6**), an adverse effect of **Not Significant** is predicted, which is not significant in EIA terms.

Additional mitigation

188. No additional mitigation is required beyond the embedded mitigation, described in **Section 29.9** of this chapter.

Residual effect

189. As no additional mitigation is required. The significance of the residual effect is therefore predicted to remain at **Not Significant**, which is not significant in EIA terms.

Impact 3: Economic effects associated with construction of the CWP Project

190. BVG Associates were commissioned by the Applicant to conduct an economic benefit analysis of the CWP Project. This assessment was based on defined supply chain categories, which are detailed in **Appendix 29.3**. The Report also does not differentiate between offshore and onshore infrastructure and presents combined findings for the overall CWP Project

191. The economic benefit analysis methodology is described in **Section 3** of **Appendix 29.3 Economic Impact Analysis** and defines the economic benefits under two metrics, namely:

- Gross value added (GVA) – the value generated by any unit engaged in the production of goods and services; and
- Full-time equivalent (FTE) – one FTE job year is the same as one full-time job for one year.

192. This total generation during the installation and commissioning stage consists of €45 million and €40 million generated locally and in the 'rest of Ireland' respectively, and 390 FTE and 350 FTE for both the 'local' economy and the 'rest of Ireland' respectively.

193. The €45 million created locally is composed of €15 million created directly and €30 million created indirectly. The €40 million created in the 'rest of Ireland' consists of €10 million directly and €30 million indirectly.

194. The 390 FTE created locally is composed of 190 FTE created directly and 200 FTE created indirectly.

195. **Table 5** and **Table 6** of the **Appendix 29.3 Economic Impact Analysis** summarises the economic benefits from the CWP Project under all supply chain categories.

Receptor sensitivity

196. Economic activity in areas such as the Dublin and Wicklow regions was considered to be generally in line with national averages. The surrounding economy has therefore been considered as nationally important and, on this basis, the sensitivity is considered Medium.

Magnitude of impact

197. The increased economic activity that will occur, is evident in the direct and indirect FTE created locally, and this is economically positive. However, on a national scale the benefits, though positive, are likely to be slight and therefore, the magnitude of impact is considered **Low**.

Significance of the effect

198. The sensitivity of the economic receptor is considered to be Medium and the magnitude of the impact is Low. Therefore (as per the matrix in **Table 29-6**), a **Moderate–Slight** positive effect is predicted, which is not significant in EIA terms.

Additional mitigation

199. No additional mitigation is required beyond the embedded mitigation described in **Section 29.9** of this chapter, due to the positive nature of this impact.

Residual effect

200. As there is no additional mitigation required due to the positive nature of this impact, the significance of the residual effect remains as set out above **Moderate–Slight**, which is not significant in EIA terms.

29.10.2 Operational phase

Impact 1: Impacts on recreational receptors during the O&M phase of the offshore infrastructure

201. Impacts on recreational receptors are considered in relation to the offshore infrastructure at the array site during the O&M phase.

202. The section of the assessment summarises the conclusions of the relevant topic specific assessments where these receptors are considered, including:

- **Chapter 15 Seascape Landscape Visual and Impact Assessment,** where effects on the visual amenity of receptors groups including key walking routes are considered;
- **Chapter 16 Shipping and Navigation,** where shipping and navigation risks are associated with the O&M of the offshore infrastructure is considered

203. **Chapter 15 Seascape, Landscape and Visual Impact Assessment** identifies significant effects on some Character Areas and selected views. However, the assessment also concluded that the CWP Project could be accommodated within views experienced by visual receptor groups. The visual receptors perceived experience of the surrounding environment would not fundamentally change.

204. Expansive views would remain out across a large-scale seascape and the CWP Project was therefore judged to be capable of being accommodated in SLVIA terms.

205. **Chapter 16 Shipping and Navigation** considers a number of receptors including recreational vessels. The assessment considers a number of aspects including displacement, collision risk and allision risk. The assessment concluded that with the implantation of additional mitigation, there would be no significant residual effects associated with shipping and navigation.

Impact 2: Impacts on the tourism economy associated with the O&M phase of the offshore infrastructure

206. Impacts on the tourism economy in areas such as Howth, Bray, Greystones and Wicklow are considered in relation to the presence of the offshore infrastructure at the array site during the O&M phase.

207. The Hatch Ltd study (noted earlier), concluded that their data did not provide evidence of a decline in tourism employment after construction of largescale offshore wind farms. The post construction employment trends evidenced in the tourism sector tended to be generally positive or at least neutral.

208. Based on the case studies undertaken by the Fáilte Ireland study (noted earlier), it was concluded that visible developments such as wind farms, were generally not noticed and did not negatively impact the users impression of the surrounding landscape.

Receptor sensitivity

209. The tourism economy is established within the respective areas. Overall, the economy has been considered as having a locally important value and, on this basis, the sensitivity is considered Low.

Magnitude of impact

210. As evidenced in the Hatch Ltd and Fáilte Ireland studies, the presence of an offshore wind farm would not be expected to result in negative impacts on the tourism economy.

211. It was considered that the presence of the offshore infrastructure would not have any discernible negative impact on the tourism economy and on this basis, the magnitude of impact was considered Negligible.

Significance of the effect

212. The receptor sensitivity is Low, and the magnitude of impact is Negligible, as a result the significance of the effect is **Not Significant**, which is not significant in EIA terms.

Additional mitigation

213. No additional mitigation is required beyond the embedded mitigation, described in **Section 29.9** of this chapter.

Residual effect

214. As no additional mitigation is required. The significance of the residual effect is therefore predicted to remain at **Not Significant**, which is not significant in EIA terms.

Impact 3: Economic effects associated with the O&M phase of the CWP Project

215. BVG Associates were commissioned by the Applicant to conduct an economic benefit analysis of the CWP Project. This assessment was based on defined supply chain categories, which are detailed in **Appendix 29.3**. The Report also does not differentiate between offshore and onshore infrastructure and presents combined findings for the overall CWP Project.

216. This total generation during the O&M stage consists of €470 million and €270 million generated locally and in the 'rest of Ireland' respectively, and 3,750 FTE and 1,810 FTE for both the 'local' economy and the 'rest of Ireland' respectively.

217. The €470 million created locally is composed of €200 million created directly and €270 million created indirectly.

218. The 3,750 FTE created locally is composed of 2,010 FTE created directly and 1,740 FTE created indirectly.

219. The economic benefits from the CWP Project under all supply chain categories are set out in **Tables 5** and **6 of Appendix 29.3**.

Receptor sensitivity

220. Economic activity in areas such as the Dublin and Wicklow regions was considered to be generally in line with national averages. The surrounding economy has therefore been considered as nationally important and, on this basis, the sensitivity is considered Medium.

Magnitude of impact

221. The increased economic activity that will occur, is evident in the direct and indirect FTE created locally, and this is economically positive. However, on a national scale the benefits, though positive, are likely to be slight and therefore, the magnitude of impact is considered **Low**.

Significance of the effect

222. The sensitivity of the economic receptor is considered to be Medium and the magnitude of the impact is Low. Therefore (as per the matrix in **Table 29-6**), a **Moderate–Slight** positive effect is predicted, which is not significant in EIA terms.

Additional mitigation

223. No additional mitigation is required beyond the embedded mitigation described in **Section 29.9** of this chapter, due to the positive nature of this impact.

Residual effect

224. As there is no additional mitigation required due to the positive nature of this impact, the significance of the residual effect remains as set out above **Moderate–Slight**, which is not significant in EIA terms.

29.10.3 Decommissioning phase

Onshore transmission infrastructure and landfall

225. It is recognised that industry best practice, rules and legislation change over time. For the purposes of the EIA, at the end of the operational lifetime of the CWP Project, it is assumed that all infrastructure will be completely removed where practical to do so. In this regard, for the purposes of an assessment scenario for decommissioning impacts, the following assumptions have been made:

- The TJBs and onshore export cables (including the cable ducting) shall be completely removed.
- The landfall cable ducts and associated cables shall be completely removed.
- The underground tunnel, within which the onshore export cables will be installed shall be left in situ and may be re-used for the same or another purpose.
- The onshore substation buildings and electrical infrastructure shall be completely removed.
- The reclaimed land, substation platform, perimeter structures and the new access bridge at the onshore substation site will remain in situ and may re-used for the same or another purpose.
- The ESBN network cables (including the cable ducting) shall be completely removed.

226. The activities and methodology for decommissioning are likely to be similar to those related to the construction stage, albeit at a smaller scale, and may include:

- Dismantling and removal of electrical equipment;
- Removal of ducting and cabling, and where required leaving in situ;
- Removal and demolition of buildings, fences and services equipment; and
- Reinstatement and landscaping works.

227. Closer to the time of decommissioning, it may be decided that removal of infrastructure, such as the export cables, would lead to a greater environmental impact than leaving some components in situ. In this case, it may be proposed that export cables, cable ducts and landfall infrastructure are to remain in situ where appropriate and any requirements for decommissioning at the landfall will be agreed with statutory consultees.

228. Decommissioning impacts are expected to be of a similar type and magnitude to those anticipated during the construction phase, but generally of a shorter duration and scale.

Offshore Infrastructure

229. For the purposes of the EIA, at the end of the operational lifetime of the CWP Project, all offshore infrastructure will be rehabilitated. In this regard, for the purposes of a representative scenario for decommissioning impacts, the following assumptions have been made:

- The WTGs and OSS topsides shall be completely removed.
- Following WTG and OSS topside decommissioning and removal, the monopile foundations will be cut below the seabed level, to a depth that will ensure the remaining foundation is unlikely to become exposed. This is likely to be approximately 1 m below seabed, although the exact depth will depend upon the seabed conditions and site characteristics at the time of decommissioning.
- All cables and associated cable protection in the offshore environment shall be wholly removed. It is likely that equipment similar to that which is used to install the cables may be used to reverse the burial process and expose them. Therefore, the area of seabed impacted during the removal of the cables is anticipated to be the same as the area impacted during the installation of the cables.
- Generally, decommissioning is anticipated to be a reverse of the construction and installation process for the CWP Project and the assumptions around the number of vessels on site, and vessel round trips is therefore the same as described for the construction phase of the offshore components.

230. Given the above, it is anticipated that for the purposes of a representative scenario, the impacts will be no greater than those identified for the construction phase.

29.11 Cumulative impacts

231. A fundamental component of the EIA is to consider and assess the potential for cumulative effects of the CWP Project with other projects, plans and activities (hereafter referred to as 'other development').

232. **Appendix 29.1** presents the findings of the Cumulative Effects Assessment (CEA) for population, which considers the residual effects presented in **Section 29.10** alongside the potential effects of other proposed and reasonably foreseeable other development.

233. A summary of the CEA for population is presented below.

234. Cumulative effects are considered across the construction and O&M phases of the CWP Project. The detail and scope of the decommissioning works for the CWP Project will be determined by the relevant legislation and guidance at the time of decommissioning. It is anticipated that the impacts will be no greater than those identified for the construction phase, and therefore no separate assessment of cumulative impacts during the decommissioning phase is presented within this CEA.

235. Stage 1 of the process involved establishing the longlist of other development with the potential to result in cumulative effects with the CWP Project. A tiered structure was used to categorise projects The proposed tiering structure is described in **Section 2** of **Appendix 29.1**.

236. Impact screening for residual effects was conducted and assessed which residual impacts for the CWP Project alone have the potential for a cumulative impact with other development.

237. The second step in the CEA for population is the identification of the other development that may result in cumulative effects for inclusion in the CEA (described as 'project screening'). This information is set out in **Section 4 of Appendix 29.1**.

238. An assessment of cumulative effects was undertaken, which assessed residual impacts previously identified against projects identified as having a potential for cumulative effects with regards to population.

239. In summary, the CEA for population does not identify any significant cumulative effects resulting from the CWP Project alongside other development.

29.12 Transboundary impacts

240. There are no transboundary impacts with regard to population, as the CWP would not be sited in proximity to any international boundaries. Transboundary impacts are therefore scoped out of this assessment and are not considered further.

29.13 Inter-relationships

241. The inter-related effects assessment considers the potential for all relevant effects across multiple topics to interact, spatially and temporally, to create inter-related effects on a receptor group. This includes incorporating the findings of the individual assessment chapters to describe potential additional effects that may be of greater significance when compared to individual effects acting on a receptor group.

242. The term 'receptor group' is used to highlight the fact that the proposed approach to the inter-relationships assessment has not assessed every individual receptor considered in this chapter, but instead focuses on groups of receptors that may be sensitive to inter-related effects.

243. **Chapter 5 EIA Methodology** provides a matrix to show at a broad level where across the EIAR interactions between effects on different receptor groups have been identified.

244. The potential inter-related effects that could arise in relation to population are presented in **Table 29-21**.

Table 29-21 Inter-related effects (phase) assessment for population

Impact / Receptor	Related chapter	Phase assessment
Construction phase		
Impact 1: Impacts on onshore and nearshore recreational receptors during the construction of the OTI.	**Chapter 23 Landscape and Visual Impact Assessment**; **Chapter 24 Noise and Vibration**; and **Chapter 25 Air Quality**	Construction phase activities have potential to impact on the recreational amenity (such as visual impacts, increased noise levels and increased dust emissions). Consideration has been given to these aspects in the respective chapters. Mitigation measures to reduce the significance of these effects are also described in these chapters. As a result of these mitigations, the assessments predict no significant effects. Therefore, it is not anticipated that any inter-related effects on recreational amenity will be produced that are of greater significance than those already identified.

Operations and maintenance phase		
Impact 1: Impacts on recreational receptors associated with the O&M phase of the offshore infrastructure	**Chapter 15 Seascape, Landscape and Visual Impact Assessment**; and **Chapter 16 Shipping and Navigation**	Operation phase activities have potential to impact on recreational amenity (such as seascape impacts and recreational impacts). Consideration has been given to these aspects in the respective chapters. Mitigation measures to reduce the significance of these effects are also described in these chapters. As a result of these mitigations, the assessments predict no significant effects. Therefore, it is not anticipated that any inter-related effects on recreational amenity will be produced that are of greater significance than those already identified.

29.14 Potential monitoring requirements

245. Monitoring requirements for the CWP Project are described in the Environmental Monitoring Plan submitted alongside the EIAR and further developed and agreed with stakeholders prior to construction.

246. The assessment of impacts on population as a result of the construction, O&M and decommissioning phases of the CWP Project are predicted to be not significant in EIA terms. Based on the predicted impacts, it is concluded that no specific monitoring is required.

29.15 Impact assessment summary

247. This chapter of the EIAR has assessed the potential environmental impacts on population from the construction, O&M and decommissioning phases of the CWP Project. The assessment considered the representative case scenario in terms of impacts assessment and limits of deviation were similarly considered to ensure a thorough assessment. The CEA concluded that there will be no likely significant cumulative effects from the CWP Project and other developments.

248. The CWP Project will support the development of Ireland's future energy security through the leveraging of renewable resources. The development and harnessing of wind energy is critical to enable Ireland to meet climate and energy commitments now and into the future. On a local level, the project will support the local economy in the form of an increased demand for labour and materials and services throughout the construction phase, resulting in positive economic effects both directly and indirectly. During the O&M phase, the CWP Project will support economic generation and employment via maintenance and service activities.

249. This chapter studies the potential impacts of the CWP Project on the population within both the offshore and onshore study areas respectively. The assessment considers population impacts during both the construction phase and the operational phase of the CWP Project, from the perspective of economic impacts, residential amenity, tourism and recreational disturbance. **Table 29-22 Summary of potential impacts and residual effects** summarises the impact assessment undertaken and confirms the significance of any residual effects, following the application of additional mitigation.

Table 29-22 Summary of potential impacts and residual effects

Potential impact	Receptor	Receptor sensitivity	Magnitude of impact	Significance of effect	Additional mitigation	Residual effect
Construction						
Impact 1: Impacts on onshore and nearshore recreational receptors during the construction of the OTI and landfall.	Recreational receptors	Low	Low	**Slight** (not significant)	Continued provision of the CLO during the construction phase	**Not Significant** (not significant)
Impact 2: Impact on the tourism economy during the construction phase of the offshore infrastructure.	Tourism economy	Low	Negligible	**Not Significant** (not significant)	N/A	**Not Significant** (not significant)
Impact 3: Economic effects associated with construction of the CWP Project.	Surrounding economy	Medium	Low	**Moderate–Slight** (not significant)	N/A	Positive **Moderate–Slight** (not significant)
Operations and maintenance						
Impact 1: Impacts on recreational receptors associated with the O&M phase of the offshore infrastructure	Recreational receptors	Impacts on recreational receptors are assessed in the following EIAR chapters respectively: • Chapter 15 Seascape, Landscape and Visual Impact • Chapter 16 Shipping and Navigation				

Impact 2: Impacts on the tourism economy associated with the O&M phase of the offshore infrastructure.	Tourism economy	Low	Negligible	**Not Significant** (not significant)	N/A	**Not Significant** (not significant)
Impact 3: Economic effects associated with the O&M phase of the CWP Project.	Surrounding economy	Medium	Low	**Moderate–Slight** (not significant)	N/A	Positive **Moderate–Slight** (not significant)
Decommissioning						
Onshore transmission infrastructure and landfall	It is anticipated that for the purposes of an assessment scenario, impacts will be no greater than those identified for the construction phase (not significant).					
Offshore Infrastructure	It is anticipated that for the purposes of a representative scenario, impacts will be no greater than those identified for the construction phase (not significant).					

29.16 References

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